
CONSERVATION RESERVE PROGRAM

SUPPLEMENTAL
Environmental Impact Statement



United States Department of Agriculture
Farm Service Agency

DRAFT

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Abstract

The United States Department of Agriculture (USDA) Commodity Credit Corporation (CCC) proposes to implement certain changes to the Conservation Reserve Program (CRP) enacted by the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill). USDA Farm Service Agency (FSA) administers the CRP on behalf of the CCC. This Supplemental Environmental Impact Statement (SEIS) is being prepared by FSA on behalf of CCC to examine the potential environmental consequences associated with implementing changes to CRP required by the 2008 Farm Bill (Public Law [PL] 110-246), and assist in developing new regulations. The SEIS is being completed in accordance with the National Environmental Policy Act (NEPA; PL 91-190, 42 United States Code [U.S.C.] 4321 et seq.). In 2003, a Programmatic Environmental Impact Statement (PEIS) was completed to evaluate the environmental consequences of implementing the Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) provisions for CRP and a Record of Decision was published May 8, 2003 (68 Federal Register [FR] 24848-24854). This SEIS tiers from the 2003 PEIS and, with certain exceptions, only evaluates those changed provisions in the 2008 Farm Bill governing CRP not previously addressed. The changes that are assessed in this SEIS are:

- In general, the CRP purposes now explicitly include addressing issues raised by state, regional and national conservation initiatives (see 16 U.S.C. 3831(a)).
- The cropping history requirements are updated to four of six years from 2002 to 2007 (see 16 U.S.C. 3831(b)).
- The enrollment authority is set at 39.2 million acres through fiscal year (FY) 2009 and reduced to 32.0 million acres for fiscal years 2010, 2011, and 2012 (see 16 U.S.C. 3831(d)).
- Alfalfa and multiyear grasses and legumes in a rotation practice with an agricultural commodity may contribute towards meeting crop history requirements (see 16 U.S.C. 3831(g)).
- The authority is granted to exclude acreage enrolled under Continuous Signup and the Conservation Reserve Enhancement Program from the 25 percent cropland limitation, provided county government concurs (see 16 U.S.C.3831 (b)).
- CCC requires management by the participant throughout the contract term to implement the conservation plan (see 16 U.S.C 3843).
- CCC provides exceptions to general prohibitions (see 16 U.S.C. 3844) on use including:
 - Managed harvesting with appropriate vegetation management during named periods and with a payment reduction,

- Managed harvesting for biomass with appropriate vegetation management during named periods and with a payment reduction,
- Grazing of invasive species with appropriate vegetation management during named periods and with a payment reduction, and
- Installation of wind turbines with appropriate vegetation management during named periods and with a payment reduction.
- Annual survey of dryland and cash rental rates by the National Agricultural Statistics Service (see 16 U.S.C. 3843(c)).
- Adds incentives for socially disadvantaged farmers and ranchers as well as limited resource farmers and ranchers and Indian tribes to participate in conservation programs (see 16 U.S.C. 3844).
- Development of habitat for native and managed pollinators and use of conservation practices that benefit them are encouraged for any conservation program (see 16 U.S.C. 3844).

The no action alternative (continuation of current program) is also analyzed in this draft SEIS to provide an environmental baseline.

To comment on this draft SEIS, please use one of the following methods:

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EXECUTIVE SUMMARY

S.1 BACKGROUND

The United States Department of Agriculture (USDA) Farm Service Agency (FSA) proposes to implement certain changes to the Conservation Reserve Program (CRP) reauthorized with new Title II provisions enacted by the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill). These changes include creation of new conservation initiatives, acreage changes under General and Continuous Signup, inclusion of alfalfa grown in rotation as a commodity crop, contract management requirements, new managed harvest and routine grazing provisions, including grazing for invasive vegetation species, rental payment rates, incentives for socially disadvantaged farmers and ranchers, and providing benefits to pollinator species. This Supplemental Environmental Impact Statement (SEIS) is being prepared to examine potential environmental impacts of alternatives to implement provisions enacted by the 2008 Farm Bill governing the CRP. In 2003, a Programmatic Environmental Impact Statement (PEIS) for the reauthorization of the CRP in Title II of the Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) was completed (FSA 2003) and a Record of Decision was published. This SEIS tiers from the 2003 PEIS and, with certain exceptions, only evaluates those changed provisions in the 2008 Farm Bill governing CRP not previously addressed.

S.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to establish the basis for regulations to implement applicable changes to CRP as specified in the 2008 Farm Bill. The need for the Proposed Action is to fulfill the FSA responsibility, as assigned by the Secretary of Agriculture (hereinafter referred to as Secretary), to administer certain conservation provisions of the 2008 Farm Bill.

S.3 PROPOSED ACTION AND ALTERNATIVES

The 2008 Farm Bill reauthorizes the CRP through September 30, 2012, stipulating a number of changes to the program. This SEIS assesses those mandatory changes to CRP enacted by the 2008 Farm Bill that have potential environmental impacts not previously assessed under the 2003 CRP PEIS (FSA 2003).

The Proposed Action would implement certain changes to the CRP as enacted by Congress in the 2008 Farm Bill. These changes include:

Provision 1(National Conservation Initiatives): In General 1985 Act, Sec. 1231(a), program purposes now explicitly recognize "addressing issues raised by State, regional, and national conservation initiatives."

- No Action Alternative: State, regional and National conservation needs best addressed by enrollment in CRP are met by establishing National and State Conservation Priority Areas (CPA), the Conservation Reserve Enhancement Program (CREPs), various conservation initiatives, and providing payment incentives under Continuous enrollment to increase enrollment in these areas. Specific target enrollment goals are identified for CREPs and initiatives. State conservation needs best met by enrollment in CRP are provided for by CREPs and State CPAs.

- Alternative 1: USDA targeted national conservation initiatives would be limited to Continuous signup and require pay-as-you-go (PAYGO) offset in the USDA budget. Three targeted national conservation initiatives would have acres evenly distributed among Fiscal Years (FY) 2010, 2011, and 2012 and include: the Water Resource Protection Initiative, Highly Erodible Land Initiative, and Regional Restoration of Critical Wildlife Habitat of National Concern Initiative.
- Alternative 2: No new national conservation initiatives would be established and the existing wetland initiative would be reduced.

Provision 2 (Maximum Enrollment): 1985 Act, Sec. 1231(d): Enrollment authority remains at 39.2 million acres for FY 2008 and FY 2009 and, for FY 2010 – 2012, the Secretary may maintain up to 32 million acres.

- No Action Alternative: The maximum acres authorized to be enrolled in CRP at any one time were adjusted to 32 million for FY 2010, apportioning 27.5 million acres to General Signup and 4.5 million acres to Targeted (Continuous) Signup until FY 2012.
- Alternative 1: The maximum acreage limit would be maintained at 32 million acres apportioning 24 million for General Signup and eight million acres for Targeted Signup.
- Alternative 2: Total enrolled acres would be reduced to 20 million acres for General Signup and four million acres for Targeted Signup. This reduction would be achieved by General Signup of 2.5 million acres in FY 2010, 2.5 million acres in FY 2011, and 3.5 million acres in FY 2012.

Provision 3 (Alfalfa Crop History): Multi-Year Grasses and Legumes 1985 Act, Sec. 1231(g) clarifies that alfalfa alone grown in an approved rotation practice is to be considered an agricultural commodity and can be used to fulfill the requirement that eligible land be cropped in four of the six years previous to 2008.

- No Action Alternative: The crop rotation practice would retain alfalfa in any rotation with multi-year grasses and legumes and/or summer fallow to meet crop history requirements. The crop rotation must have occurred from 1996 to 2001.
- Alternative 1: Alfalfa would be allowed to be rotated alone with an eligible commodity that meets the CRP crop history requirement if the rotation interval is eight years consisting of at least six years of alfalfa and two years of eligible commodity, with the rotation required to have occurred from 2002 to 2007.
- Alternative 2: The rotation practice would be alfalfa alone in rotation with an eligible commodity that meets the CRP crop history requirement if the rotation interval is 12 years, consisting of at least 10 years of alfalfa and two years of eligible commodity with the rotation having occurred in the period of 2002 to 2007.

Provision 4 (County Acreage Limitation Exception): 1985 Act, Sec. 1243(b): Additional authority to except cropland limit in cases limited to Continuous Signup or CREP enrollment, provided that county government agrees.

- No Action Alternative: No more than 25 percent of a given county's cropland may be enrolled in CRP and Wetland Reserve Program (WRP). This 25 percent limit may be

waived provided the action would not adversely affect the local economy and if operators in the county are having difficulties complying with highly erodible lands conservation requirements for working cropland. Acreage enrolled in shelterbelts and windbreaks Conservation Practices (CPs) are exempted from this percentage limit.

- Alternative 1: The county government exercises its yes/no authority to exceed the 25 percent total county cropland enrollment limit for additional Continuous or CREP enrollment, with no additional per county acreage limitation imposed.
- Alternative 2: The county government exercises its yes/no authority to exceed the 25 percent total county cropland enrollment limit for additional Continuous or CREP enrollment up to a new limit of no more than 50 percent.

Provision 5 (Conservation Plan Management): Duties of Owners and Operators, Conservation Plans 1985 Act, Sec. 1232(b): Clarifies conservation plan requirements to include management by the participant throughout the contract term to implement the conservation plan.

- No Action Alternative: Management as stipulated in the Conservation Plan is expected to occur. Mid-contract management is required on contracts executed after FY 2004 and is voluntary for contracts accepted before that year. Mid-contract management is cost shared at 50 percent and must be included in the Conservation Plan. Management activities are generally prohibited during the primary nesting season (PNS). Mid-contract management of certain CPs is exempted in certain states because they are not effective or not needed, given local conditions.
- Alternative 1: Requires Conservation Plan management throughout the contract term and mid-contract management tasks to be completed only if included in the approved Conservation Plan. Mid-contract management would not be required on an individual CP basis.
- Alternative 2: Requires Conservation Plan management throughout the contract term, including mid-contract management tasks if specified by an approved Conservation Plan, but in addition, would require mid-contract management on certain CPs as determined by individual State Technical Committees.

Provision 6 (Harvesting CRP): Duties of Owners and Operators, Haying and Grazing, etc. 1985 Act, Sec. 1232(a) (7): Removes authority for managed grazing and harvest, and adds new authority for routine grazing and managed harvest (including biomass) or other commercial use of forage on the land. Authorizes prescribed grazing for control of invasive species, emergency haying and grazing, and installation of wind turbines. These activities must not defeat the purpose of the CRP contract and must be consistent with the conservation of soil, water quality, and wildlife habitat (including habitat during nesting season for birds). A rental payment reduction commensurate with the economic value of the activity is imposed. Additional specific provisions include: managed harvest, emergency harvest and grazing, and routine grazing including prescribed grazing.

- No Action Alternative: There are currently several forms of authorized harvest, haying, and grazing on CRP, including managed haying and grazing (including biomass), emergency haying and grazing, incidental grazing (gleaning), permissive grazing, and

limited grazing for controlling kudzu. Payment reduction assessments vary per type of harvesting and are not assessed under certain conditions for Limited Grazing. Generally these activities are not authorized during the PNS. The frequency of managed haying and grazing is established on an individual State basis, but cannot be more often than once every three years.

- Alternative 1: Only those CPs currently authorized for managed haying and grazing, incidental grazing (gleaning), and harvest (biomass) would be authorized for routine grazing (including gleaning) and managed harvest. Any change to the established PNS, period timing) of routine grazing and harvest, length of harvest, and frequency of routine grazing and managed harvest by States requires individual analysis under NEPA by those State Technical Committees desiring changes.
- Prescribed grazing for control of invasive plant species other than kudzu would be allowed under Alternative 1, but not authorized for CP23, CP23A, non-grass related CP25, CP27, CP31, or CP39-41, and would occur only in accordance with a control plan included in the Conservation Plan. If implemented, no payment reduction would be associated with prescribed grazing to control invasive plants.
- Alternative 2: Any change to CPs authorized for managed harvest or routine and prescribed grazing, or changes to the PNS, timing, length, or frequency of managed harvests or routine and/or prescribed grazing would require additional NEPA analysis. The same prescribed grazing provisions as Alternative 1 would apply. Payment reduction commensurate with the economic value of the activity would be estimated on a percentage basis related to percent of the year the authorized activity would occur, currently proposed at 25 percent.

Provision 7 (NASS Cash Rental Rates): Annual Rental Payments 1985 Act, Sec. 1234(c), Requires NASS annual surveys of per-acre estimates of county average market dry-land and irrigated cash rental rates for cropland and pastureland in all counties within the 50 States with 20,000 acres or more of cropland and pastureland.

- No Action Alternative: The existing annual rental payment rules with a soil productivity adjustment would continue to be implemented. Targeted Signup incentives (for CREP, non-CREP Continuous CRP, and initiatives) would remain unchanged. Maintenance incentives remain the same for contracts executed prior to October 1, 2009, but for contracts executed after that date, maintenance incentives are reduced to zero for General Signup practices (CRP-644).
- Alternative 1: For new General Signup contracts executed after December 1, 2009, updated NASS market dryland and irrigated cash rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for Targeted Signups (for CREP, non-CREP Continuous CRP, and initiatives) may be increased to ensure program acreage targets are achieved. Maintenance incentives are reduced to zero for General Signup practices in accordance with a procedure that became effective October 1, 2009 (CRP-644).

- Alternative 2: For all new contracts executed after December 1, 2009, updated NASS market dryland and irrigated cash rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for Targeted Signups (for CREP, non-CREP Continuous CRP, and initiatives) would remain the same as the current program. Maintenance incentives are reduced to zero for General Signup practices in accordance with a procedure that became effective October 1, 2009 (CRP-644).

Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives): Incentives for Certain Farmers and Ranchers 2008 Act, Sec 2708: Adds incentives for socially-disadvantaged farmers, ranchers and Indian tribes to increase access to conservation programs.

- No Action Alternative: Section 1244(a) Beginning Farmers and Ranchers of the 2002 Farm Bill provides incentives to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs.
- Alternative 1: Beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes become eligible for cost share rates at least 25 percent above otherwise applicable rates (up to 90 percent) and advance payments of up to 30 percent of the amount determined for the purchase of materials and services. The USDA budget would require a PAYGO offset.
- Alternative 2: Beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes become eligible for signup incentives most likely for CPs that currently are eligible for signup incentive payments. The USDA budget would require a PAYGO offset.

Provision 9 (Pollinators Conservation): Pollinators 2008 Act, Sec 2708: Using any conservation program, the Secretary may, as appropriate, encourage the development of habitat for native and managed pollinators; and use of conservation practices that benefit native and managed pollinators.

- No Action Alternative: General methods to reduce impacts to pollinators are offered in NRCS conservation practice standards and technical guides (such as spot treatment of herbicides and pesticides, or not harvesting at peak flowering). Also, some States such as Michigan have initiated SAFE projects designed to benefit pollinators.
- Alternative 1: This alternative would include the development of a new Pollinator Habitat Conservation Practice with a goal of up to five percent of enrolled acres into new pollinator friendly habitat. Existing conservation practices for wildlife, grass, buffer strips, windbreaks, shelterbelts, and trees would also be modified to benefit native and managed pollinators by including plant species beneficial to pollinators at specified composition rates and other such practices.
- Alternative 2: Only the existing conservation practices for wildlife, grass, buffer strips, windbreaks, shelterbelts, and trees would be modified to benefit native and managed pollinators by including plant species beneficial to pollinators at specified composition rates and other such practices.

S.4 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

The environmental consequences from the proposed alternatives and the no action alternative are addressed in this SEIS and summarized in Table ES-1.

Table ES-1. Summary of Environmental Consequences

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i></p>	<p>Prior to site development a site-specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure. If protected species are identified during the evaluation, consultation with the USFWS may be required to determine potential impacts. If negative impacts to protected species are identified, proposed activities would not be authorized. To avoid impacts to protected species, U.S. Fish and Wildlife Service may require site-specific Best Management Practices (BMPs) during site preparation and management.</p> <p><u>Provision 1 (National Conservation Initiatives):</u> Continuation of the current procedures to address National, State, and regional conservation initiatives would benefit vegetative diversity and preserve native species; providing quality habitat for wildlife, including protected species. For vegetation, this alternative is less beneficial than Alternative 1 because the latter potentially provides more diversity through larger scale regional initiatives. The No Action Alternative benefits aquatic vegetation more than Alternative 2, which reduces wetland initiatives. For wildlife and protected species, the No Action Alternative is less beneficial than Alternative 1 that addresses species with critical habitat needs on a regional scale, but overall, continuation of the existing program provides similar benefits as the action alternatives. No significant negative impacts would occur from the implementation of the No Action Alternative.</p>	<p><u>Provision 1: (National Conservation Initiatives):</u> Alternative 1 would continue current procedures but add Water Resource Protection, Highly Erodible Land, and Regional Restoration of Critical Wildlife Habitat Initiatives targeting a combined 1.5 million acres. This alternative would require PAYGO offset, potentially reducing other programs' services. These initiatives would increase vegetative diversity, create wildlife and protected species habitat, establish new riparian and wetland vegetation and habitat, and reduce soil erosion on a regional scale. Alternative 1 would be more beneficial for vegetative diversity than the No Action Alternative, and provide more aquatic vegetation than Alternative 2, which reduces wetland initiatives. This alternative would be more beneficial than both the No Action Alternative and Alternative 2 for wildlife with critical habitat needs, however, not substantially so due to the limited amount of acreage devoted to this initiative. Implementation of Alternative 1 would have no significant negative impacts to vegetation, wildlife or protected species.</p>	<p><u>Provision 1: (National Conservation Initiatives):</u> Under Alternative 2 current procedures would continue, but wetland initiatives would be reduced. Although wetland habitat would decrease under this alternative, the amount of terrestrial habitat would increase proportionately. The impacts to vegetation, wildlife and protected species under Alternative 2 are similar to those of the No Action Alternative, yet slightly less beneficial than those of Alternative 1, which addresses critical habitat conservation needs on a regional scale. Implementation of this alternative would not have significant negative impacts on vegetation, wildlife or protected species.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species (cont'd)</i></p>	<p><u>Provision 2 (Maximum Enrollment):</u> Under the No Action Alternative, long-term benefits to all biological resources would occur from maintaining the maximum enrollment acreage authorized by the 2008 Farm Bill. The benefits of this alternative for vegetation would be similar to those of Alternative 1, but would be less beneficial to wildlife and protected species as it would enroll half as many Targeted Signup acres which include the most highly environmentally sensitive lands. Continuation of current procedures would be more beneficial for all biological resources than Alternative 2, which would reduce total authorized enrollment by 8.0 million acres. No significant negative impacts would occur from the implementation of the No Action Alternative.</p> <p><u>Provision 3 (Alfalfa Crop History):</u> Under the No Action Alternative, continued removal of lands planted to alfalfa in rotation with multi-year grasses, legumes, summer fallow, and eligible commodities during 1996-2001 from crop production and subsequent establishment of conservation covers provides for vegetative diversity, and creates more optimal habitat for wildlife and protected species. The No Action Alternative may be more beneficial than the action alternatives since it allows any rotation interval. While the action alternatives may qualify additional acres for</p>	<p><u>Provision 2 (Maximum Enrollment):</u> Under Alternative 1 the increase in the amount of Targeted Signup acres would allow for the enrollment of more environmentally desirable and high priority acreage than that of the No Action Alternative, and would thus be more beneficial for vegetation, wildlife, and protected species. Similarly, Alternative 1 would be more beneficial than Alternative 2 for all biological resource areas since it authorizes 8.0 million more acres and more Targeted signup acres. No significant negative impacts would occur from the implementation of this alternative.</p> <p><u>Provision 3 (Alfalfa Crop History):</u> Under Alternative 1, expanding the program to include lands planted in alfalfa alone in rotation with other commodity crops in an eight-year interval (six years alfalfa and two years commodity crop), with the rotation occurring within 2002 to 2007, would make other agricultural lands eligible without increasing the overall amount of acres eligible for enrollment. This would provide benefits to biological resources similar to those of the No Action Alternative. While the change to alfalfa cropping history years and allowing enrollment of alfalfa alone in</p>	<p><u>Provision 2 (Maximum Enrollment):</u> Under Alternative 2, the loss of 25% of authorized CRP acreage would be expected to result in the net loss of conservation covers, with some lands returning to crop production. This potentially could have significant negative impacts to vegetation, wildlife, and protected species on a local scale, such as in counties or States that have a large amount of acreage leaving the program due to contract expirations scheduled to occur from FY 2010 to FY 2012. This alternative is therefore less beneficial than the No Action Alternative or Alternative 1.</p> <p><u>Provision 3 (Alfalfa Crop History):</u> Under Alternative 2, expanding the program to include lands planted in alfalfa alone in rotation with other commodity crops in a 12-year interval (10 years alfalfa and two years commodity crop), with the rotation occurring within 2002 to 2007 would have impacts to biological resources similar to those of Alternative 1, but would be potentially less beneficial than both of the other alternatives due to an increased rotation interval which may limit the amount of land that would be eligible for enrollment; however, due to the limited number of acres available to enroll</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i> (cont'd)</p>	<p>enrollment, this may be offset by the new requirement to meet specific rotation crop histories. No significant negative impacts would occur from the continuation of the current crop history requirements.</p> <p><u>Provision 4 (County Acreage Limitation Exception):</u> Maintaining the current provisions under the No Action Alternative allows for enrollment of additional county cropland acreage above the 25% cap within authorized program limits in conservation practices that benefit vegetation, wildlife, and protected species. The No Action Alternative would be less restrictive than the action alternatives as it does not limit additional acreage to Continuous Signup or CREP, and does not impose an additional cap as does Alternative 2, but does not extend authority</p>	<p>rotation with an eligible commodity may increase the amount of land eligible for enrollment in CRP under this alternative over that of the No Action Alternative, its stricter rotation schedule may also limit the amount of land eligible for enrollment. Since Alternative 1 requires a shorter rotation period than Alternative 2, it may make more cropland eligible for enrollment; however, due to the limited number of acres available to enroll under the current 32 million acre cap until FY 2012, the number of acres affected in comparison to acres that otherwise meet cropping history requirements of the No Action Alternative or Alternative 2 would be negligible. No significant negative impacts to vegetation, wildlife, or protected species would occur under Alternative 1.</p> <p><u>Provision 4 (County Acreage Limitation Exception):</u> Under Alternative 1, granting the county yes/no authority to allow more CREP or Continuous signup acreage to be enrolled in CRP above the 25% county cropland cap would result in benefits to vegetation, wildlife, and protected species similar to those of the No Action Alternative by allowing more land within a county to be enrolled for conservation. This alternative restricts the acreage exceeding the county cap to CREP or Continuous CRP and thus potentially would allow less land than the No</p>	<p>under the current 32 million acre cap until FY 2012, the impact would not be substantial. Therefore, no significant negative impacts to vegetation, wildlife, or protected species would occur under Alternative 2.</p> <p><u>Provision 4 (County Acreage Limitation Exception):</u> While Alternative 2 would allow counties to exercise yes/no authority to exceed the 25% cap on enrollment for CREP and Continuous signups, the additional limit of 50% of the county's cropland would be more restrictive than either the No Action Alternative or Alternative 1 and would be less beneficial for biological resources; however, as with the other alternatives, overall CRP enrollment would still be limited to 32 million acres. No significant negative impacts to vegetation, wildlife, or protected</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i> (cont'd)</p>	<p>to grant exceptions to counties. No significant negative impacts to biological resources would occur under the No Action Alternative.</p> <p><u>Provision 5 (Conservation Plan Management):</u> The No Action Alternative maintains the current guidelines for mid-contract management (MCM); properly conducted MCM improves the vegetative stand's density and diversity, and subsequently its long-term viability. This would also ensure the long-term presence of habitat for wildlife and protected species. While not all wildlife and protected species respond similarly to the disturbance caused by MCM, some would respond favorably while others may temporarily abandon disturbed locations; however, adherence to State-specific NRCS Conservation Practice Standards minimizes the short-term, localized negative impacts. If accomplished properly, the plant community created would benefit targeted wildlife and protected species. The current provisions requiring MCM on an individual CP basis imposes activities that may not be applicable to local conditions. The benefits</p>	<p>Action Alternative to be enrolled in CRP, but has no additional acreage cap, so would potentially allow more land in CRP than Alternative 2. The difference among alternatives is minimized by the limited amount of acreage available to enroll under the 32 million acre program cap within FY 2010 to FY 2012. No significant negative impacts to biological resources would occur under Alternative 1.</p> <p><u>Provision 5 (Conservation Plan Management):</u> Alternative 1 would have both potentially beneficial and negative impacts to vegetation, wildlife and protected species. It provides greater flexibility to undertake MCM activities only as applicable to the particular lands proposed for enrollment than either the No Action Alternative or Alternative 2; however, negative impacts to biological resources could occur if appropriate MCM is not included in the Conservation Plan, an unlikely occurrence. Therefore, this alternative would be potentially less beneficial than either the No Action Alternative or Alternative 2. The potential impacts to vegetation, wildlife, and protected species under Alternative 1 would not be significantly negative.</p>	<p>species would occur from the implementation of Alternative 2.</p> <p><u>Provision 5 (Conservation Plan Management):</u> Alternative 2 includes the flexibility in tailoring MCM to local conditions and also gives States the ability to specify MCM by CP as appropriate to their region. This provides clear guidance to program participants effectively maintaining the health and vigor of the conservation cover, benefitting vegetation, wildlife, and protected species. The benefits of Alternative 2 would therefore be similar to the No Action Alternative and Alternative 1. No significant negative impacts to biological resources would occur from the implementation of Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i> (cont'd)</p>	<p>from the No Action Alternative are similar to those of Alternative 2, yet would be more beneficial than Alternative 1. Since the goal of MCM is preservation of the conservation cover which protects habitat, continuation of current provisions would have no significant negative impacts to vegetation, wildlife or protected species.</p> <p><u>Provision 6 (Harvesting CRP):</u> The No Action Alternative would allow continuation of the current forms of authorized harvest, haying, and grazing. Environmental Assessments (EAs) recently undertaken for 13 mid-western and western States found that haying and grazing under both managed and emergency conditions have the potential to significantly negatively impact vegetation if the amount of forage removed is excessive and prolonged, or if livestock is allowed to compact the soil. The Environmental Assessments (EAs) did not find significant negative impacts from increasing the frequency of these activities (from once every five or 10 years to once every three years), but significant negative impacts were likely if activities occurred during key vegetation growth or dormancy states. Any activity that threatens the long-term viability of the vegetative stand may also negatively impact wildlife and protected species. Likewise, these EAs found that the established primary nesting season (PNS) effectively protected many ground nesting</p>	<p><u>Provision 6 (Harvesting CRP):</u> Under Alternative 1, both the direct and indirect impacts to biological resources from managed harvests and routine grazing would be similar to the No Action Alternative. If implemented, prescribed grazing for the removal of invasive plants other than kudzu (except for CPs 23, CP23A, non-grass related CP25, CP27, CP31, and CPs 39-41) would positively impact biological resources by removing competition with native plant species and improving habitat. Prescribed grazing that would not be properly controlled has the potential to cause significant damage to vegetation and soils, and may promote the introduction and spread of invasive plants; however, a prescribed grazing plan included in the Conservation Plan would tailor the activity to meet the specifics of the site and control of a particular invasive plant species, including timing, stocking rate, duration, and frequency. The requirement for State-level NEPA analysis for changes to the PNS, timing, length, or frequency of managed</p>	<p><u>Provision 6 (Harvesting CRP):</u> Under Alternative 2, impacts to vegetation, wildlife and protected species would be similar to those of the other alternatives analyzed. The provisions for prescribed grazing would be the same as Alternative 1 and would have similar impacts to biological resources. The accomplishment of State-specific NEPA analysis to allow routine grazing or managed harvest on CPs other than those currently allowed would ensure any potential negative impacts would be addressed at a local level. Alternative 2 would be more beneficial than the No Action Alternative due to the authorization for prescribed grazing to control invasive species other than kudzu, improving the vegetative cover and wildlife habitat; but has benefits similar to Alternative 1, but would potentially create more localized benefits by allowing changes to CPs authorized for harvest or grazing. If the established provisions, standards, guidelines and Conservation Plan are followed and adapted to resource conditions just prior to managed</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species (cont'd)</i></p>	<p>grassland and sagebrush birds, fawning periods for several species of large mammals, nesting of many herpetofauna, and the period of greatest florescence of many invertebrates from direct impacts. Changing the frequency of managed haying and grazing to as little as once every three years had limited negative impacts on certain ground nesting birds due to the relatively small amount of CRP lands that have been harvested since these activities were authorized in 2002. Potential significantly negative impacts to certain ground nesting grassland or sagebrush birds would primarily be possible from emergency haying occurring on the same lands in consecutive years after managed haying or grazing, or extended fall or early spring grazing that removes nesting habitat for birds that prefer taller vegetation. Under the No Action Alternative, prescribed grazing would only be authorized for the control of kudzu, which would be less beneficial than either Alternative 1 or 2, as this tool would not be available to CRP participants. Providing harvesting, haying, and grazing activities would be accomplished within the requirements of the Conservation Plan while ensuring these activities are frequent enough to optimally maintain early successional grasslands, but not too frequent such that significantly negative impacts to biological resources would occur, the health and vigor of the</p>	<p>harvest or routine grazing would ensure potential negative impacts would be addressed on a local scale. The benefits of implementing Alternative 1 would be similar to Alternative 2, but since the latter would allow changes to CPs authorized for harvest or grazing, it would create more localized benefits than this alternative. Alternative 1 would have greater benefits than the No Action Alternative with the addition of prescribed grazing for invasive plant species other than kudzu. No significant negative impacts to vegetation, wildlife or protected species would occur under this alternative if the Conservation Plan is followed and adapted to resource conditions just prior to managed harvest or routine grazing (including prescribed grazing), the CPs authorized for harvest or routine grazing do not change, and State-level NEPA analysis would be completed for any proposed changes to the PNS, timing, length and frequency of these activities prior to implementation.</p>	<p>harvest or routine grazing (including prescribed grazing), and State-level NEPA analysis would be completed for any proposed changes to the CPs authorized for managed harvest and routine grazing, the PNS, and the timing, duration and frequency of these activities, then no significant negative effects to biological resources would occur under Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i> (cont'd)</p>	<p>conservation cover would be maintained, benefiting vegetation, wildlife, and protected species. If established provisions, standards, guidelines and the Conservation Plan are followed, and harvest plans are adjusted to resource conditions on the land just prior to haying or grazing, then no significant negative effects to biological resources would occur under the No Action Alternative.</p> <p><u>Provision 7 (NASS Cash Rental Rates):</u> Under the No Action Alternative CRP annual rental payment structure, benefits to biological resources would continue to accrue from FY 2010 to FY 2012, in largely the same places. Any shift in the geographic distribution of enrollments would be expected to be in response to scheduled expiring acres, not from continuation of existing rental rates. Benefits of the No Action Alternative would be similar to Alternative 1 for all biological resource areas as General and Targeted Signup enrollment goals would continue to be met. The No Action Alternative would be more beneficial to biological resources than Alternative 2 as the latter would use NASS cash rental rates for all signups without additional incentives for Targeted Signup, which would result in not reaching enrollment goals. For biological resources, this difference would not be substantial. No significantly negative impacts to biological resources would occur</p>	<p><u>Provision 7 (NASS Cash Rental Rates):</u> Impacts to biological resources under Alternative 1 would be similar to those discussed under the No Action Alternative; however, regional shifts in enrolled acres would occur due to some areas realizing higher CRP payments than others as a result of the use of updated NASS market dry-land and irrigated cash rental rates with soil productivity adjustments used to calculate annual rental payments, but overall participation would not be expected to change. General and Targeted Signup enrollment goals at current levels would still be met under Alternative 1, similar to the No Action Alternative; however, Alternative 1 would be more beneficial to biological resources than Alternative 2 due to offering additional enrollment incentives, increasing the potential for Targeted Signup goals to be achieved. No significant negative impacts to biological resources would occur from implementation of Alternative 1.</p>	<p><u>Provision 7 (NASS Cash Rental Rates):</u> As with Alternative 1, regional shifts may occur due to rental rate recalculation under Alternative 2 use of NASS rates for all signups. Since additional incentives would not be included to assure current Targeted Signup goals would be met, this alternative would not be as beneficial to vegetation, wildlife or protected species as Alternative 1; however, overall participation in General or Targeted Signups would not decrease substantially, thus no significant negative impacts to biological resources would occur under Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i> (cont'd)</p>	<p>from continuation of the current annual rental payment program.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> The continuation of the ability to offer incentives for beginning and limited resource farmers, ranchers and Indian tribes under the No Action Alternative benefits vegetation, wildlife and protected species by continuing to remove marginal land from crop production and establishing long-term conservation covers; however, both action alternatives would also expand to offer incentives to socially disadvantaged farmers and ranchers as well; therefore, both of these alternatives would potentially benefit biological resources more than the No Action Alternative. Since the pool of farmers and ranchers that meet the definition of socially disadvantaged would be relatively small, no significant negative impacts to biological resources would occur from implementation of the No Action Alternative.</p> <p><u>Provision 9 (Pollinator Conservation):</u> The No Action Alternative addresses pollinator needs with SAFE projects that target pollinators, but only provides for general methods to reduce the impacts to pollinators offered in NRCS Conservation Practice Standards and technical guides.</p>	<p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Under Alternative 1, the ability to offer incentives would be expanded from beginning and limited resource farmers/ranchers and Tribes to include socially disadvantaged farmers/ranchers, and higher incentive payments for all would be expected to provide the greatest incentive for enrollment and meeting signup goals, and thus would potentially have the most positive impact on biological resources; however, given the relatively small population that would qualify for these incentives, the impact of this alternative on biological resources would not be substantially different from the No Action Alternative or Alternative 2. As these incentives would require PAYGO offset, a reduction in payment or services in other programs may be required. No significant negative impacts would occur from implementation of Alternative 1.</p> <p><u>Provision 9 (Pollinator Conservation):</u> The addition of a new Pollinator Habitat Conservation Practice under Alternative 1; along with the modification of existing wildlife, grass, buffer strips, windbreaks, shelterbelts and tree CPs would benefit both native and managed pollinators. The</p>	<p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Under Alternative 2, signup incentives for beginning, limited resource, and socially disadvantaged farmers, ranchers and Indian tribes would be more limited than those of Alternative 1; and would also require a PAYGO offset for these payments. As such, this alternative would provide less incentive for enrollment which could result in not meeting signup enrollment goals to the fully authorized level, and thus would not be as beneficial for biological resources as Alternative 1. Yet, since this alternative would expand incentives to socially disadvantaged ranchers/farmers and offer more incentives to the affected population than the No Action Alternative, it would be more beneficial. Since the size of the population that would qualify would be relatively small, no significant negative impacts to biological resources would occur from implementation of Alternative 2.</p> <p><u>Provision 9 (Pollinator Conservation):</u> Under Alternative 2, modification of existing CPs to benefit pollinators would occur, benefiting vegetation, other wildlife, and protected species. Impacts from this alternative would be similar to those described for the No Action Alternative.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species (cont'd)</i></p>	<p>Many of the management practices that benefit pollinators would also benefit vegetation, such as spot treatment of herbicides. Similarly, methods to reduce impacts to pollinators would benefit wildlife by minimizing impacts to species that rely on insects as a food source. Therefore, continuation of existing procedures to benefit pollinators would not have significant negative impacts on vegetation, wildlife or protected species.</p>	<p>new CP may enroll up to 1.6 million acres of acreage that would be dedicated to pollinator-specific vegetation. Establishment of a new CP and modification of existing CPs that include the establishment or addition of vegetation which benefits pollinators would increase the diversity of the vegetative stand, and would also benefit the wildlife and protected species that utilize these habitats; however, pollinator habitat requires minimal disturbance and timed maintenance which may conflict with the needs of other wildlife species. For example, it is recommended that management occur no more than once every three to six years, the frequency of which may be too lengthy to benefit many wildlife dependent upon grasslands. This alternative would be more beneficial to vegetation, wildlife and protected species than the other alternatives analyzed. Alternative 1 could be more beneficial to biological resources since it would enroll 1.6 million acres that might otherwise be enrolled in CPs with less direct benefits to wildlife or terrestrial vegetation. No significant negative impacts would occur to biological resources from implementation of Alternative 1.</p>	<p>Because a new CP would not be established under this alternative, it would not be as beneficial to pollinators as Alternative 1; however, because the amount of acreage devoted to the new CP would be relatively small, this difference would not be substantial. No significant negative impacts would occur to biological resources from implementation of Alternative 2.</p>
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone</i></p>	<p><u>Provision 1 (National Conservation Initiatives):</u> Continuation of the current procedures to address National, State, and regional conservation initiatives would benefit water</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> Alternative 1 would continue current procedures but add Water Resource Protection, Highly Erodible Land, and</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> Reduction of wetland initiatives under Alternative 2 would result in reduced potential maximum benefits to water</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p><i>Management</i> Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i> (cont'd)</p>	<p>quality and quantity. The conversion of agricultural land to conservation cover benefit water resources by reducing levels of nutrient and chemical usage, and subsequent deposition into surrounding water bodies; reducing erosion and stream bank scouring; and increasing water infiltration into groundwater sources. The retirement of irrigated cropland would result in a reduction of water usage, and subsequent increase in the quantity of surface and groundwater. Site preparation activities such as grading, leveling and filling may be required for the installation of some practices. While some adverse effects to water resources during installation activities may occur, these impacts would be short-term and localized, and can be reduced through adherence to the Conservation Plan and site-specific BMPs. The No Action Alternative would be less beneficial to water resources than Alternative 1 which creates a new water resource initiative, but would be more beneficial than Alternative 2, which reduces existing wetland initiatives; however, since the acreage addressed by the action alternatives is limited, no significant negative impacts to water resources would occur from continued implementation of the No Action Alternative.</p>	<p>Regional Restoration of Critical Wildlife Habitat Initiatives targeting a combined 1.5 million acres. This alternative would require PAYGO offset, potentially reducing other programs' services. This alternative would result in indirect benefits to water resources as under the Water Resource Protection Initiative, up to one million acres would be removed from crop production, benefitting water resources through the reduction of approximately 2.5 million tons of soil, 427 million pounds of nitrogen, and 41 million pounds of phosphorus from reaching receiving waters. The Highly Erodible Land Initiative is expected to result in the reduction of erodible surfaces; reducing the sedimentation of water bodies and the amount of sediments that fill floodplains. Indirect benefits from the Critical Wildlife Habitat Initiative includes the establishment of natural riparian habitat plant communities which protect floodplains from scour erosion, create shade to reduce water temperatures, and reduce sediment, nutrient and pesticide loading into receiving waters. The retirement of irrigated agricultural lands would also result in a reduction of water usage, thus resulting in positive impacts to surface and groundwater quantity. Site preparation activities similar to those described for the No Action Alternative may occur, but can be minimized through the use of the same procedures. Of the alternatives analyzed,</p>	<p>resources provided by wetland functions. Wetlands provide services such as reducing downstream flooding, and stream bank and shoreline erosion; removing sediments, nutrients, and agricultural chemicals; and slowing runoff and improving infiltration. Alternative 2 would be less beneficial for water resources than either the No Action Alternative or Alternative 1; however, because wetland initiatives enrollment goals are relatively small (750,000 acres), and the current enrollment (223,250 acres) is less than the goal, no significant negative impacts to water resources would occur under Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i> (cont'd)</p>	<p><u>Provision 2 (Maximum Enrollment):</u> Of the 32 million acres authorized for CRP, the 27.5 million acres apportioned to General Signup under the No Action Alternative would result in a reduction of approximately 58 million tons of soil, 212 million pounds of nitrogen, and 47 million pounds of phosphorus from reaching receiving waters. Similarly, the 4.5 million acres apportioned for Targeted Signups such as CREP, farmable wetlands, SAFE, and initiatives would further reduce loading of soil, nitrogen, and phosphorus by an additional 11 million tons, 1.1 billion pounds, and 185 million pounds respectively. Continuation of the current program under the No Action Alternative would not be as beneficial to water resources as Alternative 1, and would be slightly more beneficial than Alternative 2. No significant negative impacts to water resources would occur under the No Action Alternative.</p>	<p>Alternative 1 provides the greatest benefits to water resources. No significantly negative impacts to water resources would occur under Alternative 1.</p> <p><u>Provision 2 (Maximum Enrollment):</u> Under Alternative 1, the reapportionment of acreage to 24 million acres for General Signup would result in a reduction of approximately 50 million tons of soil, 185 million pounds of nitrogen, and 41 million pounds of phosphorus from reaching receiving waters, slightly less than that of the No Action Alternative; however, the increase in Targeted Signup acreage to eight million acres would reduce sedimentation and nutrient loading by 20 million tons of soil, 1.9 billion pounds of nitrogen, and 330 million pounds of phosphorus, considerably higher than that of the No Action Alternative or Alternative 2. Overall, Alternative 1 provides greater benefits than either the No Action Alternative or Alternative 2. No significant negative impacts to water resources would occur from the implementation of Alternative 1.</p>	<p><u>Provision 2 (Maximum Enrollment):</u> The overall reduction of program acreage to 24 million acres under Alternative 2 would equate to a substantial reduction in sediment and pollutant removal from water resources. The apportionment of 20 million acres to General Signup would realize the removal of 42 million tons of soil, 154 million pounds of nitrogen and 34 million pounds of phosphorus. Likewise, the 4 million acres apportioned to Targeted Signups would result in the reduction of approximately 10 million tons of soil, 988 million pounds of nitrogen, and 165 million pounds of phosphorus; however, the reduction of eight million acres authorized for enrollment would result in potentially significantly negative impacts to water resources on a local level due to the increase in sedimentation, and nutrient and agricultural chemical loading into receiving waters in areas with large amounts of land leaving CRP during FY 2010 to FY 2012. Both the No Action Alternative and Alternative 1 would be more beneficial to water resources than Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i> (cont'd)</p>	<p><u>Provision 3 (Alfalfa Crop History):</u> Under the No Action Alternative, any land taken out of crop production would result in indirect benefits to water resources as sediment, nutrient, and agricultural chemical loading into receiving waters would be reduced. Similarly, reducing the amount of irrigated alfalfa acreage would decrease surface and groundwater usage. Removing alfalfa from production would provide some benefits, yet because alfalfa is a perennial crop requiring less tillage (only for establishment and rotation), in comparison to more intensive cropping, it provides benefits to water resources such as improved water filtration, slowing of runoff, and reduction of sediment, nutrient and agricultural chemical loading into receiving waters. Therefore, enrolling land planted in alfalfa instead of land that is more intensively cropped could reduce potential benefits. Since relatively few alfalfa acres would be enrolled under current procedures, no significant negative impacts to water resources under the No Action Alternative would occur.</p>	<p><u>Provision 3 (Alfalfa Crop History):</u> Under Alternative 1, expanding cropping history eligibility to alfalfa planted alone for a minimum of six years in rotation with two years of eligible agricultural commodity and the rotation occurring within 2002 to 2007, could qualify less acreage for enrollment than the No Action Alternative, yet more than Alternative 2. While the change to alfalfa cropping history years and allowing enrollment of alfalfa alone in rotation with an eligible commodity may increase the amount of land eligible for enrollment in CRP under this alternative over that of the No Action Alternative, its stricter rotation schedule may also limit the amount of land eligible for enrollment. Since Alternative 1 requires a shorter rotation period than Alternative 2, it may make more cropland eligible for enrollment; however, due to the limited number of acres available to enroll under the current 32 million acre cap until FY 2012, the number of acres affected in comparison to acres that otherwise meet cropping history requirements of the No Action Alternative or Alternative 2 would be negligible. The greatest benefits to water resources would be realized in States with the largest amount of irrigated alfalfa cropland such as California (963,086 acres) and Idaho (861,092 acres). No significant negative impacts to water resources would occur under Alternative 1.</p>	<p><u>Provision 3 (Alfalfa Crop History):</u> Under Alternative 2, expanding the program to include lands planted in alfalfa alone in rotation with other commodity crops in a 12-year interval (10 years alfalfa and 2 years commodity crop), with the rotation occurring within 2002 to 2007 would have impacts to water resources similar to those of Alternative 1, but would be potentially less beneficial than both of the other alternatives due to an increased rotation interval which may limit the amount of land that would be eligible for enrollment; however, due to the limited number of acres available to enroll under the current 32 million acre cap until FY 2012, the impact would not be substantial. Therefore, no significant negative impacts to water resources would occur under Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i> (cont'd)</p>	<p><u>Provision 4 (County Acreage Limitation Exception):</u> Maintaining the current provisions under the No Action Alternative allows for enrollment of additional county cropland acreage above the 25% cap within authorized program limits in conservation practices that benefit water resources. The No Action Alternative would be less restrictive than the action alternatives as it does not limit additional acreage to Continuous Signup or CREP, and does not impose an additional cap as does Alternative 2, but does not extend authority to grant exceptions to counties. No significant negative impacts to water resources would occur under the No Action Alternative.</p> <p><u>Provision 5 (Conservation Plan Management):</u> The No Action Alternative maintains the current guidelines for mid-contract management (MCM). Properly conducted MCM ensures the long-term viability of the conservation cover and it meeting its conservation purpose. This would also ensure continuing benefits to water resources such as reduced sedimentation,</p>	<p><u>Provision 4 (County Acreage Limitation Exception):</u> Under Alternative 1, granting the county yes/no authority to allow more CREP or Continuous signup acreage to be enrolled in CRP above the 25% county cropland cap would result in benefits to water resources similar to those of the No Action Alternative by allowing more land within a county to be enrolled for conservation. This alternative restricts the acreage exceeding the county cap to CREP or Continuous CRP and thus potentially would allow less land than the No Action Alternative to be enrolled in CRP, but has no additional acreage cap, so would potentially allow more land in CRP than Alternative 2. The difference among alternatives is minimized by the limited amount of acreage available to enroll under the 32 million acre program cap within FY 2010 to FY 2012. No significant negative impacts to water resources would occur under this alternative.</p> <p><u>Provision 5 (Conservation Plan Management):</u> Alternative 1 would have both potentially beneficial and negative impacts to water resources. It provides greater flexibility to undertake MCM activities only as applicable to the particular lands proposed for enrollment than either the No Action Alternative or Alternative 2; however, negative impacts to water resources could</p>	<p><u>Provision 4 (County Acreage Limitation Exception):</u> While Alternative 2 would allow counties to exercise yes/no authority to exceed the 25% cap on enrollment for CREP and Continuous signups, the additional limit of 50% of the county's cropland would be more restrictive than either the No Action Alternative or Alternative 1 and would be less beneficial for water resources; however, as with the other alternatives, overall CRP enrollment would still be limited to 32 million acres and the available acres under the cap from FY 2010 to FY 2012. No significant negative impacts to water resources would occur from the implementation of Alternative 2.</p> <p><u>Provision 5 (Conservation Plan Management):</u> Alternative 2 would include the flexibility in tailoring MCM to local conditions and also would give States the ability to specify MCM by CP as appropriate to their region. This would provide clear guidance to program participants effectively maintaining the health and vigor of the conservation cover, benefitting water resources. The benefits of</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i> (cont'd)</p>	<p>and nutrient and agricultural chemical deposition into receiving waters. Common MCM tasks (e.g., disking, prescribed burns, mowing) could threaten the long-term health and vigor of the conservation cover if improperly accomplished and temporarily negatively impact water resource quality; however, provided existing standards, provisions, and guidelines, and a Conservation Plan adjusted to resource conditions on the land prior to conducting these activities are adhered to, potential impacts would be minimized. The current provisions requiring MCM on an individual CP basis imposes activities that may not be applicable to local conditions. The benefits from the No Action Alternative are similar to those of Alternative 2, yet would be more beneficial than Alternative 1. Since the goal of MCM is preservation of the conservation cover which protects water quality, continuation of current provisions would have no significant negative impacts to water resources.</p> <p><u>Provision 6 (Harvesting CRP):</u> The No Action Alternative would allow continuation of the current forms of authorized harvest, haying, and grazing. Environmental Assessments (EAs) recently undertaken for 13 mid-western and western States found that haying and grazing under both managed and emergency conditions have the potential to significantly negatively</p>	<p>occur if appropriate MCM is not included in the Conservation Plan, an unlikely occurrence. Therefore, this alternative would be potentially less beneficial than either the No Action Alternative or Alternative 2. The potential impacts to water resources under Alternative 1 would not be significantly negative.</p> <p><u>Provision 6 (Harvesting CRP):</u> Under Alternative 1, both the direct and indirect impacts to water resources from managed harvests and routine grazing would be similar to the No Action Alternative. If implemented, prescribed grazing for the removal of invasive plants other than kudzu (except for CPs 23, CP23A, non-grass related CP25, CP27,</p>	<p>Alternative 2 would therefore be similar to the No Action Alternative and Alternative 1. No significant negative impacts to water resources would occur from the implementation of Alternative 2.</p> <p><u>Provision 6 (Harvesting CRP):</u> Under Alternative 2, impacts to water resources would be similar to those of the other alternatives analyzed. The provisions for prescribed grazing would be the same as Alternative 1 and would have similar impacts to water resources. The accomplishment of State-specific NEPA analysis to allow routine grazing or</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i> (cont'd)</p>	<p>impact vegetation if the amount of forage removed is excessive and prolonged, or if livestock is allowed to compact the soil. The EAs did not find significant negative impacts from increasing the frequency of these activities (from once every five or 10 years to once every three years), but significant negative impacts were likely if activities occurred during key vegetation growth or dormancy states. Any activity that threatens the long-term viability of the vegetative stand may also negatively impact water resources through increased sedimentation and pollutant loading of surface waters and increased runoff velocity contributing to waterbank erosion and flooding.</p> <p>Impacts to surface waters are currently minimized by prohibiting managed and emergency haying and grazing within 120 ft of permanent surface waterbodies, permitting no more than 50% of a field to be managed hayed, and a stocking rate no more than 75% of NRCS established rates. Adherence to NRCS Conservation Practice Standards which stipulate harvest criteria and exclusion of livestock from surface water further protect the vegetative stand and water resources. Properly managed haying and grazing activities are beneficial to ground cover as they mimic the natural disturbance regime which maintains the health and vigor of early successional grassland environments.</p>	<p>CP31, and CPs 39-41) would positively impact water resources by ensuring the long-term health and viability of the conservation cover. Prescribed grazing that would not be properly controlled has the potential to cause significant damage to vegetation and soils, indirectly negatively impacting water resources through increased rates of sedimentation of surface waters, potential increase in runoff and water velocity contributing to damaging floods, and reduced infiltration of water to groundwater sources; however, a prescribed grazing plan included in the Conservation Plan would tailor the activity to meet the specifics of the site and control of a particular invasive plant species, including timing, stocking rate, duration, and frequency. The requirement for State-level NEPA analysis for changes to the PNS, timing, length, or frequency of managed harvest or routine grazing would ensure potential negative impacts would be addressed on a local scale. The benefits of implementing Alternative 1 would be similar to Alternative 2, yet greater than the No Action Alternative with the addition of prescribed grazing for invasive plant species other than kudzu. No significant negative impacts to water resources would occur under this alternative if the Conservation Plan is followed and adapted to resource conditions just prior to managed harvest or routine grazing (including prescribed</p>	<p>managed harvest on CPs other than those currently allowed would ensure any potential negative impacts would be addressed at a local level. Alternative 2 would be more beneficial than the No Action Alternative due to the authorization for prescribed grazing to control invasive species other than kudzu, improving the vegetative cover and indirectly water resources; but has benefits similar to Alternative 1. If the established provisions, standards, guidelines and Conservation Plan are followed and adapted to resource conditions just prior to managed harvest or routine grazing (including prescribed grazing), and State-level NEPA analysis would be completed for any proposed changes to the CPs authorized for managed harvest and routine grazing, the PNS, and the timing, duration and frequency of these activities, then no significant negative effects to water resources would occur under Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i> (cont'd)</p>	<p>The No Action Alternative would be potentially less beneficial to water resources than the action alternatives as it would not allow prescribed grazing of invasive plant species other than kudzu. No significant negative impacts to water resources would occur from harvesting or grazing if these activities are completed in accordance with existing standards, provisions, and guidelines, and the parameters for conducting these activities are stipulated in the Conservation Plan that would be adjusted to resource conditions on the land prior to conducting these activities.</p> <p><u>Provision 7 (NASS Cash Rental Rates):</u> Under the current method for determining annual rental payments of the No Action Alternative, benefits to water resources would continue from FY 2010 to FY 2012, largely in the same locations. Any potential geographic shift in enrollments is expected to be in response to expiring acreage, not from the continuation of existing rental rates. Benefits of the No Action Alternative would be similar to Alternative 1 for all water resources as General and Targeted Signup goals would continue to be met. The No Action Alternative would be more beneficial than Alternative 2 which utilizes NASS cash rental rates for all signups without additional incentives for Targeted Signup, which would result in not reaching enrollment goals, yet</p>	<p>grazing), the CPs authorized for harvest or routine grazing do not change, and State-level NEPA analysis would be completed for any proposed changes to the PNS, timing, length and frequency of these activities prior to implementation.</p> <p><u>Provision 7 (NASS Cash Rental Rates):</u> Impacts to water resources under Alternative 1 would be similar to those discussed for the No Action Alternative; however, regional shifts in enrolled acres would occur due to some areas realizing higher CRP payments than others from using updated NASS market dryland and irrigated cash rental rates with soil productivity adjustments, but overall participation in the program would not decrease. General and Targeted Signup enrollment goals at current levels would still be met under Alternative 1, similar to the No Action Alternative; however, Alternative 1 would be more beneficial to water resources than Alternative 2 due to offering additional enrollment incentives, increasing the</p>	<p><u>Provision 7 (NASS Cash Rental Rates):</u> As with Alternative 1, regional shifts may occur due to rental rate recalculation use of NASS cash rental rates for all signups. Since additional incentives would not be offered to ensure current Targeted Signup goals would be met there would be fewer benefits to water resources than either the No Action Alternative or Alternative 1; however, overall participation in CRP would not decrease substantially, thus no significant negative impacts to water resources would occur under Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i> (cont'd)</p>	<p>not substantially so. No significant negative impacts to water resources would occur from continuation of the current rental payment program.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Continuation of the ability to offer incentives to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs under the No Action Alternative indirectly benefits water resources by removing marginal lands from crop production and creating or restoring wetlands or indirectly by establishing long-term conservation covers, consequently reducing sediment, nutrient, and pesticide loading into water bodies. Because both action alternatives offer incentives to socially disadvantaged farmers and ranchers that would assist in meeting enrollment goals, the No Action Alternative would not be as beneficial to water resources. Since the pool of this affected population is relatively small, no significant negative impacts to water resources would occur under the No Action Alternative.</p> <p><u>Provision 9 (Pollinator Conservation):</u> Under the No Action Alternative, continuation of methods to reduce impacts to pollinators would result in indirect benefits to water resources. The majority of benefits</p>	<p>potential for Targeted Signup goals to be achieved. No significant negative impacts to water resources would occur under Alternative 1.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Under Alternative 1, the ability to offer incentives would be expanded from beginning and limited resource farmers/ranchers and Tribes to include socially disadvantaged farmers/ranchers, and higher incentive payments for all would be expected to provide the greatest incentive for enrollment and meeting signup goals. Thus, this alternative would potentially have the most positive impact on water resources; however, given the relatively small population that would qualify for these incentives, the impact of this alternative on water resources would not be substantially different from the other alternatives considered. As these incentives would require PAYGO offset, a reduction in services in other programs may be required. No significant negative impacts to water resources would occur from implementation of Alternative 1.</p> <p><u>Provision 9 (Pollinator Conservation):</u> The development of a new Pollinator Habitat Conservation practice, as well as the modification of existing practices to benefit pollinators under Alternative 1 would</p>	<p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Under Alternative 2, signup incentives for socially-disadvantaged farmers, ranchers and Indian tribes would be more limited than those of Alternative 1, and would also require PAYGO offset for these payments. As such, this alternative would provide less incentive for enrollment which could result in not meeting enrollment goals, and thus would not be as beneficial for water resources as Alternative 1. Yet, since this alternative would expand incentives to socially disadvantaged farmers/ranchers and offer more incentives to the affected population than the No Action Alternative, it would be more beneficial than the latter; however, due to the relatively small population that would qualify, this difference would be negligible. No significant negative impacts to water resources would occur under Alternative 2.</p> <p><u>Provision 9 (Pollinator Conservation):</u> Under Alternative 2 only certain existing CPs would be modified as described for Alternative 1; however, no new pollinator-specific CP would be established. Impacts</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i> (cont'd)</p>	<p>would be a result of a shift to native vegetation, which would reduce sedimentation, and nutrient and agricultural chemical loading into water bodies, as well as the reduction of water usage. While some adverse impacts could occur during site preparation, these potential impacts are minimized through the use of BMPs and adherence to a Conservation Plan. The No Action Alternative would not be as beneficial to water resources as either Alternatives 1 or 2; although no significant negative impacts to water resources would occur.</p>	<p>result in reduced sedimentation, and nutrient and agricultural chemical loading into water bodies, as well as the potential reduction of water usage; however, the creation of a CP that would apportion 1.6 million acres could potentially reduce the amount of acreage available for enrollment into CPs that would create or restore wetlands or indirectly benefit water resources by substantially reducing soil erosion (such as buffer practices). Nearly eight times more off field erosion (and related nutrient and chemical pollution) would be reduced by enrollment in buffer practices over that of field CRP practices. As such, Alternative 1 would be less favorable than Alternative 2 for reducing sedimentation and pollutants. Potential impacts from establishment or modification of the conservation cover can be minimized through the use of BMPs and adherence to a Conservation Plan. No significant negative impacts to water resources would occur from the implementation of Alternative 1.</p>	<p>to water resources under this alternative would be more beneficial than that of the No Action Alternative or Alternative 1. No significant negative impacts to water resources would occur under Alternative 2.</p>
<p>Soil Resources</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> Under the No Action Alternative, the current National and State CPAs and payment incentives, along with CREPs and initiatives implemented since the 2002 Farm Bill would continue to benefit soils; however, without an initiative specifically targeting highly erodible soils, this alternative would</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> Alternative 1 would continue current procedures but add three new national conservation initiatives, one of which would likely provide substantial benefits for soil resources. The Highly Erodible Land Initiative would retire up to 250,000 acres having an Erodibility Index greater than 50</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> Under Alternative 2, current procedures would continue, but wetland initiatives would be reduced. While wetlands can slow and store excess runoff, reducing soil erosion along banks, fewer wetland acres would increase the amount of terrestrial acreage enrolled, which would provide a</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Soil Resources (cont'd)</p>	<p>not be as beneficial as Alternative 1, but would have impacts similar to Alternative 2. No significant negative impacts to soil resources would occur under the No Action Alternative.</p> <p><u>Provision 2 (Maximum Enrollment):</u> The amount of acreage apportioned to General Signups under the No Action Alternative (27.5 million acres) would reduce soil loss by an estimated 12 tons/acre/year, about 333 million tons annually. The acreage for Targeted Signup (4.5 million acres) would have a negligible impact on soil resources if they do not include CPs that specifically address soil erosion. The greater number of acres apportioned to General Signup under the No Action Alternative make it potentially more beneficial than Alternative 1. The No Action Alternative would be more beneficial than Alternative 2 which would reduce total authorized program acreage by 8.0 million</p>	<p>from crop production. While the highly erosive nature of these lands makes them less likely to be intensively cropped, it is estimated that soil erosion would be reduced by approximately 12 million tons. Since the cost of these initiatives would require a PAYGO offset, other program services may be reduced. The other National incentives would establish vegetative cover, thereby reducing soil erosion and increasing soil organic material. Alternative 1 would be more beneficial for soil resources than the other alternatives analyzed. No significant negative impacts to soils would occur from the implementation of Alternative 1.</p> <p><u>Provision 2 (Maximum Enrollment):</u> The 24 million acres apportioned to General Signup and 8.0 million acres to Targeted Signup under Alternative 1 would reduce soil loss of about 290 million tons annually, less than that of the No Action Alternative; however, the additional acres in Continuous Signup could be more beneficial if the amounts enrolled in those CPs with the greatest potential to reduce erosion are not outnumbered substantially by other CPs. This alternative would not be as beneficial for soil resources as the No Action Alternative as General Signup has the greatest potential to reduce soil erosion, yet this difference would not be expected to be substantial. Since Alternative 1 maintains</p>	<p>greater reduction of soil erosion and increase in soil quality. As such, Alternative 2 would be slightly more beneficial than the No Action Alternative, but less beneficial than Alternative 1 which includes a Highly Erodible Land initiative. Implementation of Alternative 2 would not have significant negative impacts on soil resources.</p> <p><u>Provision 2 (Maximum Enrollment):</u> Under Alternative 2, the reduction in the overall maximum amount of acreage authorized for CRP (to 24 million acres) would provide substantially less benefits for soil resources than either of the other alternatives analyzed. The acres allocated for General Signup would reduce soil loss by an estimated 242 million tons annually, more than 25% less than the No Action Alternative and 16% less than Alternative 1. The reduction of authorized enrollment by eight million acres could be significantly negative, especially at the local or State level in areas that may have large amounts of CRP contracts expiring in FY 2010 to FY 2012.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Soil Resources (cont'd)</p>	<p>acres. No significant impacts would occur to soil resources from the No Action alternative.</p> <p><u>Provision 3 (Alfalfa Crop History):</u> Under the No Action Alternative, continued removal of lands planted to alfalfa in rotation with multi-year grasses, legumes, summer fallow, and eligible commodities during 1996-2001 from crop production and subsequent establishment of conservation covers provides for soil erosion reduction. Since alfalfa is a perennial crop, it provides cover year round and does not need tilling except for establishment and rotation, which minimizes the potential for erosion. Enrolling this acreage may provide benefits to soil, but not as much as the enrollment of more intensively cropped lands. The No Action Alternative may be more beneficial than the action alternatives since it allows any rotation interval. While the action alternatives may qualify additional acres for enrollment, this may be offset by the new requirement to meet specific rotation crop histories. No significant negative impacts would occur from continuation of the current crop history requirements</p>	<p>the maximum program acreage at 32 million, it would be more beneficial than Alternative 2, which reduces it to 24 million acres. No significant negative impacts to soils would occur from Alternative 1.</p> <p><u>Provision 3(Alfalfa Crop History):</u> Under Alternative 1, expanding cropping history eligibility to alfalfa planted alone for a minimum of six years in rotation with two years of eligible agricultural commodity and the rotation occurring within 2002 to 2007, could qualify less acreage for enrollment than the No Action Alternative, yet more than Alternative 2. While the change to alfalfa cropping history years and allowing enrollment of alfalfa alone in rotation with an eligible commodity may increase the amount of land eligible for enrollment in CRP under this alternative over that of the No Action Alternative, its stricter rotation schedule may also limit the amount of land eligible for enrollment. Since Alternative 1 requires a shorter rotation period than Alternative 2, it may make more cropland eligible for enrollment; however, due to the limited number of acres available to enroll under the current 32 million acre cap until FY 2012, the number of acres affected in comparison to acres that otherwise meet cropping history requirements of the No Action Alternative or Alternative 2 would be negligible. No significant negative impacts to soils would occur under Alternative 1.</p>	<p><u>Provision 3 (Alfalfa Crop History):</u> Under Alternative 2, expanding the program to include lands planted in alfalfa alone in rotation with other commodity crops in a 12-year interval (10 years alfalfa and 2 years commodity crop), with the rotation occurring within 2002 to 2007, would have impacts to soil resources similar to those of Alternative 1, but would be potentially less beneficial than both of the other alternatives. This is due to an increased rotation interval which may limit the amount of land that would be eligible for enrollment; however, due to the limited number of acres available to enroll under the current 32 million acre program cap until FY 2012, the impact would not be substantial. Therefore, no significant negative impacts to soil resources would occur under Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Soil Resources (cont'd)</p>	<p><u>Provision 4 (County Acreage Limitation Exception):</u> Maintaining the current provisions under the No Action Alternative allows for enrollment of additional county cropland acreage above the 25% cap within authorized program limits in conservation practices that would reduce soil erosion. The No Action Alternative would be less restrictive than the action alternatives as it does not limit additional acreage to Continuous Signup or CREP, and does not impose an additional cap as does Alternative 2, but does not extend authority to counties to grant exceptions. No significant negative impacts to soils would occur under the No Action Alternative.</p> <p><u>Provision 5 (Conservation Plan Management):</u> The goal of MCM is to preserve the health of the vegetative cover. Under the No Action Alternative, MCM is required on contracts executed after 2004 and voluntary for those executed previously. While some MCM activities could have negative impact on soil</p>	<p><u>Provision 4 (County Acreage Limitation Exception):</u> Under Alternative 1, granting the county yes/no authority to allow more CREP or Continuous signup acreage to be enrolled in CRP above the 25% county cropland cap would result in benefits to soil resources similar to those of the No Action Alternative by allowing more land within a county to be enrolled for conservation. This alternative would restrict the acreage exceeding the county cap to CREP or Continuous CRP and thus potentially would allow less land than the No Action Alternative to be enrolled in CRP, but would have no additional acreage cap, so would potentially allow more land in CRP than Alternative 2. The difference among alternatives is minimized by the limited amount of acreage available to enroll under the 32 million acre program cap within FY 2010 to FY 2012. No significant negative impacts to soils would occur under this alternative.</p> <p><u>Provision 5 (Conservation Plan Management):</u> Alternative 1 would have both potentially beneficial and negative impacts to soil resources. It provides greater flexibility to undertake MCM activities only as applicable to the particular lands proposed for enrollment than either the No Action</p>	<p><u>Provision 4 (County Acreage Limitation Exception):</u> While Alternative 2 would allow counties to exercise yes/no authority to exceed the 25% cap on enrollment for CREP and Continuous signups, the additional limit of 50% of the county's cropland would be more restrictive than either the No Action Alternative or Alternative 1, thereby less beneficial for soil resources; however, as with the other alternatives, overall CRP enrollment would still be limited to 32 million acres and the available acres under the cap from FY 2010 to FY 2012. No significant negative impacts to soil resources would occur from the implementation of Alternative 2.</p> <p><u>Provision 5 (Conservation Plan Management):</u> Alternative 2 would include the flexibility in tailoring MCM to local conditions and also would give States the ability to specify MCM by CP as appropriate to their region. This would provide clear guidance to program participants effectively maintaining the</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Soil Resources (cont'd)</p>	<p>by threatening the health and viability of the conservation cover, adherence to the State-specific NRCS Conservation Practice Standards would minimize these impacts, and thereby provide for long-term protection of soil resources. The benefits from the No Action Alternative are similar to those of Alternative 2, yet would be more beneficial than Alternative 1 that would conduct MCM only if included in the Conservation Plan. No significant negative impacts would occur from the continuation of the current provisions under the No Action Alternative.</p> <p><u>Provision 6 (Harvesting CRP):</u> The No Action Alternative would allow continuation of the current forms of authorized harvest, haying, and grazing. Environmental Assessments (EAs) recently undertaken for 13 mid-western and western States found that haying and grazing under both managed and emergency conditions have the potential to significantly negatively impact soils if the amount of vegetative cover removed is excessive and prolonged, or if livestock is allowed to compact the soil. The EAs did not find significant negative impacts to soils from increasing the frequency of these activities (from once every five or 10 years to once every three years), but significant negative impacts were likely if activities occurred during key vegetation growth or dormancy states. Any activity that threatens the long-term viability</p>	<p>Alternative or Alternative 2; however, negative impacts to soil resources could occur if appropriate MCM is not included in the Conservation Plan, an unlikely occurrence. Therefore, this alternative would be potentially less beneficial than either the No Action Alternative or Alternative 2. The potential impacts to soil resources under Alternative 1 would not be significantly negative.</p> <p><u>Provision 6 (Harvesting CRP):</u> The CPs currently authorized for harvesting, haying, and grazing would be authorized for routine grazing and harvest under Alternative 1, although the provisions for prescribed grazing would be expanded. Impacts to soil resources would be similar to those described in the No Action Alternative; potential negative impacts may be minimized using the same methods. The expansion of grazing to control invasive species other than kudzu protects soils by maintaining the health of the conservation cover. If implemented, prescribed grazing for control of invasive plant species would not be authorized for CP23, CP23A, non-grass related CP25, CP27, CP31, or CP39-41. Requiring State-specific NEPA analysis for changes to the PNS, timing, or frequency of harvest or routine grazing</p>	<p>health and vigor of the conservation cover, benefitting soil resources. The benefits of Alternative 2 would therefore be similar to the No Action Alternative and Alternative 1. No significant negative impacts to soil resources would occur from the implementation of Alternative 2.</p> <p><u>Provision 6 (Harvesting CRP):</u> Under Alternative 2, impacts to soil resources would be similar to those of the other alternatives analyzed. The provisions for prescribed grazing would be the same as Alternative 1 and would have similar impacts to soil resources. The accomplishment of State-specific NEPA analysis to allow routine grazing or managed harvest on CPs other than those currently allowed would ensure any potential negative impacts would be addressed at a local level. Alternative 2 would be more beneficial than the No Action Alternative due to the authorization for prescribed grazing to control invasive species other than kudzu, improving the vegetative cover and indirectly soil resources; but has benefits similar to Alternative 1. If the established provisions, standards, guidelines and</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Soil Resources (cont'd)</p>	<p>of the vegetative stand may also negatively soils through increased erosion.</p> <p>Impacts to soils are currently minimized by permitting no more than 50% of a field to be managed hayed, a stocking rate no more than 75% of NRCS established rates, and adherence to NRCS Conservation Practice Standards which stipulate harvest criteria and measures to ensure dispersion of livestock. Properly managed haying and grazing activities are beneficial to ground cover and thereby soils as they mimic the natural disturbance regime which maintains the health and vigor of early successional grassland environments.</p> <p>The No Action Alternative would be potentially less beneficial to soil resources than the action alternatives as it would not allow prescribed grazing of invasive plant species other than kudzu. No significant negative impacts to soil resources would occur from harvesting or grazing if these activities are completed in accordance with existing standards, provisions, and guidelines, and the parameters for conducting these activities are stipulated in the Conservation Plan that would be adjusted to resource conditions on the land prior to conducting these activities.</p>	<p>ensures potential negative impacts are determined and addressed at the local level. No significant negative impacts to soil resources would occur under Alternative 1 if the Conservation Plan is followed and adapted to resource conditions just prior to harvesting or grazing activities, the CPs authorized for harvest or routine grazing do not change, and State-level NEPA is accomplished for any proposed changes to the PNS, timing, and frequency of these activities prior to implementation.</p>	<p>Conservation Plan are followed and adapted to resource conditions just prior to managed harvest or routine grazing (including prescribed grazing), and State-level NEPA analysis would be completed for any proposed changes to the CPs authorized for managed harvest and routine grazing, the PNS, and the timing, duration and frequency of these activities, then no significant negative effects to soil resources would occur under Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Soil Resources (cont'd)</p>	<p><u>Provision 7(NASS Cash Rental Rates):</u> Under the No Action Alternative the existing rental rate payment structure would continue to accrue benefits to soils from FY 2010 to FY 2012, largely in the same locations; Any shift in the geographic distribution of enrollments would most likely be related to expiring acres. Enrollment in CRP in the areas with the most soil erosion and areas with large amounts of tilled agricultural lands would benefit soils the most. General and Targeted Signup goals would continue to be met, similar to Alternative 1. The No Action alternative would be more beneficial to soil resources than Alternative 2, as the latter would use NASS cash rental rates for all signups without additional incentives for Targeted Signup, which may result in not meeting enrollment goals; however, this difference of about 500,000 acres would not be substantial. No significant negative impacts to soils would occur from the continuation of the program under the No Action Alternative.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Continuation of the ability to offer incentives to beginning and limited resource farmers, ranchers and Indian tribes under the No Action Alternative would be beneficial to soil</p>	<p><u>Provision 7 (NASS Cash Rental Rates):</u> Using updated NASS market rental rates based on dryland and irrigated rental rates for General signups executed after December 1, 2009, as well as potentially increasing incentives for Targeted Signups under Alternative 1 may produce some regional shifts in enrollments. Higher payments using these rates may increase enrollment in locations identified as suffering some of the worst soil erosion (Lower Mississippi River basin, Chesapeake Bay watershed, parts of Iowa, Illinois and Missouri, the Atlantic Coastal Plain, and northwestern Texas). Increased enrollment in these areas may benefit soil resources more than the No Action Alternative, yet this difference would not be substantial on a national scale. General and Targeted Signup enrollment goals at current levels would continue to be met, similar to the No Action Alternative. Alternative 1 would be slightly more beneficial to soils than Alternative 2, since additional incentives could be offered. No significant negative impacts to soils would occur from implementation of Alternative 1.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> The increase of cost share rates made available to beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes provides the</p>	<p><u>Provision 7(NASS Cash Rental Rates):</u> As with Alternative 1, regional shifts may occur due to use of NASS cash rental rates for all signups. Since additional incentives would not be offered to ensure current Targeted Signup goals would be met there would be fewer benefits to soil resources than either the No Action Alternative or Alternative 1; however, overall participation in CRP would not decrease substantially, thus no significant negative impacts to soil resources would occur under Alternative 2.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Under Alternative 2, beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes would be eligible for incentives for CPs that</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Soil Resources (cont'd)</p>	<p>resources by taking marginal lands out of crop production and establishing long-term conservation covers; however, both action alternatives expand to offer incentives to socially disadvantaged farmers and ranchers as well, thus both of these alternatives would potentially benefit soil resources more by making it more likely enrollment targets would be met. Since the pool of farmers and ranchers considered socially disadvantaged is relatively small, no significantly negative impacts to soils would occur from the continuation of the program under the No Action Alternative.</p> <p><u>Provision 9 (Pollinator Conservation):</u> Continuing to address pollinator needs with general methods to reduce impacts to pollinators offered by NRCS Conservation Practice Standards and technical guides have little potential to impact soils; however, SAFE projects addressing pollinator needs have the potential to negatively impact soils through installation and management of the conservation cover. These activities would temporarily remove ground cover which could increase soil erosion; however, implementation of BMPs stipulated in the Conservation Plan and adherence to existing NRCS provisions, standards, and guidelines would ensure impacts would be</p>	<p>most incentives for enrollment of the alternatives analyzed and therefore would potentially provide the greatest benefit to soil resources. Since a PAYGO offset would be required, potential reductions to other program services could occur; however, as discussed in the No Action Alternative, due to the small pool of eligible participants, these benefits would not be substantially different from the other alternatives analyzed. Significant negative impacts to soil resources would not occur under Alternative 1.</p> <p><u>Provision 9 (Pollinator Conservation):</u> The development of a new Pollinator Habitat Conservation practice as proposed would enroll up to 1.6 million acres that could potentially reduce the amount of acreage available for enrollment into CPs that would more directly address soil erosion such as contour grass strips, or field buffers. As such, Alternative 1 would be less favorable than Alternative 2 for reducing soil erosion. Potential impacts from establishment or modification of the conservation cover can be minimized through the use of BMPs and adherence to a Conservation Plan. No significant negative impacts to soil resources would</p>	<p>currently are authorized for signup incentive payments. This alternative would also require a PAYGO offset that may require the reduction of other program services. Since this alternative would expand incentives to the affected populations beyond current provisions and it provides increased incentives for enrollment, this alternative would be more beneficial for soils than the No Action Alternative; however, as discussed in the No Action Alternative, due to the relatively small pool of eligible participants, this alternative would not have substantially different impacts to soils from Alternative 1. Significant negative impacts to soil resources would not occur under this alternative.</p> <p><u>Provision 9 (Pollinator Conservation):</u> Under Alternative 2 only certain existing CPs would be modified as described in Alternative 1; however, no new pollinator-specific CP would be established. Impacts to soil resources under this alternative would be similar to those of the No Action Alternative, but would potentially be more beneficial than that of Alternative 1. No significant negative impacts would occur under Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
Soil Resources (cont'd)	minimized, and result in long-term benefits to soils. No significant negative impacts to soil resources would occur under the No Action Alternative.	occur from the implementation of Alternative 1.	
Air Quality <i>Carbon Sequestration</i>	<p><u>Provision 1 (National Conservation Initiatives):</u> Continuation of current procedures to address National, State, and regional conservation initiatives would benefit carbon sequestration through retirement of cropland for conservation purposes. The No Action Alternative would be less beneficial for carbon sequestration than Alternative 1, which would include a new initiative addressing highly erodible soils, but given the limited amount of acreage targeted, the difference would not be substantial. Since wetlands sequester carbon at rates similar to forests, continuation of current procedures would not differ from Alternative 2 that reduces wetland initiatives. No significant negative impacts would occur from the implementation of the No Action Alternative.</p> <p><u>Provision 2 (Maximum Enrollment):</u> Under the No Action Alternative, long-term benefits to carbon sequestration would</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> Alternative 1 would continue current procedures but add Water Resource Protection, Highly Erodible Land, and Regional Restoration of Critical Wildlife Habitat Initiatives targeting a combined 1.5 million acres. This alternative would require PAYGO offset, potentially reducing other programs' services. Of the three new initiatives, the Highly Erodible Land Initiative would likely have the greatest impact on carbon sequestration by removing land that has a very low or negative rate of sequestration from crop production and establishing permanent vegetative covers. This could potentially sequester up to four million tons ac/yr of soil organic carbon; however, the amount of land that would be authorized for enrollment would be relatively small; therefore, the benefits realized would not be substantially different from the other alternatives analyzed. No significant negative impacts to carbon sequestration would occur under Alternative 1.</p> <p><u>Provision 2 (Maximum Enrollment):</u> Under Alternative 1 the amount of acreage apportioned for General Signup would be</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> There would be no changes to existing national CPAs, CREPS, or national conservation initiatives under Alternative 2; however, wetland initiatives would be reduced. Wetlands sequester carbon at rates comparable to forests but somewhat more than grasslands, therefore, this alternative would not substantially differ from the other alternatives considered. No significantly negative impacts to carbon sequestration would occur under this alternative.</p> <p><u>Provision 2 (Maximum Enrollment):</u> The reduction of eight million acres authorized for enrollment under Alternative</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Air Quality <i>Carbon Sequestration</i> (cont'd)</p>	<p>occur from maintaining the maximum enrollment acreage authorized by the 2008 Farm Bill, sequestering an estimated 23 million tons of carbon annually. The Targeted Signups for CREP, FWP, SAFE and Initiatives are less likely to provide as much potential for carbon sequestration as Continuous Signup CPs addressing soil erosion. Similarly, General Signup practices which retire whole fields from crop production also provide a greater carbon sequestration potential. The No Action Alternative would be more beneficial for carbon sequestration than Alternative 1 with fewer General Signup acres or Alternative 2 with less acreage authorized for enrollment. No significant negative impacts would occur under the No Action Alternative.</p> <p><u>Provision 3 (Alfalfa Crop History):</u> Under the No Action Alternative, continued removal of lands planted to alfalfa in rotation with multi-year grasses, legumes, summer fallow, and eligible commodities during 1996-2001 from crop production and subsequent establishment of conservation covers provides for increased carbon sequestration. Since alfalfa is a perennial crop, it provides cover year round and does not need tilling except for establishment and rotation, which reduces the potential for soil carbon loss. Enrolling this acreage may provide benefits to carbon sequestration, but not as much as the enrollment of more</p>	<p>reduced to 24 million acres, with the balance of eight million acres allocated to Targeted Signup. The reduction in acreage available for General Signup would be less beneficial for carbon sequestration than that of the No Action Alternative. This difference would be minor since the overall number of program acres would remain at 32 million. Alternative 1 would provide substantially more benefits for air quality than Alternative 2 that has reduced program enrollment targets. No significant negative impacts would occur under Alternative 1.</p> <p><u>Provision 3 (Alfalfa Crop History):</u> Under Alternative 1, expanding cropping history eligibility to alfalfa planted alone for a minimum of six years in rotation with two years of eligible agricultural commodity and the rotation occurring within 2002 to 2007, could qualify less acreage for enrollment than the No Action Alternative, yet more than Alternative 2. While the change to alfalfa cropping history years and allowing enrollment of alfalfa alone in rotation with an eligible commodity may increase the amount of land eligible for enrollment in CRP under this alternative over that of the No Action Alternative, and would thus be</p>	<p>2 equates to a decreased carbon sequestration capacity of approximately 58 million tons annually. Significant negative impacts on soil carbon sequestration rates at the local and State level from the implementation of Alternative 2 could occur if a large amount of acreage leaves the program in combination with contract expirations scheduled from FY 2010 to FY 2012.</p> <p><u>Provision 3 (Alfalfa Crop History):</u> Under Alternative 2, expanding the program to include lands planted in alfalfa alone in rotation with other commodity crops in a 12-year interval (10 years alfalfa and 2 years commodity crop), with the rotation occurring within 2002 to 2007, would have impacts to carbon sequestration similar to those of Alternative 1, but would be potentially less beneficial than both of the other alternatives; this is due to an increased rotation interval which may limit the amount of land that would be eligible for enrollment; however, due to the limited number of acres available to enroll under the current 32</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Air Quality <i>Carbon Sequestration</i> (cont'd)</p>	<p>intensively cropped lands. The No Action Alternative may be more beneficial than the action alternatives since it allows any rotation interval. While the action alternatives may qualify additional acres for enrollment, this may be offset by the new requirement to meet specific rotation crop histories. No significant negative impacts to carbon sequestration would occur from continuation of the current crop history requirements</p> <p><u>Provision 4 (County Acreage Limitation Exception):</u> Maintaining the current provisions under the No Action Alternative allows for enrollment of additional county cropland acreage above the 25% cap within authorized program limits in conservation practices that would increase carbon sequestration. The No Action Alternative would be less restrictive than the action alternatives as it does not limit additional acreage to Continuous Signup or CREP, and would not impose an additional cap as does Alternative 2, but would not extend authority to counties to grant exceptions. No significant negative impacts to carbon sequestration would occur under the No</p>	<p>more beneficial for carbon sequestration, its stricter rotation schedule may also limit the amount of land eligible for enrollment. Since Alternative 1 would require a shorter rotation period than Alternative 2, it may make more cropland eligible for enrollment; however, due to the limited number of acres available to enroll under the current 32 million acre cap until FY 2012, the number of acres affected in comparison to acres that otherwise meet cropping history requirements of the No Action Alternative or Alternative 2 would be negligible. No significant negative impacts to carbon sequestration would occur under Alternative 1.</p> <p><u>Provision 4 (County Acreage Limitation Exception):</u> Under Alternative 1, granting the county yes/no authority to allow more CREP or Continuous signup acreage to be enrolled in CRP above the 25% county cropland cap would result in benefits to carbon sequestration similar to those of the No Action Alternative by allowing more land within a county to be enrolled for conservation. This alternative would restrict the acreage exceeding the county cap to CREP or Continuous CRP and thus potentially would allow less land than the No Action Alternative to be enrolled in CRP, but would have no additional acreage cap, so would potentially allow more land in CRP</p>	<p>million acre program cap until FY 2012, the impact would not be substantial. Therefore, no significant negative impacts to carbon sequestration would occur under Alternative 2.</p> <p><u>Provision 4 (County Acreage Limitation Exception):</u> While Alternative 2 would allow counties to exercise yes/no authority to exceed the 25% cap on enrollment for CREP and Continuous signups, the additional limit of 50% of the county's cropland would be more restrictive than either the No Action Alternative or Alternative 1, thereby less beneficial for carbon sequestration; however, as with the other alternatives, overall CRP enrollment would still be limited to 32 million acres and the available acres under the cap from FY 2010 to FY 2012. No significant negative impacts to carbon sequestration would occur from the implementation of Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Air Quality <i>Carbon Sequestration</i> (cont'd)</p>	<p>Action Alternative.</p> <p><u>Provision 5 (Conservation Plan Management):</u> The goal of MCM is to preserve the health of the vegetative cover. Under the No Action Alternative, MCM is required on contracts executed after 2004 and voluntary for those executed previously. While some MCM activities could have negative impact on carbon sequestration by threatening the health and viability of the conservation cover, adherence to the State-specific NRCS Conservation Practice Standards would minimize these impacts, and thereby provide for long-term protection of vegetation and soil resources, enhancing carbon sequestration. The benefits from the No Action Alternative are similar to those of Alternative 2, yet would be more beneficial than Alternative 1 which would conduct MCM only if included in the Conservation Plan. No significant negative impacts would occur from the continuation of the current provisions under the No Action Alternative.</p> <p><u>Provision 6 (Harvesting CRP):</u> The No Action Alternative would allow</p>	<p>than Alternative 2. The difference among alternatives is minimized by the limited amount of acreage available to enroll under the 32 million acre program cap during FY 2010 to FY 2012. No significant negative impacts to carbon sequestration would occur under this alternative.</p> <p><u>Provision 5 (Conservation Plan Management):</u> Alternative 1 would have both potentially beneficial and negative impacts to vegetation and soil resources, and thereby, carbon sequestration. It provides greater flexibility to undertake MCM activities only as applicable to the particular lands proposed for enrollment than either the No Action Alternative or Alternative 2; however, negative impacts to vegetation, soil, and consequently carbon sequestration could occur if appropriate MCM is not included in the Conservation Plan, an unlikely occurrence. Therefore, this alternative would be potentially less beneficial than either the No Action Alternative or Alternative 2. The potential impacts to carbon sequestration under Alternative 1 would not be significantly negative.</p> <p><u>Provision 6 (Harvesting CRP):</u> The CPs currently authorized for harvesting,</p>	<p><u>Provision 5 (Conservation Plan Management):</u> Alternative 2 would include the flexibility in tailoring MCM to local conditions and also would give States the ability to specify MCM by CP as appropriate to their region. This would provide clear guidance to program participants effectively maintaining the health and vigor of the conservation cover, benefitting soil resources, and thereby carbon sequestration. The benefits of Alternative 2 would therefore be similar to the No Action Alternative and Alternative 1. No significant negative impacts to carbon sequestration would occur from the implementation of Alternative 2.</p> <p><u>Provision 6 (Harvesting CRP):</u> Under Alternative 2, impacts to soil</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Air Quality <i>Carbon Sequestration</i> (cont'd)</p>	<p>continuation of the current forms of authorized harvest, haying, and grazing. Environmental Assessments (EAs) recently undertaken for 13 mid-western and western States found that haying and grazing under both managed and emergency conditions have the potential to significantly negatively impact vegetation, soils, and thereby carbon sequestration if the amount of vegetative cover removed is excessive and prolonged, increasing soil erosion, or if livestock is allowed to compact the soil. The EAs did not find significant negative impacts to carbon sequestration from increasing managed haying and grazing frequency from once every five or 10 years to once every three years, but significant negative impacts were likely if activities occurred during key vegetation growth or dormancy states. Any activity that threatens the long-term viability of the vegetative stand may also negatively carbon sequestration through vegetative loss and increased soil erosion.</p> <p>Impacts to carbon sequestration are currently minimized by permitting no more than 50% of a field to be managed hayed, a stocking rate no more than 75% of NRCS established rates, and adherence to NRCS Conservation Practice Standards which stipulate harvest criteria and measures to ensure dispersion of livestock. Properly managed haying and grazing activities are beneficial to ground cover and thereby</p>	<p>haying, and grazing would be authorized for routine grazing and harvest under Alternative 1, although the provisions for prescribed grazing would be expanded. Impacts to carbon sequestration would be similar to those described for the No Action Alternative; potential negative impacts may be minimized using the same methods. The expansion of grazing to control invasive species other than kudzu protects soils and carbon sequestration by maintaining the health of the conservation cover. If implemented, prescribed grazing for control of invasive plant species would not be authorized for CP23, CP23A, non-grass related CP25, CP27, CP31, or CP39-41. Requiring State-specific NEPA analysis for changes to the PNS, timing, or frequency of harvest or routine grazing ensures potential negative impacts would be determined and addressed at the local level. Alternative 1 would be more beneficial than the No Action Alternative, yet has similar benefits as Alternative 2. No significant negative impacts to carbon sequestration resources would occur under Alternative 1 if the Conservation Plan is followed and adapted to resource conditions just prior to harvesting or grazing activities, the CPs authorized for harvest or routine grazing do not change, and State-level NEPA is accomplished for any proposed changes to the PNS, timing, and frequency of these activities prior to implementation.</p>	<p>resources would be similar to those of the other alternatives analyzed. The provisions for prescribed grazing would be the same as Alternative 1 and would have similar impacts to carbon sequestration. The accomplishment of State-specific NEPA analysis to allow routine grazing or managed harvest on CPs other than those currently allowed would ensure any potential negative impacts would be addressed at a local level. Alternative 2 would be more beneficial than the No Action Alternative due to the authorization for prescribed grazing to control invasive species other than kudzu, improving the vegetative cover and carbon sequestration; but has benefits similar to Alternative 1. If the established provisions, standards, guidelines and Conservation Plan are followed and adapted to resource conditions just prior to managed harvest or routine grazing (including prescribed grazing), and State-level NEPA analysis would be completed for any proposed changes to the CPs authorized for managed harvest and routine grazing, the PNS, and the timing, duration and frequency of these activities, then no significant negative effects to carbon sequestration would occur under Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Air Quality <i>Carbon Sequestration</i> (cont'd)</p>	<p>carbon sequestration as they mimic the natural disturbance regime which maintains the health and vigor of early successional grassland environments.</p> <p>The No Action Alternative would be potentially less beneficial to carbon sequestration than the action alternatives as it would not allow prescribed grazing of invasive plant species other than kudzu. No significant negative impacts to carbon sequestration would occur from harvesting or grazing if these activities are completed in accordance with existing standards, provisions, and guidelines, and the parameters for conducting these activities are stipulated in the Conservation Plan that would be adjusted to resource conditions on the land prior to conducting these activities.</p> <p><u>Provision 7 (NASS Cash Rental Rates):</u> Under the No Action Alternative the existing rental rate payment structure would continue to accrue benefits to soils from FY 2010 to FY 2012, largely in the same locations; Any shift in the geographic distribution of enrollments would most likely be related to expiring acres. Enrollment in CRP in the areas with the most soil erosion and areas with large amounts of tilled agricultural lands would benefit carbon sequestration the most. General and Targeted Signup goals would continue to be met, similar to Alternative 1. The No Action alternative would be more beneficial to soil</p>	<p><u>Provision 7(NASS Cash Rental Rates):</u> Using updated NASS market rental rates based on dryland and irrigated rental rates for General Signups executed after December 1, 2009, as well as potentially increasing incentives for Targeted Signups under Alternative 1 may produce some regional shifts in enrollments. Higher payments using these rates may increase enrollment in locations identified as suffering some of the worst soil erosion (Lower Mississippi River basin, Chesapeake Bay watershed, parts of Iowa, Illinois and Missouri, the Atlantic Coastal Plain, and northwestern Texas). Increased</p>	<p><u>Provision (NASS Cash Rental Rates)7:</u> As with Alternative 1, regional shifts may occur due to use of NASS cash rental rates for all signups. Since additional incentives would not be offered to ensure current Targeted Signup goals would be met there would be fewer benefits to carbon sequestration than either the No Action Alternative or Alternative 1; however, overall participation in CRP would not decrease substantially, thus no significant negative impacts to carbon sequestration would occur under Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Air Quality <i>Carbon Sequestration</i> (cont'd)</p>	<p>resources than Alternative 2, as the latter would use NASS cash rental rates for all signups without additional incentives for Targeted Signup, which may result in not meeting enrollment goals; however, this difference of about 500,000 acres would not be substantial. No significant negative impacts to carbon sequestration would occur from the continuation of the program under the No Action Alternative.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Continuation of providing incentives for beginning and limited resource farmers, ranchers and Indian Tribes under the No Action Alternative would be beneficial to carbon sequestration resources by taking marginal lands out of crop production and establishing long-term conservation covers. The No Action Alternative would be potentially less beneficial than the action alternatives since they expand the program to socially disadvantaged farmers and ranchers; however, as the pool of farmers and ranchers considered socially disadvantaged is relatively small, this impact would not be extensive. No significant negative impacts to carbon sequestration would occur from continuation of the program under the No Action Alternative.</p>	<p>enrollment in these areas may benefit carbon sequestration more than the No Action Alternative, yet this difference would not be substantial on a national scale. General and Targeted Signup enrollment goals at current levels would continue to be met, similar to the No Action Alternative. Alternative 1 would be slightly more beneficial to carbon sequestration than Alternative 2, since additional incentives could be offered. No significant negative impacts to carbon sequestration would occur from implementation of Alternative 1.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> The expansion to include socially disadvantaged farmers/ranchers and increase of cost share rates made available to beginning, limited resource farmers/ranchers and Indian Tribes provides the most incentives for enrollment of the alternatives analyzed and therefore would potentially provide the greatest benefit to air quality; however, since a PAYGO offset would be required, potential reductions to other program services could occur. Alternative 1 has the greatest incentive for the affected population to participate, thus increasing the potential for enrollment goals to be met; however, as discussed in the No Action Alternative, due to the small pool of eligible participants, these benefits would not be substantially</p>	<p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Under Alternative 2, expanding signup incentives, most likely for those CPs currently authorized for signup incentive payments, to socially-disadvantaged farmers, ranchers and Indian Tribes would be more limited and less beneficial than Alternative 1; however, since this would be an expansion from the current provisions, it would increase incentive for enrollment compared to the No Action Alternative, thus benefitting carbon sequestration and air quality. This alternative would require a PAYGO offset that may impose reductions of other program services. As discussed for the No Action Alternative, due to the relatively small pool of eligible participants, negative impacts to air quality would not be significant under Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Air Quality <i>Carbon Sequestration</i> (cont'd)</p>	<p><u>Provision 9 (Pollinator Conservation):</u> Continuing to address pollinator needs with general methods to reduce impacts to pollinators offered by NRCS Conservation Practice Standards and technical guides have little potential to impact carbon sequestration; however, SAFE projects addressing pollinator needs have the potential to negatively impact soils and thereby carbon sequestration through installation and management of the conservation cover. These activities would temporarily remove ground cover which could increase soil erosion; however, implementation of BMPs stipulated in the Conservation Plan and adherence to existing NRCS provisions, standards, and guidelines would ensure impacts would be minimized, and result in long-term benefits to carbon sequestration. No significant negative impacts to carbon sequestration or air quality would occur under the No Action Alternative.</p>	<p>different from the other alternatives analyzed. Significant negative impacts to air quality would not occur under Alternative 1.</p> <p><u>Provision 9 (Pollinator Conservation):</u> The development of a new Pollinator Habitat Conservation practice as proposed would enroll up to 1.6 million acres that could potentially reduce the amount of acreage available for enrollment into CPs that would more directly address soil erosion and hence carbon sequestration such as whole field practices under General Signup, or contour grass strips. As such, Alternative 1 would be less favorable than Alternative 2 for reducing soil erosion and increasing carbon sequestration. Potential impacts from establishment or modification of the conservation cover can be minimized through the use of BMPs and adherence to a Conservation Plan. No significant negative impacts to carbon sequestration would occur from implementation of Alternative 1.</p>	<p><u>Provision 9 (Pollinator Conservation):</u> Under Alternative 2 only certain existing CPs would be modified as described for Alternative 1; however, no new pollinator-specific CP would be established. Impacts to carbon sequestration under this alternative would be similar to those of the No Action Alternative, but would potentially be more beneficial than that of Alternative 1. No significant negative impacts would occur under Alternative 2.</p>
<p>Socioeconomics</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> Under the No Action Alternative, National, State, and regional conservation initiatives would remain a small part of CRP enrollment. As of October 2009, initiative acres comprised approximately 2.9% of current CRP enrollment, and the enrolled</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> The implementation of three targeted national conservation initiatives under Alternative 1 would not include a monetary cap, but would require a PAYGO offset that may reduce other program services. Based on the average rental rate (\$83.93/acre),</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> Under Alternative 2, socioeconomic impacts would be similar to those of the No Action Alternative, costing approximately \$41.7 million per year; however, reducing wetland restoration initiative acreage (up to 0.75 million acres) would limit future rental</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Socioeconomics (cont'd)</p>	<p>acres within the initiatives accounted for 38.3% of the acreage goals. Average rental rates are estimated at \$83.93 per acre. National conservation needs would be addressed through national CPAs and existing initiatives and State needs by State CPA and CREP enrollments. In FY 2009 these initiatives accounted for 2.1% of the CRP budget (\$41.7 million). No significant negative impacts to socioeconomic conditions would occur under the No Action Alternative.</p> <p><u>Provision 2 (Maximum Enrollment):</u> With acreage capped at 32 million acres under the No Action Alternative, more competition for enrollment is anticipated. Increased competition for General Signup contracts, especially near the margin of acceptance, may encourage landowners to offer lower rental rates. Government costs would be reduced, but so too would benefits to participants. Fewer Targeted Signup acreage goals would have smaller economic impacts because acreage totals are smaller and tend to have less influence on markets and local economies. Program implementation costs under the No Action Alternative may be lower than Alternative 1 that proposes more Targeted Signup, yet more than Alternative 2, which reduces</p>	<p>the new initiatives would cost an estimated \$42.0 million more per year than the No Action Alternative during FY 2010 to FY 2012. This would equate to approximately 0.03% of the FY 2009 USDA budget or 2.1% of the CRP budget. If rental rates are as high as the highest average rental rate (\$97.04/ acre for CP23) then costs would increase to approximately \$48.5 million per year. Alternative 1 would cost more than the other alternatives considered, assuming it would be implemented in addition to existing initiatives. No significant negative impacts to socioeconomic conditions would occur under Alternative 1.</p> <p><u>Provision 2 (Maximum Enrollment):</u> The apportionment of eight million acres to Targeted Signup under this alternative would tend to increase government costs due to the higher costs associated with Targeted Signups and incentive payments that would increase from \$25.2 million in the FY 2009 budget to \$116 million per year between FY 2010 and FY 2012. The reduction in General Signup acreage would likely increase competition for enrollment, thus increasing EBI scores and decreasing rental rates. Benefits to General Signup participants would decline in comparison to the No Action Alternative as offers are anticipated to be lower; however, government expenditures would tend to be greater than the other alternatives. Under</p>	<p>payments for initiatives, yet this change would be minor and not significantly negative since the affected amount of acres would be small and could still be enrolled in other practices. Likewise, due to the wetland restoration initiative reduction, a minor geographic redistribution of CRP enrollment could occur; yet, only a maximum 0.75 million acres are currently authorized for enrollment, which is not substantially different from the No Action Alternative. No significant negative socioeconomic impacts would occur under Alternative 2.</p> <p><u>Provision 2 (Maximum Enrollment):</u> Decreasing CRP acreage to 24 million acres (20 million for General Signup and four million for Targeted Signup) under Alternative 2 would limit additional signups considerably. With General Signup acreage already taken, only those offers with the highest EBI scores are likely to be accepted. Impacts from Targeted Signups are similar to those of the No Action Alternative. The reduction of General Signup acreage could reduce annual rental payments by approximately \$301.2 million for October 2009 levels. Similarly, the reduction of Targeted Signup acreage to four million acres could reduce annual rental payments approximately \$41.1 million from October 2009 levels. Effects to</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Socioeconomics (cont'd)</p>	<p>authorized CRP acreage by eight million acres. No significant negative effects to housing, employment, demographic trends, and business sectors would occur under the No Action Alternative.</p> <p><u>Provision 3 (Alfalfa Crop History):</u> Impacts from maintaining the cropping history eligibility for alfalfa under the No Action Alternative would be relatively minor, given the amount of acres of alfalfa that would be eligible for enrollment. It is estimated that only 3.7 million acres of alfalfa acreage would be eligible (14.4% of 2001 alfalfa acreage), about the same amount of alfalfa removed annually from production for crop rotation, fallow, or removal from agricultural practices. The acres removed from production would likely be those that consistently produce yields that have negative returns for producers or those being transitioned out of active</p>	<p>Alternative 1 enrolled acreage would be distributed differently across geography and individual landowners, but not substantially different from the other alternatives analyzed. No significant negative impacts to socioeconomic conditions would occur from the implementation of Alternative 1.</p> <p><u>Provision 3(Alfalfa Crop History):</u> Under Alternative 1, expanding cropping history eligibility to alfalfa grown for six years in an eight-year rotation would likely have similar impacts to socioeconomic conditions as the No Action Alternative, yet could increase the amount of acres; however, the amount of additional acreage is estimated to be relatively minor. The amount of acres harvested for alfalfa has been relatively stable during the period from 1996 to 2008; as such the eligible amount of acreage to be enrolled under the 32 million acre CRP limit would be relatively small. The minor increase in eligible acres gained under this alternative from allowing</p>	<p>Targeted Signups would be similar to the No Action Alternative. Compared to the No Action Alternative and Alternative 1, there would also be a much smaller SIP expenditure for new Targeted Signups under Alternative 2. Under Alternative 2, there may be some localized loss of recreational opportunities and associated services, yet these losses would generally be offset by gains in agricultural-related economic opportunities. Implementation costs would likely be lower than either the No Action Alternative or Alternative 1. No significant negative impacts to housing, employment, demographic trends, and business sectors would occur under Alternative 2.</p> <p><u>Provision 3 (Alfalfa Crop History):</u> Expanding the cropping history for alfalfa grown for 10 years in a 12-year rotation under Alternative 2 is anticipated to make a similar or less amount of acres eligible than Alternative 1 given the stand interval, amount of acres rotated out of alfalfa during the applicable years. Alternative 2 would be expected to have similar effects as the other alternatives analyzed since the amount of acres harvested for alfalfa have been relatively stable and the eligible amount of acreage to be enrolled under the 32 million acre CRP limit would be relatively small. No significant negative socioeconomic impacts would occur from the implementation of this</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Socioeconomics (cont'd)</p>	<p>production. Given the current acreage cap for CRP, it's anticipated that only those acres with the highest EBI scores would be accepted, limiting the amount of alfalfa acreage enrolled into CRP. The No Action Alternative would create small benefits for a small population of operators, yet small reductions in agricultural services (e.g., fertilizers, pest control, and seed source) are also expected. No significant negative impacts under the No Action Alternative would occur.</p> <p><u>Provision 4 (County Acreage Limitation Exception):</u> Currently there are 24 counties throughout the entire U.S. that exceed the 25% cap on county cropland for enrollment in CRP and WRP for a total of 0.4 million excepted acres (1.2% of current CRP enrollment). Presently exceptions are granted on a case-by-case basis after determining no local negative socioeconomic impacts would occur. This indicates that there is the potential for minor effects to socioeconomic conditions. When compared to the action alternatives, the No Action Alternative would allow the greatest amount of acres to exceed the county limit because it allows for either General or Continuous Signups to be exempt from the limitation with no additional cap; however, granting counties yes/no authority would not be extended under this alternative. There would be no significant</p>	<p>alfalfa alone in rotation with an eligible commodity could be offset by a stricter rotation schedule. As such, impacts would be similar to the other alternatives analyzed. No significant negative socioeconomic impacts would occur under Alternative 1.</p> <p><u>Provision 4 (County Acreage Limitation Exception):</u> Allowing county governments to exercise yes/no authority to exceed the 25% acreage limitation for additional CREP or Continuous Signup enrollments would only be expected to have minor effects on national socioeconomic conditions. The overall 32 million acre program limit cannot be exceeded, and only about 14.5 million acres would be available for enrollment from FY 2010 to FY 2012. Likewise, the amount over which the limitation can be exceeded would be highly dependent on the CPs and national, State, and regional initiatives in place at the time. Historically very few counties have exceeded the 25% limit, with minimal acres; which would likely not change under Alternative 1. Impacts on the local level would be variable, and are dependent upon the amount of acreage to</p>	<p>alternative.</p> <p><u>Provision 4 (County Acreage Limitation Exception):</u> Under Alternative 2, giving county governments yes/no authority to exceed the 25% county acreage limit for additional CREP and Continuous Signup enrollments to a maximum of 50% of county cropland would be expected to create minor socioeconomic impacts. Given the 50% maximum county enrollment limit under Alternative 2, fewer acres would potentially be excepted, thus potential negative socioeconomic impacts would be less than the other alternatives analyzed; however, given the limited amount of acreage available to enroll until FY 2012, the differences would be negligible. No significantly negative socioeconomic impacts would occur from implementation of Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Socioeconomics (cont'd)</p>	<p>negative socioeconomic impacts under the No Action Alternative.</p> <p><u>Provision 5 (Conservation Plan Management):</u> Under the No Action Alternative, the requirement for MCM on all contracts executed after FY 2004 (and voluntary for contracts accepted before then) is anticipated to generate minor, localized benefits to both participants and agricultural services (e.g., pest control, custom activities, etc.). The average cost share value for MCM is approximately \$10 per acre; an estimated \$219.6 million would be paid if all enrollments from 2004 to present required MCM within the same year; however, MCM costs are staggered by enrollment year and by contract length. Of the alternatives analyzed, the No Action Alternative would have the greatest costs for both FSA and program participants, but the burden to participants is lessened by cost share and technical support. No significant</p>	<p>exceed the county limitation, yet the requirement for any waiver not to adversely impact the local economy would still apply. Since there would be no additional per county limit, Alternative 1 would potentially allow more acreage to be waived than Alternative 2, but fewer acres than the No Action Alternative that does not restrict exceptions to signup type. There would be no significant negative socioeconomic impacts from implementation of Alternative 1.</p> <p><u>Provision 5 (Conservation Plan Management):</u> Alternative 1 provides greater flexibility for determining the level and scope of the MCM activities by requiring this management only if stipulated in the Conservation Plan. Implementation of Alternative 1 may reduce the costs of management for some participants, yet it places greater risk on the participant for success of the conservation cover and may also reduce non-monetary benefits if conservation covers were to fail. This alternative would not reduce costs to the FSA until FY 2014 or later when newly enrolled acreage becomes eligible for MCM; however, it is anticipated that this alternative would have lower costs for both FSA and program participants than either the No Action Alternative or Alternative 2. Alternative 1 provides fewer benefits for agricultural services businesses than the No</p>	<p><u>Provision 5 (Conservation Plan Management):</u> Alternative 2 includes the flexibility in tailoring MCM to local conditions and also gives States the ability to specify MCM by CP as appropriate to their region. Some minor decreases in benefits to agricultural services in comparison to the No Action Alternative would likely occur. Similarly, Alternative 2 would have higher costs for both FSA and program participants than Alternative 1, but the burden borne by participants would be offset by cost share. No significant negative impacts to socioeconomic conditions would occur from implementation of this alternative.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Socioeconomics (cont'd)</p>	<p>negative socioeconomic impacts would occur from continuation of the current procedure under the No Action Alternative.</p> <p><u>Provision 6 (Harvesting CRP):</u> Continuation of current harvest, haying and grazing activities under the No Action Alternative would likely create only minor changes to hay production and grazing on CRP acres. Current production practices are fairly small when compared to total production values within the combined counties containing those CRP acres and total production at the State level. The effects are likely to remain minor due to: 1) the economic value of haying or grazing may not be worth the 25% reduction in annual rental rate payments and/or the transactions costs for obtaining permission to hay or graze may be too high; 2) generalized market effects on the hay market would likely be very small; and 3) broader economic effects would approach zero, since operators would only participate in haying or grazing if production value is worth at least the 25 percent payment reduction at the point where the marginal costs and benefits are equal, although negative impacts could occur on a local level in less diversified areas. Under the No Action Alternative, minor socioeconomic benefits for operators are likely, which in turn, is not likely to create adverse effects for operators that do not or cannot utilize</p>	<p>Action Alternative, but not at a substantially different level. No significant negative socioeconomic impacts would occur under this alternative.</p> <p><u>Provision 6(Harvesting CRP):</u> Implementation of Alternative 1 would result in minor socioeconomic effects similar to the No Action Alternative. If implemented, allowing prescribed grazing for the control of invasive species other than kudzu (except for CPs 23, 23A, non-grass related CP25, CP27, CP31, and CP39 – 41) would generate substantial societal benefits as invasive species cause the loss of hundreds of million dollars a year in national agricultural production. Moreover, requiring State-level NEPA analysis for any changes to the PNS, timing, and frequency of harvesting and routine grazing ensures potential negative socioeconomic impacts are determined and addressed on a local scale. As such, the overall socioeconomic effects would be similar to the No Action Alternative, but may be somewhat greater due to the potential for the biological control of invasive species. Alternatives 1 and 2 would be anticipated to create similar benefits; however, changes to CPs under Alternative 2, following further NEPA analysis, may create more localized benefits at the State level than Alternative 1. No significant negative socioeconomic impacts would occur under this alternative.</p>	<p><u>Provision 6(Harvesting CRP):</u> Alternative 2 would result in greater socioeconomic effects than either the No Action Alternative or Alternative 1 due to the potential for control of invasive species other than kudzu, and allowing harvesting or routine and prescribed grazing to occur on any CP provided State-level NEPA analysis is accomplished; however, these effects are anticipated to be localized at the State level. As with Alternative 1, requiring State-level NEPA analysis for other changes to the PNS, timing, duration, and frequency of harvesting and routine grazing ensures potential negative socioeconomic impacts would be determined and addressed on a local scale.</p> <p>Alternative 2 could be more beneficial at the local level than either the No Action Alternative or Alternative 1. No significant negative socioeconomic impacts would occur under Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Socioeconomics (cont'd)</p>	<p>CRP for harvesting activities. The No Action Alternative would be less beneficial than the action alternatives because it does not allow prescribed grazing for the control of invasive species other than kudzu. No significant negative impacts would occur under the No Action Alternative.</p> <p><u>Provision 7 (NASS Cash Rental Rates):</u> Continuation of the current land value survey (LVS) rental payment structure would still provide enough incentives to enroll in CRP so that enrollment goals would be met. Recently lowered maintenance payments would slightly reduce compensation to participants and may reduce program participation. The distribution of new enrollments until FY 2012 would depend on the target acreage level, the amount of acreage in current contracts that would expire, and locations of expiring contracts. From FY 2010 to FY 2012 approximately 11.8 million acres are set to expire from the program, nearly 25% of which would be in Kansas and Texas. While there would be a potential for small local impacts due to shifting of enrolled acres, the national impact would be minimal. Current CRP rental payment rates would be higher than NASS cash rental rates in the majority of counties in the continental U.S. Potential negative socioeconomic impacts under the No Action Alternative would be less than the action alternatives since use of NASS rental</p>	<p><u>Provision 7(NASS Cash Rental Rates):</u> The use of updated NASS market dryland and irrigated rental rates with soil productivity adjustments to calculate annual rental payments for all new General Signup contracts executed after December 1, 2009 under Alternative 1 would cause a reduction in maximum rental rates in some areas while increasing rates in others. Use of NASS rates would be lower than LVS rates in the majority of counties. In areas where NASS rental rates are below LVS rental rates there would be a general decline in the number of offers, while in areas in which NASS rental rates are higher, an increased number of offers would be likely. These changes would cause a shift in the pattern of new enrollments, although CRP enrollment goals at current levels would still likely be met. The anticipated shift in geographic distribution would be small in relation to the size of local and national economic activities. While some locations losing CRP enrollments would experience negative impacts to local business sectors that cater to outdoor recreation activities,</p>	<p><u>Provision 7(NASS Cash Rental Rates):</u> Under Alternative 2, annual rental payments would be calculated utilizing NASS rates for all new signups after December 1, 2009, but no additional incentives for Targeted Signups would be offered. Although NASS rental rates would be lower than current CRP rental payment rates in the majority of counties, modeling indicates overall participation in General or Targeted Signups would not decrease substantially, and General Signup enrollment goals at current levels would be met; however, the current Targeted Signup enrollment goal of 4.5 million acres would fall short 0.5 million acres, but this would not be a significant negative impact given the limited amount of affected acreage. Enrollment under this alternative would geographically shift to areas where NASS payments would be higher than current CRP rental payments. This alternative therefore would be potentially less beneficial than the other alternatives analyzed, but would not have significantly negative socioeconomic impacts.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Socioeconomics (cont'd)</p>	<p>rates that would be lower than current rates in the majority of counties would induce more pronounced geographic shifts in enrollments to those areas where LVS rates are higher. No significant negative impacts would occur under the No Action Alternative.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> The incentives for beginning and limited resource farmers, ranchers, and Indian Tribes that would be paid under the No Action Alternative would have no significant positive or negative socioeconomic impacts, but would not extend benefits to socially disadvantaged farmers/ranchers. The No Action Alternative would provide fewer benefits than either of the action alternatives.</p>	<p>agricultural services businesses would experience positive impacts from returning lands to agricultural production, maintaining local socioeconomic conditions. Increasing incentives for Targeted Signups by 20% would elicit sufficient participation to reach the current enrollment goals. Modest costs and benefits associated with a redistribution of CRP acreage would be larger than for the No Action Alternative but less than that experienced under Alternative 2. No significant negative socioeconomic impacts would occur from implementation of Alternative 1.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Under Alternative 1, the expansion of cost share benefits to socially disadvantaged farmers and ranchers over that of the No Action Alternative would include a population of approximately 1.1 million socially disadvantaged operators and 0.8 million beginning farmers/ranchers. Participation by these populations currently account for approximately 2.4% of the total contracts. Under Alternative 1, participants could receive up to 90% cost share on new acreage, an additional payment of \$78.12 per acre; however, benefits would be minimized due to the overall CRP acreage limitation from FY 2010 to FY 2012 and the percentage of these populations expected to participate in CRP. If the percentage of</p>	<p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Under Alternative 2, beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes would be eligible for incentives for CPs that are currently authorized signup incentive payments. This would expand the program to include the same quantity of operators as that of Alternative 1. Eligible CPs would be limited to Continuous Signup acreage, which reduces the amount of eligible acreage. For example, based on data from previous signups, if 2.4% of the participants were comprised of socially disadvantaged farmers/ranchers an additional 12,000 acres would be enrolled by these populations, this would equate to an additional \$0.6 million in incentive payments. The range of overall</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Socioeconomics (cont'd)</p>	<p><u>Provision 9 (Pollinator Conservation):</u> Continuation of methods to reduce impacts to pollinators under the No Action Alternative would not produce significant negative impacts. Compared to the action alternatives, the No Action Alternative would result in fewer costs for new plantings and changes to the application of agricultural chemicals.</p>	<p>these population enrolled in CRP doubled (to 4.8% of the total contract), it could create an additional 8,000 or fewer contracts, and generate approximately \$27 million in additional cost-share payments. A PAYGO offset would be required, which could potentially reduce services for other existing or potential participants in CRP. Alternative 1 would not be anticipated to create overall significant socioeconomic effects, but may provide minor benefits on a local level. Alternative 1 would be more beneficial to socially disadvantaged farmers and ranchers than either the No Action Alternative or Alternative 2.</p> <p><u>Provision 9 (Pollinator Conservation):</u> The creation of a Pollinator Habitat CP under Alternative 1 would impact a maximum 1.6 million acres of newly enrolled acreage. The value to participants could reach slightly more than \$1000 per acre over a 10-year period, equating to a total program cost of \$1.6 billion. Cost-share paid by participants would be an estimated \$94.22 per acre over the 10-year period. Alternative 1 would also include modifications to existing CPs to benefit pollinators which would increase the abundance of pollinators and their contribution to economic productivity. Although cost increases due to changes in the CP vegetative structure would occur, significant socioeconomic impacts under</p>	<p>incentive payments could be higher or lower, yet are estimated to be less than Alternative 1. Moreover, under Alternative 2, a PAYGO offset would be required which could result in reduced program services. Alternative 2 would provide minor benefits to these populations, however, benefits would be greater than the No Action Alternative. No significant negative impacts to socioeconomic resources would occur from implementation of Alternative 2.</p> <p><u>Provision 9 (Pollinator Conservation):</u> Alternative 2 would modify existing CPs to benefit pollinators; changes include planting of native vegetation and a reduction in the use of agricultural chemicals. Impacts from modifying CPs to benefit pollinators would be similar to those described for Alternative 1. Alternative 2 would be anticipated to provide greater benefits and be more costly than the No Action Alternative, yet provide fewer overall benefits and be less costly than Alternative 1. No significant negative impacts would occur from implementation of Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Socioeconomics (cont'd)</p>		<p>Alternative 1 would be unlikely due to the relatively small size of the program in relation to other CPs. Of the alternatives analyzed, Alternative 1 would result in the greatest amount of societal benefits, yet would also have the greatest associated costs. No significant negative socioeconomic impacts would occur under Alternative 1.</p>	
<p>Environmental Justice</p>	<p>The FSA Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status. The draft Civil Rights Impact Analysis for the 2008 Farm Bill Interim Rule for CRP (FSA 2008) has determined that the program would not adversely nor disproportionately impact minorities, women, or persons with disabilities. As such, the alternatives analyzed would not result in significant anticipated disproportionate impacts to minority or low-income populations, thereby, no environmental justice inequity would occur.</p> <p><u>Provision 1 (National Conservation Initiatives):</u> National CPAs and incentives to encourage enrollment would continue as currently organized under the No Action Alternative. The No Action Alternative would have less likelihood of creating negative impacts to protected populations since no new PAYGO offsets would be required. No highly adverse nor disproportionate negative impacts to Environmental Justice populations would occur from continuation of current procedures.</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> Three new National conservation initiatives would be created under Alternative 1, with funding requiring PAYGO offset in the USDA budget that may reduce other program services. Compared to the No Action Alternative and Alternative 2, Alternative 1 has a higher potential of creating adverse impacts to minority or low-income populations because of the PAYGO requirement. Any redistribution to meet the PAYGO offset requirement would be conducted to ensure it does not result in secondary disproportional negative impacts to minority or low-income populations. No significant highly adverse nor</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> Alternative 2 would be similar to the No Action Alternative; with the exception of the reduction in the wetland initiative under this alternative. This alternative would be expected to have similar potential for negative impacts to Environmental Justice populations as the No Action Alternative, and has a lower potential impact than that of Alternative 1 due to the PAYGO offset requirements of the latter. Alternative 2 would not result in significant highly adverse disproportionate negative impacts to minority or low income populations, thereby no environmental justice inequity would occur.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Environmental Justice (cont'd)</p>	<p><u>Provision 2 (Maximum Enrollment):</u> Since the No Action Alternative would maintain the CRP acreage limitation at 32 million acres with an apportionment of 27.5 million acres to General Signup and 4.5 million acres to Targeted Signup, no disproportionate nor highly adverse impacts to minority or low-income populations would occur as the existing mechanisms for qualifying producers and land for enrollment have already been found to be nondiscriminatory. Under the No Action Alternative all eligible applicants would have to meet the same eligibility criteria for enrollment into CRP. The No Action Alternative would have effects similar to Alternative 1 given both have the same acreage limitation of 32 million acres.</p> <p><u>Provision 3 (Alfalfa Crop History):</u> Land planted to alfalfa grown along with multiyear grasses or legumes and summer fallow in any rotation with an eligible commodity in the years from 1996 to 2001 currently meet cropping history requirements. All eligible producers that meet the cropping history requirements</p>	<p>disproportionate negative impacts to environmental justice populations would occur under Alternative 1.</p> <p><u>Provision 2 (Maximum Enrollment):</u> Alternative 1 would maintain the CRP program enrolled acreage limit at 32 million acres as with the No Action Alternative, yet would apportion the acres between General and Targeted Signups differently. Because the overall acreage would be the same, Alternative 1 impacts to minority and low-income populations would be the same as the No Action Alternative. When compared to Alternative 2, Alternative 1 has less potential to create adverse impacts to minority and low-income populations. The anticipated effects to minority and low-income populations would be negligible, thus no highly adverse nor disproportionate negative impacts to environmental justice populations would occur.</p> <p><u>Provision 3 (Alfalfa Crop History):</u> Alternative 1 would expand cropping history to alfalfa grown alone with any other eligible commodity for at least six years of an eight-year rotation, with the rotation occurring during 2002 to 2007. This alternative has the potential to increase the amount of acreage eligible for enrollment more than</p>	<p><u>Provision 2 (Maximum Enrollment):</u> The reduction of the CRP program enrolled acreage to a maximum 24 million acres under Alternative 2 increases the potential for negative impacts to minority and low-income populations due to adverse effects to some of the environmental components that would occur. Yet, given that all applicants would have an equal opportunity to participate in CRP, and expiring acreage is set on a contractual schedule, it would not be anticipated that any certain group of producers would experience a disproportionate level of the negative impacts. While the potential for negative impacts under Alternative 2 would be greater than the other alternatives analyzed, significant highly adverse or disproportionate negative impacts to minorities or low-income populations would not occur.</p> <p><u>Provision 3 (Alfalfa Crop History):</u> Alternative 2 would allow alfalfa alone grown for 10 years in a 12-year rotation with another eligible commodity, with the rotation occurring from 2002 to 2007 to be eligible land for CRP. This alternative may qualify less acreage as eligible than the other alternatives due to the stricter rotation</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Environmental Justice (cont'd)</p>	<p>under the No Action Alternative would have an equal opportunity to enroll in CRP. Moreover, the amount of acres affected is small when compared to the total cropland which also meets other crop history requirements. The expected effects under the No Action Alternative are expected to be similar to those of the action alternatives, given the small amount of additional acreage that may be eligible under those alternatives. No significant highly adverse or disproportionate negative impacts to environmental justice equity would occur.</p> <p><u>Provision 4 (County Acreage Limitation Exception):</u> Maintaining the current 25% limit on enrollment of county cropland acreage into CRP or WRP with no additional cap would not have any negative impacts. The amount of acreage across the entire program that has been allowed in excess of the 25% cap is small, approximately 1.2% of total CRP enrollment. Past studies have indicated that over the long term, CRP enrollment has not contributed to or exacerbated adverse local socioeconomic conditions. Operators have equal opportunity to enroll in CRP. As such, the No Action Alternative would not result in significant highly adverse disproportionate impacts to minority or low income populations that would cause an environmental justice inequity.</p>	<p>either the No Action Alternative or Alternative 2, but this may be offset by the stricter rotation requirement; however, since the amount of acreage would be small, the effects of Alternative 1 would be similar to those of the No Action Alternative and Alternative 2. All eligible producers would have equal opportunities to participate; therefore, no significant negative highly adverse nor disproportionate impacts to minority or low-income populations would occur.</p> <p><u>Provision 4 (County Acreage Limitation Exception):</u> Under Alternative 1, authorizing county governments to exercise yes/no authority to waive the 25% county cropland cap for CREP or Continuous Signup enrollments only limits the potential amount of acreage that may exceed the county maximum. Alternative 1 would potentially provide a smaller pool of excepted acres than that of the No Action Alternative, yet more than Alternative 2, which imposes an additional cap. No significant highly adverse disproportionate negative impacts to minority or low-income populations would occur under Alternative 1 that would create an environmental justice inequity.</p>	<p>schedule. The amount of acreage involved would likely be small, thus potential impacts would be similar to both the No Action Alternative and Alternative 1. No significant negative highly adverse or disproportionate impacts to environmental justice equity would occur under Alternative 2.</p> <p><u>Provision 4 (County Acreage Limitation Exception):</u> County governments would have authorization under Alternative 2 to exercise yes/no authority to exceed the 25% county cropland acreage cap to no more than 50%, thus providing for fewer acres than either the No Action Alternative or Alternative 1 that can be excepted. The difference would not be substantial and exceptions have historically involved very few acres. Alternative 2 would not create significantly highly adverse or disproportionate negative impacts to minority or low-income populations that would cause an environmental justice inequity.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Environmental Justice (cont'd)</p>	<p><u>Provision 5 (Conservation Plan Management):</u> Management as specified in the Conservation Plan is expected to occur, with MCM required for all CPs on all contracts executed after FY 2004, and is voluntary for those executed before then. Mid-contract management activities are cost-shared at 50%, which is applied equally to all participants. The No Action Alternative could create a higher burden on low-income participants to complete MCM activities, yet this potential is offset by cost-share and technical assistance programs, and no significant highly adverse or disproportionate negative impacts to low-income or minority populations would occur that would create an environmental justice inequity.</p> <p><u>Provision 6 (Harvesting CRP):</u> The current provisions for harvesting or grazing on authorized lands enrolled in CRP as provided for by the 2002 Farm Bill would continue under the No Action Alternative. Currently rental payment reductions for lands actually hayed or grazed are required for haying or grazing conducted under managed, emergency, or limited grazing procedures. These provisions were fully</p>	<p><u>Provision 5 (Conservation Plan Management):</u> Under Alternative 1, MCM would be required only if included in the Conservation Plan by the NRCS conservationist or TSP. With MCM not being required for all CPs, the financial burden may be reduced, which would be a short-term benefit for low-income producers. Nevertheless, all CRP participants are required to maintain the conservation cover, and any MCM activity included in the Conservation Plan would be required. Of the alternatives analyzed, this alternative has the least potential to cause financial burden for low-income participants. Likewise, because of cost-share and technical assistance provided by FSA, potential financial burdens would not be significantly negative. No highly adverse disproportionate impacts to environmental justice populations would occur under Alternative 1.</p> <p><u>Provision 6 (Harvesting CRP):</u> Only the CPs currently authorized for harvest or grazing would be authorized for routine grazing and managed harvest under Alternative 1. Any change to PNS, period of routine grazing and harvest, length of harvest, and frequency of routine grazing and harvest of those CPs desired by States would require NEPA analysis. Alternative 1 would also allow prescribed grazing to</p>	<p><u>Provision 5 (Conservation Plan Management):</u> Under Alternative 2, MCM activities would be required on certain CPs as specified by the State Technical Committee, with any other MCM required if included in the Conservation Plan by the NRCS or TSP. While not as flexible as Alternative 1, this alternative would specify the MCM requirements for a location, potentially reducing the financial burden for some low-income producers. While Alternative 2 may cause less burden than the No Action Alternative, it may be greater than Alternative 1. Yet, due to cost-share and technical assistance provided by FSA, potential financial impacts to CRP participants would not be significantly negative. No significant highly adverse disproportionate negative impacts to low-income or minority populations would occur that would create an environmental justice inequity.</p> <p><u>Provision 6 (Harvesting CRP):</u> In addition to the changes outlined in Alternative 1, Alternative 2 would allow the inclusion of additional CPs as requested by States to be authorized for routine grazing and managed harvest provided NEPA analysis finds no significantly adverse impacts would occur. Benefits would be similar to those of Alternative 1 and greater than those of the No Action Alternative,</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Environmental Justice (cont'd)</p>	<p>analyzed and found to be in compliance with nondiscrimination in program delivery of the 2002 Farm Bill. The procedures for harvesting or grazing CRP apply equally to all participants with lands enrolled under CPs eligible for harvest or grazing and payment reductions as they apply are made at the same percentage for participants electing to harvest or graze. The amount of CRP acres utilized for harvest and grazing since 2002 is relatively small. Recently undertaken NEPA analysis of changing the frequency of managed haying and grazing and in some cases the PNS dates in 13 States has found the general environmental and socioeconomic effects to be minor, with both beneficial and adverse impacts to be highly localized and wildlife species dependent. Compared to the action alternatives which would allow for the use of prescribed grazing to control of invasive species other than kudzu, the No Action Alternative would have fewer overall benefits. No significant highly adverse nor disproportionate impacts would occur under the No Action Alternative.</p> <p><u>Provision 7(NASS Cash Rental Rates):</u> The current mechanism to determine rental rates would continue under the No Action Alternative, with Targeted Signup incentives remaining unchanged. Compared to the action alternatives, no shift in the geographic distribution of enrolled CRP or</p>	<p>control invasive species other than kudzu on specified CPs in accordance with the control plan in the approved Conservation Plan. A rental payment reduction would be applied for 25% of the acreage actually managed harvested or routinely grazed, except no reduction would be made for prescribed grazing to control invasive plant species. This alternative would be more beneficial than the No Action Alternative since it allows broader application of prescribed grazing to control invasive species other than kudzu, with similar benefits to Alternative 2. Since managed harvesting and routine grazing procedures would equally apply to all CRP participants with lands enrolled authorized for these activities nationally, no inequity would occur. The requirement for additional NEPA analysis would ensure any future changes to timing, frequency, and length of harvest or grazing or the PNS do not negatively affect minorities or low income populations on the local level. No highly adverse disproportionate impacts to environmental justice populations would occur.</p> <p><u>Provision 7(NASS Cash Rental Rates):</u> Under Alternative 1, use of NASS cash rental rates for annual payments made for General Signups after December 1, 2009 would likely change the geographic distribution of newly enrolled CRP acreage. Incentive payments would increase 20% to</p>	<p>since prescribed grazing to control invasive species other than kudzu would be allowed. The requirement for NEPA analysis would ensure changes do not negatively affect environmental justice populations at the local level. No highly adverse disproportionate impacts to minority or low income populations would occur that would create an environmental justice inequity.</p> <p><u>Provision 7: (NASS Cash Rental Rates)</u> Alternative 2 would use NASS cash rental rates for all signups with no additional incentive for Targeted Signup acres. This alternative would also change the geographic distribution of newly enrolled CRP acreage but since the majority of</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Environmental Justice (cont'd)</p>	<p>overall reduction in annual rental payments is expected under the No Action Alternative. No significant negative effects to minority or low-income populations would occur.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Under the No Action Alternative, incentives to beginning farmers and limited resource farmers, ranchers, and Indian Tribes would continue; however, the alternative provides benefits to fewer potential recipients than either Alternatives 1 or 2 as it does not specifically provide incentives for socially</p>	<p>ensure Targeted Signup acreage enrollment goals would be met. This distribution is dependent in part on total program acreage enrollment goals, but at the 32 million acre cap limit, rental rates may decline more than 25 percent in eight states of which one, New Mexico, is a concentrated minority area; none of these States are considered concentrated poverty areas. Of the States experiencing rate increases of more than 50%, California is a concentrated minority area and Mississippi is a poverty area. Alternative 1 would be expected to reduce annual rental payments across all participants more than that of the No Action Alternative, yet the impact to protected environmental justice populations would not be highly adverse or disproportionate. Payments for Targeted Signups under Alternative 1 would be higher than the other alternatives. No highly adverse disproportionate impacts to minorities or low income populations would occur that could cause an environmental justice inequity.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Under Alternative 1, the expansion of benefits to socially disadvantaged farmers and ranchers over that of the No Action Alternative would include a maximum population of approximately 1.1 million socially disadvantaged operators. This alternative would extend additional cost</p>	<p>acreage would be General Signup, it would be similar to that experienced under Alternative 1. Alternative 2 would reduce CRP annual rental payments similar to that of Alternative 1 for both the 32 million acre CRP limitation and 24 million acre limitation. Alternative 2 would generate fewer acres offered for Targeted Signups than Alternative 1 due to lower overall rates, but not substantially. No significant highly adverse disproportionate impacts to minority or low income populations would occur.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Alternative 2 would only offer signup incentives to beginning, limited resource, socially disadvantaged, and Tribes for CPs that currently are eligible for these incentives, primarily under Continuous Signup. Alternative 2 would provide benefits to a larger population than the No Action</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Environmental Justice (cont'd)</p>	<p>disadvantaged farmers and ranchers. Operators currently meeting the definition of socially disadvantaged total approximately 1.1 million persons or 33% of all operators, and currently about 2.4% of CRP participants meet the definition. Continuation of current procedures would extend benefits to limited resource farmers that are protected under environmental justice regulations as impoverished. Negative impacts to socially disadvantaged farmers/ranchers would be limited due to the small number of acres available to enroll under the 32 million acre program cap from now until FY 21012 and the relatively small pool of socially disadvantaged operators that may otherwise meet operator and land eligibility requirements to enroll in CRP. The No Action Alternative would not result in significant highly adverse disproportionate impacts to minority or low income populations that would cause an environmental justice inequity.</p> <p><u>Provision 9: (Pollinator Conservation)</u> Maintaining the current methods for reducing impacts to pollinators under the No Action Alternative would be the least costly alternative for establishment and/or maintenance of conservation covers and apply equally to all participants or potential participants. The No Action Alternative would not result in highly adverse disproportionate impacts to low income or</p>	<p>share benefits, advance payments and enrollment incentives to limited resource and beginning farmers/ranchers. Alternative 1 would require a PAYGO offset, which could potentially result in other program service reductions. Of the alternatives considered, Alternative 1 would provide the greatest benefits to low income and minority populations. No highly adverse disproportionate impacts to would occur that would cause an environmental justice inequity.</p> <p><u>Provision 9 (Pollinator Conservation):</u> Under Alternative 1, the establishment of a new Pollinator Habitat CP that would enroll a maximum 1.6 million acres, as well as the modification of certain CPs to benefit pollinators, would potentially be more costly to establish and maintain than that of the No Action Alternative; however, enrollment in the Pollinator Habitat CP would be voluntary and the same rules would apply</p>	<p>Alternative, but would offer fewer benefits than Alternative 1. These incentives would require a PAYGO offset which could result in reductions of other program services. Alternative 2 would not result in highly adverse disproportionate impacts to minority or low income populations that would cause an environmental justice inequity.</p> <p><u>Provision 9 (Pollinator Conservation):</u> The costs of establishing and maintaining the modified CPs to benefit pollinators under Alternative 2 would be similar to that of Alternative 1, yet a new Pollinator Habitat CP would not be created. Similar to Alternative 1, potential impacts under Alternative 2 would be minimal due to the limited amount of acreage involved and the same rules would apply to all participants,</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
Environmental Justice (cont'd)	minority populations thus no environmental justice inequity would occur.	to all participants and applicants. In addition, the small amount of acreage that could be enrolled in the new CP would minimize potential negative impacts. No highly adverse disproportionate impacts to low income or minority populations would occur that would cause an environmental justice inequity.	therefore, no highly adverse disproportionate impact to protected environmental justice populations would occur.
Recreation	<p><u>Provision 1 (National Conservation Initiatives):</u> The No Action Alternative addresses national, state, and regional conservation needs through the establishment of national and State CPAs, CREPs, and initiatives providing habitat to particular wildlife or improving water quality. Direct economic benefits, based on wildlife viewing and pheasant hunting, are estimated to be \$650 million and \$87 million annually. The inclusion of specific initiatives has increased local recreation values while increasing benefits to wildlife. Likewise, the development of CPs that combine soil conservation, which also improves water quality through reduced sedimentation and pollutant loading, and wildlife habitat enhancement, creates greater consumptive and non-consumptive outdoor recreation opportunities. The No Action Alternative would provide recreation benefits similar to that of the action alternatives since the same maximum number of acres may be enrolled; however, regional benefits to certain high priority wildlife and water quality</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> Alternative 1 includes the implementation of three additional national initiatives, with funding for these initiatives requiring a PAYGO offset. These new initiatives focus on water quality, reduced erosion from HEL, and critical wildlife habitat. The improvement of surface water quality would be beneficial for freshwater-based recreation activities. Similarly, the focus on critical wildlife habitat would create non-monetary societal benefits through the continued protection of declining wildlife species; and may increase monetary benefits through activities such as eco-tourism. Total acreage devoted to the new initiatives would be 1.5 million acres. Compared to the No Action Alternative and Alternative 2, Alternative 1 would provide more targeted benefits to recreation, but overall, impacts to recreation would be similar among all alternatives considered. No significant negative impacts would occur under Alternative 1.</p>	<p><u>Provision 1 (National Conservation Initiatives):</u> Alternative 2 would continue current procedures for addressing national, state and regional conservation needs, but would reduce the current wetland initiative. A maximum 0.75 million acres are authorized for these initiatives. Adverse effects would most likely be related to the importance of wetland habitats in major flyways. A reduction in wetland initiatives would reduce the amount of acreage available for new enrollments that could correspond to a reduction in populations of migratory waterfowl and a subsequent reduction in waterfowl related outdoor recreation activities. Given only about 223,000 acres are currently enrolled in these initiatives and the 0.75 million acre cap, the acreage affected would be limited. The reduction could be negative in some local areas, but given the limited acreage and the unlikelihood enrolled acreage would be reduced in a concentrated location, no significant adverse impacts would occur.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Recreation (cont'd)</p>	<p>may be more likely under Alternative 1. No changes to current recreation benefits from the baseline and no significant negative impacts would occur under the No Action Alternative.</p> <p><u>Provision 2 (Maximum Enrollment):</u> Maintaining the current authorized level of CRP at 32 million acres under the No Action Alternative is expected to generate approximately \$649.6 million in wildlife recreation benefits. More acreage would be apportioned for General Signup (27.5 million acres) than under Alternative 1, with 4.5 million acres apportioned for Targeted Signups; General Signup acreage commonly provides greater wildlife benefits due to the larger parcels of land enrolled that would establish contiguous habitat, which translates into greater potential outdoor recreation benefits. The No Action Alternative would provide similar benefits as Alternative 1 since the same program acreage limit would apply, yet benefits would be much greater than Alternative 2, that would reduce CRP program acreage from current levels. No negative significant negative impacts to outdoor recreation would occur under the No Action Alternative.</p> <p><u>Provision 3(Alfalfa Crop History):</u> Under the No Action Alternative, continuation of current cropping history</p>	<p><u>Provision 2 (Maximum Enrollment):</u> The reapportionment of the 32 million acres between General (24 million acres) and Targeted (eight million acres) Signups under Alternative 1 would result in outdoor recreation benefits similar to those of the No Action Alternative. As the proportion of General Signup acres shifts towards Targeted Signup, benefits may decrease, since the latter tends to include smaller linear CPs, but this would be localized and depend on surrounding land use, and some Targeted Signup acres provide wildlife habitat which is more conducive for some outdoor recreation activities. Alternative 1 provides substantially greater benefits than those of Alternative 2, given the proposed reduction in authorized acreage by the latter alternative. No significant negative impacts to recreation would occur from the implementation of Alternative 1.</p> <p><u>Provision 3 (Alfalfa Crop History):</u> Under Alternative 1, allowing alfalfa grown alone for six years in an eight-year rotation</p>	<p><u>Provision 2 (Maximum Enrollment):</u> The decrease of maximum total CRP authorized acreage to 24 million acres under Alternative 2 would result in a substantial decline in the estimated value in outdoor recreation benefits of between \$81 and \$143 million. Of the alternatives analyzed, Alternative 2 would provide the least amount of outdoor recreational benefits. Significant negative impacts may occur to recreation opportunities on a local scale from the implementation of Alternative 2.</p> <p><u>Provision 3(Alfalfa Crop History):</u> Alternative 2 would allow alfalfa alone grown for 10 years in a 12-year rotation with</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Recreation (cont'd)</p>	<p>eligibility for alfalfa affects a small amount of acreage when compared to all other cropland acreage meeting other crop history requirements (e.g. cropped two of six years during 1996 to 2001). The increase in enrollment of acreage in areas with a high occurrence of alfalfa as a primary crop would benefit local outdoor recreation as a result of the land use change from enrolling in CRP. The No Action Alternative would generate small positive benefits to outdoor recreation. The No Action Alternative would potentially qualify more land than the action alternatives that have stricter rotation requirements, but this may be offset by not allowing alfalfa alone in rotation to qualify. No significant negative impacts would occur under the No Action Alternative.</p> <p><u>Provision 4 (County Acreage Exception Limitation):</u> Maintaining the current 25% limit on enrollment of county cropland acreage into CRP or WRP under the No Action Alternative allows more acreage to be removed from production locally, although the overall 32 million acre limit and State limits would still be maintained. Allowing more acreage to be enrolled benefits wildlife, and consequently enhances outdoor recreation opportunities. The No Action Alternative provides benefits similar</p>	<p>with another eligible commodity, with the rotation occurring during 2002 to 2007, would result in small benefits to outdoor recreation, primarily in areas with a high occurrence of alfalfa as a primary crop. Under this alternative, additional acreage may be eligible for enrollment, as compared to the No Action Alternative, but this could be offset by the stricter rotation schedule. Alternative 1 could qualify even more acreage than Alternative 2, which would have yet a stricter rotation schedule requirement. Benefits derived from this alternative would be small and not significant given the small amount of acreage pool available under the 32 million acre program cap from now until FY 2012. No significant negative impacts to recreation would occur from the implementation of Alternative 1.</p> <p><u>Provision 4 (County Acreage Exception Limitation):</u> Allowing the county to have yes/no authority to exceed the 25% county cropland limitation for additional CREP or Continuous Signup under Alternative 1 is expected to create highly localized outdoor recreational benefits. Alternative 1 is more restrictive than the No Action Alternative because it limits additional acres to CREP or Continuous Signup; however, this difference would be negligible because the total number of acres authorized for the</p>	<p>another eligible commodity to meet crop history requirements, resulting in a small increase to outdoor recreation benefits similar to those of Alternative 1. Alternative 2 could also make additional acreage eligible for enrollment compared to the No Action Alternative since alfalfa alone in rotation could qualify, yet this could be offset by the stricter rotation schedule. Similar to Alternative 1, the acreage affected would be relatively small. No significant negative impacts would occur under Alternative 2.</p> <p><u>Provision 4 (County Acreage Exception Limitation):</u> Alternative 2 would be the same as Alternative 1, however, under this alternative exceptions would be limited to no more than 50% of a county's cropland acreage. As with the other alternatives analyzed, benefits would be negligible and highly localized, yet Alternative 2 would provide the fewest benefits since it would have greater limitations. No significantly negative impacts would occur from the implementation of Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Recreation (cont'd)</p>	<p>to those of Alternative 1, but would provide more benefits than Alternative 2; however, because only 24 counties currently exceed the cap with a small amount of acreage, the No Action Alternative would not be substantially different from the action alternatives. No significant negative impacts would occur under the No Action Alternative.</p> <p><u>Provision 5 (Conservation Plan Management):</u> Under the No Action Alternative, MCM is required on all contracts executed after FY2004, and is voluntary for contracts accepted before that year. Requiring MCM activities improves the vegetative stand's health and vigor, ensuring its long-term viability as wildlife habitat. Increasing the value for wildlife and water quality would generate small consumptive and non-consumptive outdoor recreation benefits. Management activities can benefit some wildlife but not others, and has the potential to negatively impact the conservation cover and water quality; however, adherence to the Conservation Plan and applicable standards, provisions, and guidelines would ensure no significant adverse effects would occur and the intended conservation purpose would be met. The No Action Alternative could impose management that</p>	<p>program would still be 32 million acres, and the rate at which existing contracts are expected to expire until FY 2012 would allow only a relatively small amount of additional acreage to be enrolled in the program. This alternative would be more beneficial than Alternative 2 by allowing more land to be enrolled with no additional cap. No significant negative impacts would occur from the implementation of Alternative 1.</p> <p><u>Provision 5 (Conservation Plan Management):</u> Alternative 1 would require MCM only if included in the Conservation Plan. This would provide management designed for the particular lands enrolled, but could result in negative impacts if appropriate MCM was not included in the plan, an unlikely occurrence. As such, Alternative 1 may not be as beneficial as the No Action Alternative or Alternative 2. Impacts would not be significantly negative under Alternative 1.</p>	<p><u>Provision 5 (Conservation Plan Management):</u> Under Alternative 2, MCM would be required on certain CPs as determined by the State Technical Committee and other management deemed appropriate by the NRCS conservationist or TSP for inclusion in the Conservation Plan. This alternative provides flexibility in requiring MCM activities that are locally appropriate and clear guidance to program participants. Long-term, beneficial impacts of Alternative 2 would be similar to the No Action Alternative, but would be potentially more beneficial than for Alternative 1. No significantly negative impacts would occur from the implementation of Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Recreation (cont'd)</p>	<p>would not be applicable to local conditions. It would potentially be more beneficial than Alternative 1, yet less than Alternative 2, but no substantial different impacts would occur among the alternatives considered. No significantly negative impacts would occur to recreation from the implementation of the No Action Alternative.</p> <p><u>Provision 6 (Harvesting CRP):</u> Under the No Action Alternative, harvesting and grazing activities would continue on approved CPs enrolled in CRP and only if included in the Conservation Plan. As discussed for biological resources, providing harvesting, haying, and grazing activities would be completed within the requirements of the Conservation Plan while ensuring these activities are frequent enough to optimally maintain early successional grasslands, but not too frequent such that significantly negative impacts to biological resources would occur, ensures the conservation would be maintained, benefiting vegetation, wildlife, and water quality, all of which would positively contribute to outdoor recreation. If established provisions, standards, guidelines, and the Conservation Plan are followed, and harvest plans are adjusted to resource conditions on the land just prior to haying or grazing, then no significant negative effects to biological resources or water quality would occur, hence, no</p>	<p><u>Provision 6 (Harvesting CRP):</u> Under Alternative 1, direct and indirect impacts of managed harvests and routine grazing would be similar to the No Action Alternative since only those CPs currently authorized for harvest or grazing would be eligible for managed harvest or routine grazing. If implemented as proposed by Alternative 1, prescribed grazing for the removal of invasive plants other than kudzu would be authorized for certain CPs which would positively impact biological resources, and thereby recreation, by removing competition with the conservation cover, and improving habitat. Like managed harvest and routine grazing, prescribed grazing would only occur under a control plan included in the Conservation Plan. Moreover, requiring additional State-level NEPA analysis of changes to the PNS, timing, and frequency of managed harvesting and routine grazing ensures potential negative environmental impacts, including impacts to recreation, would be determined and addressed on a local scale.</p>	<p><u>Provision 6 (Harvesting CRP):</u> Alternative 2 provisions would be the same as Alternative 1, except NEPA analysis would be required for any change to CPs authorized for managed harvest or routine and prescribed grazing, as well as any changes to PNS, timing, length or frequency of the activity. The additional analysis under this alternative would highlight the specific impacts to outdoor recreation from proposed changes. Benefits derived from the implementation of this alternative would be similar to those of Alternative 1, and greater than those of the No Action Alternative, since prescribed grazing of invasive species other than kudzu could occur. No significant negative impacts would occur from managed harvesting or routine grazing if these activities are completed in accordance with existing standards, provisions, and guidelines, and the parameters for conducting these activities are stipulated in the Conservation Plan that would be adjusted to resource conditions on the land prior to conducting these activities.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Recreation (cont'd)</p>	<p>significant negative impacts to recreation would occur. The No Action Alternative would provide the least benefits when compared to the action alternatives since prescribed grazing would be limited to controlling kudzu only.</p> <p><u>Provision 7 (NASS Cash Rental Rates):</u> Current annual rental payment rules would continue under the No Action Alternative, but maintenance incentives would be removed for contracts executed after October 1, 2009. As such, the current geographic distribution and outdoor recreation benefits would not be expected to change. CRP would continue to provide substantial contributions to outdoor recreation activities. No significantly negative impacts would occur from the implementation of the No Action Alternative.</p>	<p>No significant negative impacts to recreation would occur under this alternative if managed harvest and routine grazing adhere to a Conservation Plan adapted to resource conditions just prior to engaging in such activities, the CPs authorized for harvest or routine grazing do not change, and State-level NEPA would be completed for any proposed changes to the PNS, timing, and frequency of these activities prior to implementation. Alternative 1 would be more beneficial than the No Action Alternative since it would authorize prescribed grazing for controlling invasive species other than just kudzu, but would have benefits similar to Alternative 2.</p> <p><u>Provision 7 (NASS Cash Rental Rates):</u> The NASS survey rates that would be used to determine annual payment rates for General Signups after December 1, 2009 have been found to be less than the previously used land value survey rates in some States, although lower in other States. As a result, there could be a change in the geographic distribution of CRP acreage, thus shifting outdoor recreational benefits from one area to another. Positive effects to outdoor recreation would occur under Alternative 1, yet this gain would be balanced by the localized losses that could occur. Benefits would not be substantially different from the other alternatives, although they would be potentially less than</p>	<p><u>Provision 7 (NASS Cash Rental Rates):</u> Under Alternative 2, annual rental rates for General Signups after December 1, 2009 would also be determined using NASS survey rates; however, incentives for Targeted Signups would not be increased as in Alternative 1. Similar to Alternative 1, geographic shifts are also anticipated, yet more acres could be enrolled under General Signups because incentives for Targeted Signups would remain at current levels. Because General Signups provide greater wildlife benefits, greater benefits to outdoor recreation are expected. Although the geographic distribution is expected to change, the benefits under Alternative 2 are anticipated to be similar to those of the No</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
<p>Recreation (cont'd)</p>	<p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Maintaining the current terms for providing incentives to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs would not impact outdoor recreation benefits. This provision targets specific subpopulations of potential CRP participants without changing the total number of acres authorized for the program and as such does not change any aspect of the program which could influence outdoor recreation. It would not extend benefits to socially disadvantaged farmers/ranchers which may negligibly impact reaching enrollment goals. Therefore, no significant effects would occur under the No Action Alternative.</p>	<p>Alternative 2 or the No Action Alternative. Alternative 1 would be anticipated to enroll targeted acreage near the goal of 4.5 million acres due to the increased incentive payments available under this alternative, which would be more beneficial than either the No Action Alternative or Alternative 2. No significantly negative impacts would occur from implementation of Alternative 1.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Alternative 1 would expand to offer incentives to include socially disadvantaged farmers/ranchers while increasing incentives to limited resource, beginning farmer/ranchers, and Tribes as well. The USDA budget would require PAYGO offset which could potentially reduce other program services. Alternative 1 provides incentives for a greater population of eligible operators than the No Action Alternative and would provide more financial assistance than the other alternatives. Given the relatively small population that would qualify for these incentives, the impact of this alternative on recreation would not be much different from the other alternatives analyzed. No significantly negative impacts would occur from implementation of Alternative 1.</p>	<p>Action Alternative; however, the differences between Alternative 2 and the other alternatives analyzed would not be substantial. No significantly negative impacts would occur from implementation of Alternative 2.</p> <p><u>Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives):</u> Under Alternative 2, only additional signup incentives for socially disadvantaged, beginning, and limited resource farmers/ranchers and Indian tribes would be offered for those CPs currently authorizing such incentives. A PAYGO offset would also be required for these payments. However, given the relatively small population that would qualify for these incentives, the impact of this alternative on recreation would not be much different from the No Action Alternative or Alternative 1. No significant negative impacts are expected from the implementation of Alternative 2.</p>

Table ES-1. Summary of Environmental Consequences
(cont'd)

Resources	No Action (Current Program)	Alternative 1	Alternative 2
Recreation (cont'd)	<p><u>Provision 9 (Pollinator Conservation):</u> Maintaining current methods to reduce impacts to pollinators under the No Action Alternative could have minor effects on outdoor recreation. Methods such as spot treatments and reducing the use of pesticides could lead to improvements in water quality and subsequent improvements to outdoor recreation benefits. The No Action Alternative would provide the least amount of benefits from among the alternatives. No significantly negative impacts would occur from implementation of the No Action Alternative.</p>	<p><u>Provision 9 (Pollinator Conservation):</u> The modification of CPs to benefit pollinators, along with the creation of a pollinator-specific CP under Alternative 1 could provide small benefits to outdoor recreation opportunities such as eco-tourism. Implementation of this alternative is expected to be more beneficial than either the No Action Alternative or Alternative 2. No significantly negative impacts would occur under Alternative 1.</p>	<p><u>Provision 9 (Pollinator Conservation):</u> Under Alternative 2, only existing CPs for wildlife would be modified to benefit pollinators (e.g., grass, buffer strips, windbreaks, shelterbelts, and trees). The changes implemented to improve pollinator habitat would also benefit other types of wildlife, which would create some limited positive impacts for outdoor recreation. While Alternative 2 would be more beneficial than the No Action Alternative that only provides guidance in NRCS conservation standards, it is not as beneficial as Alternative 1 that creates a Pollinator Habitat CP. No significantly negative impacts would occur from implementation of Alternative 2.</p>

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ACRONYMS AND ABBREVIATIONS

AFA	American Forest Association
AGI	Adjusted Gross Income
AMA	Agricultural Management Assistance
ARMS	Agricultural Resource Management Survey
ARPA	Archaeological Resources Protection Act of 1979
BCAP	Biomass Crop Assistance Program
BEA	Bureau of Economic Analysis
BLM	Bureau of Land Management
BMP	Best Management Practice
C	Carbon
CAA	Clean Air Act
CaCO ₃	Calcium Carbonate
CCC	Commodity Credit Corporation
CCPI	Cooperative Conservation Partnership Initiative
CEAP	Conservation Effects Assessment Project
CEC	Commission for Environmental Cooperation/Cation Exchange Capacity
CEPD	Conservation and Environmental Programs Division
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH ₄	Methane
CHST	Collection, Harvest, Storage, and Transportation
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COC	County Committees
COMET-VR	Voluntary Reporting of Greenhouse Gases-Carbon Management Evaluation Tool
CP	Conservation Practice
CPA	Conservation Priority Area
CRIA	Civil Rights Impact Analysis
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSP	Conservation Stewardship Program
CSRA	Carbon Sequestration Rural Appraisal
CSREES	Cooperative State Research, Education, and Extension Service
CSU NREL	Colorado State University, Natural Resource Ecology Lab
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DCNR	Department of Conservation and Natural Resources
DOE	Department of Energy
DU	Ducks Unlimited
EA	Environmental Assessment
EBI	Environmental Benefits Index
ECP	Emergency Conservation Program
eFOTG	Internet-available Field Office Technical Guide
EI	Erodibility Index
EIS	Environmental Impact Statement
EO	Executive Orders

EPA	Environmental Protection Agency
ERS	Economic Research Service
ESA	Endangered Species Act
EQIP	Environmental Quality Incentives Program
2002 Farm Bill	Farm Security and Rural Investment Act of 2002
2008 Farm Bill	Food, Conservation, and Energy Act of 2008
FAPRI	Food and Agricultural Policy Research Institute, University of Missouri
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act of 1981
FR	Federal Register
FSA	Farm Service Agency
FWP	Farmable Wetlands Program
FY	Fiscal Year
GAO	Government Accounting Office
GRP	Grasslands Reserve Program
H.R.	House Report
HEL	Highly Erodible Lands
IRS	Internal Revenue Service
ISAC	Invasive Species Advisory Committee
JSWC	Journal of Soil and Water Conservation
LIP	Landowner Incentive Program
LVS	Land Value Survey
MCM	Mid-Contract Management
MLRA	Major Land Resource Area
NAAQS	National Ambient Air Quality Standards
NASS	National Agricultural Statistics Service
NECM	National Environmental Compliance Manager
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	Nitrogen Dioxide
N ₂ O	Nitrous Oxide
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPS	National Park Service
NRC	National Research Council
NRCS	Natural Resources Conservation Service
NRWA	National Rural Water Association
NRI	National Resources Inventory
O ₃	Ozone
OCRM	Ocean and Coastal Resource Management
OEP	Outreach and Education Program
OMB	Office of Management and Budget
PARC	Partners in Amphibian and Reptile Conservation
PAYGO	Pay-As-You-Go
Pb	Lead
PEA	Programmatic Environmental Assessment
PEIS	Programmatic Environmental Impact Statement
PL	Public Law
PM	Particulate Matter

PNS	Primary Nesting Season
PPA	Plant Protection Act
PPR	Prairie Pothole Region
PIP	Practice Incentive Payment
PTC	Production Tax Credit
RUSLE	Revised Universal Soil Loss Equation
ROD	Record of Decision
ROI	Region of Influence
SAFE	State Acres for Wildlife Enhancement
SAV	Submerged Aquatic Vegetation
SEC	State Environmental Coordinator
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Officer
SIP	Signing Incentive Payment
SO ₂	Sulfur Dioxide
SOC	Soil Organic Carbon
SOM	Soil Organic Matter
SSA	Sole Source Aquifer
STC	State Committee
THPO	Tribal Historic Preservation Officer
TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy
TSP	Technical Service Provider
TWS	The Wildlife Society
U.S.	United States
U.S.C.	U.S. Code
USACE	U.S. Army Corps of Engineers
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USDOI	U.S. Department of the Interior
USFWS	U.S. Fish and Wildlife Service
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
WEQ	Wind Erosion Equation
WHIP	Wildlife Habitat Incentive Program
WRP	Wetland Reserve Program
WSR	Wild and Scenic Rivers

1.0 PURPOSE AND NEED

1.1 INTRODUCTION

The United States Department of Agriculture (USDA) Commodity Credit Corporation (CCC) proposes to implement certain changes to the Conservation Reserve Program (CRP) enacted by the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill). USDA Farm Service Agency (FSA) administers the CRP on behalf of the CCC. This Supplemental Environmental Impact Statement (SEIS) is being prepared by FSA on behalf of CCC to examine the potential environmental consequences associated with implementing changes to CRP required by the 2008 Farm Bill (Public Law [PL] 110-246), and assist in developing new regulations. The SEIS is being completed in accordance with the National Environmental Policy Act (NEPA; PL 91-190, 42 United States Code [U.S.C.] 4321 et seq.). In 2003, a Programmatic Environmental Impact Statement (PEIS) was completed by FSA (FSA 2003) for CRP to evaluate the environmental consequences of implementing the Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) and a Record of Decision was published May 8, 2003 (68 Federal Register [FR] 24848-24854). The 2002 Farm Bill extended the authority for enrollment into CRP through 2007 and increased the enrollment cap to 39.2 million acres.

This SEIS tiers from the 2003 PEIS and, with certain exceptions, only evaluates those changed provisions in the 2008 Farm Bill governing CRP not previously addressed. The changes that will be assessed in this SEIS are:

- In general, the CRP purposes now explicitly include addressing issues raised by state, regional and national conservation initiatives (see 16 U.S.C. 3831(a)).
- The cropping history requirements are updated to four of six years from 2002 to 2007 (see 16 U.S.C. 3831(b)).
- The enrollment authority is set at 39.2 million acres through fiscal year (FY) 2009 and reduced to 32.0 million acres for fiscal years 2010, 2011, and 2012 (see 16 U.S.C. 3831(d)).
- Alfalfa and multiyear grasses and legumes in a rotation practice with an agricultural commodity may contribute towards meeting crop history requirements (see 16 U.S.C. 3831(g)).
- The authority is granted to exclude acreage enrolled under Continuous Signup and the Conservation Reserve Enhancement Program from the 25 percent cropland limitation, provided county government concurs (see 16 U.S.C.3831 (b)).
- CCC requires management by the participant throughout the contract term to implement the conservation plan (see 16 U.S.C 3843).
- CCC provides exceptions to general prohibitions (see 16 U.S.C. 3844) on use including:
 - Managed harvesting with appropriate vegetation management during named periods and with a payment reduction,
 - Managed harvesting for biomass with appropriate vegetation management during named periods and with a payment reduction,

- Grazing of invasive species with appropriate vegetation management during named periods and with a payment reduction, and
- Installation of wind turbines with appropriate vegetation management during named periods and with a payment reduction.
- Annual survey of dryland and cash rental rates by the National Agricultural Statistics Service (see 16 U.S.C. 3843(c)).
- Adds incentives for socially disadvantaged farmers and ranchers as well as limited resource farmers and ranchers and Indian tribes to participate in conservation programs (see 16 U.S.C. 3844).
- Development of habitat for native and managed pollinators and use of conservation practices that benefit them are encouraged for any conservation program (see 16 U.S.C. 3844).

The results of analyzing the alternatives to implement these provisions, along with comments received from agencies and the public, will be utilized to develop new rules and procedures for implementation. Aspects of the program, such as the Environmental Benefits Index, may be changed consistent with the Farm Bill to implement the provisions analyzed in the SEIS.

In December 2008 FSA completed a Programmatic Environmental Assessment and issued a Finding of No Significant Impact for 2008 Farm Bill provisions that were determined to be non-discretionary in nature and included provisions related to the Farmable Wetlands Program (FWP), tree thinning, and Adjusted Gross Income (AGI) (FSA 2008a).

The 2008 Farm Bill also included new incentives for beginning or socially disadvantaged farmers or ranchers to facilitate a transition of land enrolled in CRP from a retired or retiring owner or operator to return some or all of the land to agricultural production using sustainable grazing or crop production methods (see 16 U.S.C. 3835). In response to public comment and the limited potential for environmental or socioeconomic impacts, CCC and FSA have determined detailed analysis of this non-discretionary provision under NEPA is not required and have authorized implementation of this provision, effective immediately.

1.1.1 The Existing Conservation Reserve Program

The CRP was established by the Food Security Act of 1985 and farmland enrollment began in 1986. The program is governed by regulations published in Title 7, Code of Federal Regulations (CFR) Part 1410. CRP is a voluntary program that supports the implementation of long-term conservation measures designed to improve the quality of ground and surface waters, control soil erosion, and enhance wildlife habitat on environmentally sensitive agricultural land. In return, CCC provides participants with rental payments and cost-share assistance under contracts that extend from 10 to 15 years. Appendix A presents conservation practice descriptions by signup type and payment provisions. Technical support functions are provided by:

- USDA's Natural Resources Conservation Service (NRCS);
- USDA's Cooperative State Research, Education, and Extension Service (CSREES);
- United States Forest Service (USFS);

PURPOSE AND NEED

- State forestry agencies;
- Local soil and water conservation districts; and
- Other non-Federal providers of technical assistance.

Producers can enroll in the CRP using one of two procedures: (1) offer lands for General CRP sign-up enrollment only during specific sign-up periods and compete with other offers nationally, based upon the environmental benefits index (EBI); or (2) enroll environmentally desirable land to be devoted to certain conservation practices under CRP Continuous Sign-up provisions, if certain eligibility requirements are met or if a State and county are involved in a Conservation Reserve Enhancement Program (CREP), and the land qualifies. As of October 2009, a total of 31.12 million acres were enrolled in CRP (Figure 1.1-1) (FSA 2009a), down from 33.85 million acres in September 2009 (FSA 2009b).

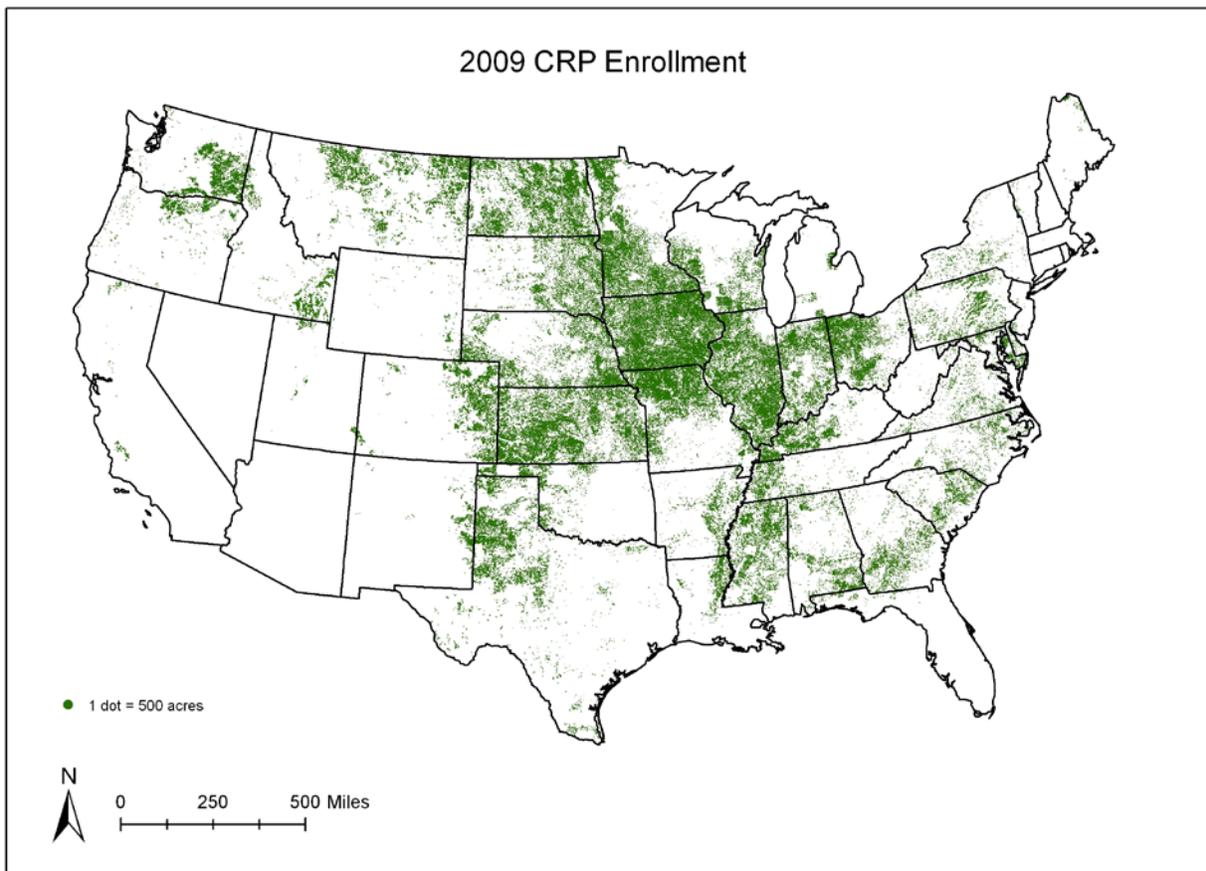


Figure 1.1-1. Lands Currently Enrolled in CRP

Prior to contract acceptance, a site-specific environmental evaluation is completed by NRCS or an approved Technical Service Provider (TSP) during the conservation planning process, in accordance with 2-CRP (Rev. 4) Amend. 12, Par. 236 B. This site-specific environmental evaluation (form NRCS-CPA-052 or State equivalent) is completed for all assistance provided

by NRCS in accordance with NRCS General Manual (Agency Policy) Section 410.3 and the Memorandum of Understanding (MOU) between NRCS and FSA on CRP technical assistance. This process is consistent with FSA's Environmental Quality and Related Environmental Concerns – Compliance with NEPA (7 CFR 799) and FSA's Handbook on Environmental Quality Programs for State and County Offices (1-EQ). FSA will review and/or complete the applicable sections of the NRCS-CPA-052 or State equivalent to document that FSA has completed any required consultation.

1.1.1.1 General Signup

The General Signup process enrolls lands in CRP through a competitive selection process. Eligible producers must have owned or operated the land offered for enrollment at least 12 months prior to close of the CRP sign-up period, with certain exceptions. Eligible land must be cropland that is planted or considered planted to an agricultural commodity four of the previous six years, and which is physically and legally capable of being planted in a normal manner to an agricultural commodity, or marginal pastureland that is suitable for use as a riparian buffer or other water quality purpose. An applicant must also demonstrate prior compliance with highly erodible land conservation and wetlands in accordance with Section 1212 of the Food Security Act of 1985. Additionally, the offered cropland must meet one of the following criteria:

- Have a weighted average Erodibility Index (EI) for the three predominant soils on the acreage offered of eight or higher (considered highly erodible land or HEL);
- Land currently enrolled in CRP scheduled to expire September 30 of the fiscal year the acreage is offered for enrollment; or
- Cropland located within a National- or State-designated Conservation Priority Area (CPA).

The CRP General Signup offers are ranked according to the Environmental Benefits Index (EBI). Each eligible offer is ranked in comparison to all other offers nationally and selections made from that ranking. The EBI ranks offers according to wildlife habitat benefits derived, degree of water quality improvements, reduced soil erosion, and improved air quality from reduced wind erosion, as well as costs to implement the conservation practices (CP), and their benefits likely to endure beyond the contract period. As of October 2009, 26.75 million acres were enrolled under General Signup (FSA 2009a).

1.1.1.2 Continuous Signup

Enrollment of environmentally desirable lands that are devoted to certain CPs can be enrolled at any time under Continuous Signup, provided the producer and the land meet eligibility requirements. The same producer and crop history eligibility criteria as stipulated for General Signup could be met by land proposed for Continuous Signup, but in addition, certain marginal pastureland that is suitable for a riparian buffer or similar water quality benefit are eligible lands. Land eligible for Continuous Signup therefore does not have to be highly erodible, be within a CPA, nor meet the crop history requirements if it is determined to be environmentally desirable, or is suitable for the following conservation practices:

PURPOSE AND NEED

- Riparian buffer;
- Wildlife habitat buffers
- Wetland buffers
- Filter strips
- Wetland restoration
- Grass waterways
- Field windbreaks
- Shelterbelts
- Living snow fences
- Contour grass strips
- Cross Wind Trap Strips
- Bottomland Timber
- Habitat Buffers for Upland Birds
- SAFE
- Salt tolerant vegetation
- Shallow water areas for wildlife

Land within an Environmental Protection Agency (EPA)-designated public wellhead area may also be eligible for Continuous Signup. Offers for Continuous Signup are automatically accepted provided the land and producer meet eligibility requirements; these offers are not subject to competition and the contracts are 10 to 15 years in duration. Likewise, national conservation initiatives enroll lands under Continuous Signup procedures. Currently, a total of 4.37 million acres are enrolled under Continuous Signup; of that, about 1.36 million acres are enrolled under either CREP or FWP (FSA 2009a).

Conservation Reserve Enhancement Program

The Conservation Reserve Enhancement Program (CREP) was first implemented in 1997 as a component of CRP. The CREP targets high-priority conservation issues of both local and national significance and focuses on impacts to water supplies, loss of critical habitat for threatened and endangered wildlife species, soil erosion, and reduced habitat for fish populations. A specific CREP project begins when a State, Indian tribe, local government, or local nongovernment entity identifies an agriculture-related environmental issue of State or national significance. These parties and FSA (on behalf of the CCC) enter into a legal CREP Agreement to address particular environmental issues and goals. Enrollment in a CREP is limited to specific geographic areas with acreage targets for enrollment under certain practices, and additional non-federal sponsored enrollment incentives. The appropriate level of NEPA compliance is completed prior to implementation of any CREP.

Currently, there are over 1.17 million CREP acres enrolled (FSA 2009a).

Farmable Wetlands Program

The Farmable Wetlands Program (FWP) is a voluntary program to restore up to one million acres of farmable wetlands and associated buffers by improving the land's hydrology and vegetation. Restoring wetlands reduces downstream flood damage, improves surface and groundwater quality, and recharges groundwater supplies. Wetlands provide vital habitat for migratory birds and many wildlife species, including threatened and endangered species, and provide recreational opportunities such as bird watching and hunting.

FWP is limited to no more than one million acres nationally, and no more than 100,000 acres in any one State. Eligible producers in all States can enroll on a Continuous Signup basis until:

- The national acreage limitation is reached;
- The State allocation of acres is reached; or
- CRP statutory authority is reached.

Contract duration is between 10 and 15 years. Land must meet one of the following to be eligible for enrollment:

- Farmed or converted wetlands that have been impacted by farming activities; and must be cropland planted to an agricultural commodity three of the last 10 most recent crop years and be physically and legally capable of being planted to an agricultural commodity;
- Include a constructed wetland to receive row-crop drainage flow for the purpose of removing nitrogen and other wetland functions;
- Devoted to commercial pond-raised aquaculture during any year from 2002 to 2007; or
- Any cropland that was cropped during at least three of 10 years between January 1, 1990, and December 31, 2002, which was subject to the natural overflow of a prairie wetland.

Enrolled acreage cannot exceed 40 acres for wetlands or constructed wetlands, and 20 contiguous acres for intermittently flooded prairie wetlands with 40 acres maximum per tract. The maximum enrolled acreage for wetland buffers is four times the size of the associated wetland practice. Likewise, participants must agree to restore the hydrology of the wetlands, establish vegetative cover, and agree to the prohibition of using the enrolled land for commercial purposes. Currently, 194,940 acres are enrolled under FWP (FSA 2009a).

The mandatory provisions for the FWP in the 2008 Farm Bill were analyzed in a Programmatic Environmental Assessment completed by FSA (FSA 2008a) and a Finding of No Significant Impact (FONSI) was published in the Federal Register on December 16, 2008 (73 FR 76331-76332) and therefore will not be addressed in this SEIS.

National Conservation Priority Areas

National Conservation Priority Areas (CPA) are identified and approved jointly between NRCS and FSA through consultation with national partners (NRCS 2009a). CPA designations are based on a judgment that retiring agricultural lands in specific areas offers the potential for

significant water and air quality or wildlife habitat benefits. Enrolling these lands helps achieve objectives of other Federal or State environmental laws (USDA 1997). There are currently five national CPAs, as well as State-designated CPAs that target three resource areas: water quality, air quality, and wildlife habitat (Table 1.1-1) (FSA 2008b).

Table 1.1-1. Conservation Priority Areas and Enrollment

CPA	2008 Enrollment (acres)
Chesapeake Bay	315,661
Great Lakes	564,710
Long Island Sound	210
Longleaf Pine	271,209
Prairie Pothole	7,719,748
State-designated	9,816,354
Total	18,687,892

Source: FSA 2008b

All cropland within the Longleaf Pine Region is not automatically eligible for enrollment; cropland must also be suitable for longleaf pine, and planted or devoted to longleaf pine.

National Conservation Initiatives

National Conservation Initiatives are conservation projects given priority by the Secretary for enrollment under Continuous Signup (Table 1.1-2). As of October 2009, there are 887,667 acres enrolled under National Conservation Initiative CPs (FSA 2009a). The acres are counted under Continuous Sign-up, non-CREP enrollment.

1.1.2 Conservation Planning and Guidance

Conservation Reserve Program participants must maintain the CRP cover in accordance with their approved Conservation Plan to control erosion, noxious weeds, rodents, insects, etc. An approved Conservation Plan is required prior to contract execution. The approved plan is developed by the participant and in coordination with the local NRCS representative or authorized Technical Service Provider (TSP). The NRCS or the TSP is responsible for completing the environmental evaluation, technical leadership, and technical concurrence on conservation plans and any revisions. Similarly, they are responsible for collecting the data needed for FSA to ensure NEPA, National Historic Preservation Act (NHPA), Endangered Species Act (ESA), and other related laws, regulations, and executive orders are complied with.

Once an offer has been accepted, a designated NRCS conservationist will work with the participant to develop a Conservation Plan. The designated conservationist will also coordinate with other appropriate agencies. Conservation planning, practice implementation, and certification services of private businesses and consultants, the TSP, and Federal, State, and local government agencies (i.e., wildlife, forestry, and water quality agencies) may also be used.

Table 1.1-2. National Conservation Initiatives

Initiative	Current Enrollment Goals (acres)	Purpose
Flood-plain wetlands (CP23)	500,000	The purpose of this practice is to restore the functions and values of wetland ecosystems that have been devoted to agricultural use. The level of restoration of the wetland ecosystem shall be determined by the producer in consultation with NRCS or TSP.
Non-floodplain and playa wetlands (CP23a)	250,000	Provides habitat for migratory waterfowl during migration and winter, benefit many other species of birds, animals, and plants, recharge the Ogallala aquifer, one of the world's largest aquifers that lies beneath Texas, Nebraska, Oklahoma, Kansas, and Colorado; and recharge groundwater supplies critical for drinking water, irrigation, and wildlife.
Bottomland hardwood trees (CP31)	500,000	Establishes and provides for the long-term viability of a bottomland hardwood stand of trees that will: <ul style="list-style-type: none"> • control sheet, rill, scour, and other erosion; • reduce water, air, or land pollution ; • restore and enhance the natural and beneficial functions of wetlands; • promote carbon sequestration; and • restore and connect wildlife habitat.
Upland Bird Habitat Buffers (CP33)	250,000	Provides food and cover for quail and upland birds in cropland areas. Secondary benefits may include reducing soil erosion from wind and water, increasing soil and water quality, protecting and enhancing the on-farm ecosystem.
Longleaf Pine Plantings (CP36)	250,000	The primary purpose of CP36 is to re-establish longleaf pine stands at densities that benefit wildlife species and protect water quality.
Prairie Pothole Duck Nesting Habitat (CP37)	100,000	This practice is to enhance duck nesting habitat on the most duck-productive areas of Iowa, Minnesota, Montana, North Dakota, and South Dakota to restore the functions and values of wetland ecosystems that have been devoted to agricultural use. The level of restoration of the wetland ecosystem shall be determined by the producer in consultation with FSA and NRCS or TSP.
State Acres for Wildlife Enhancement (SAFE) (CP38)	500,000	Producers create habitat that is beneficial to high-priority wildlife species. This may involve planting trees, grasses, forbs, or other species that helps restore or improve wildlife habitat. Specific SAFE conservation practices are set forth in each state's SAFE project.

The approved Conservation Plan must:

- contain all the practices necessary to successfully establish and maintain the vegetative cover on all potential CRP acres, including seeding mix design, planting densities and layout, water supply or drainage, thinning schedules, and the like;

PURPOSE AND NEED

- be technically adequate to meet the objectives of the CRP;
- incorporate all Federal, State, and local permit requirements for construction use of agricultural chemicals such as fertilizer, herbicides and pesticides;
- be reviewed and approved by the Conservation District;
- ensure the conservation cover is not disturbed during the Primary Nesting Season (PNS) as determined by the State Committee (STC) in consultation with the State Technical Committee;
- contain CP22 (Riparian Buffer) specific requirements, as required; and
- incorporate and adhere to county specific guidance from the NRCS Conservation Practice (CP) Standards, identified in the internet-available Field Office Technical Guide (eFOTG), and in State or county specific technical notes.

In addition, the Conservation Plan could include a grazing, haying, or biomass harvest plan meeting national criteria and designed for the specific lands proposed for such use, and would also include any best management practices (BMP) or measures to be employed to avoid, minimize, or mitigate impacts to those resources specific to the lands being proposed for enrollment.

The qualified conservationist will use information from ecological site descriptions, trend determinations, similarity index determinations, assessments of the health of the conservation lands and other information (e.g., climatic conditions and appropriate stocking rate) to assist the CRP participant design a plan for harvesting activities on authorized CPs that would not defeat the purposes of the CRP contract. These plans require several site-specific inventories, measures to meet specific objectives, identification of methods and BMPs to control or mitigate impacts, and contingency and monitoring plans. A resource assessment must be conducted that identifies the resources (vegetative cover, water sources, soils) present and their condition, existing structures (fences, natural barriers), and facilities (location of gates, watering areas), accompanied with a site plan as appropriate. An assessment of forage suitability must be completed for grazing of any kind, identifying the key forage species and associated acreage. The forage quantity and quality will be estimated and documented, and if grazing is proposed, the type of livestock and ruminant wildlife (deer, elk) identified, and the estimated stocking rate calculated in accordance with the NRCS eFOTG. Animal Inventory will document the number and type of ruminant wildlife estimated to utilize the area proposed for grazing, and the livestock that would be grazing. If resource conditions do not support the maximum rates of area or forage removal allowed for harvest, then an appropriate lower rate for the location would be calculated.

Other NRCS Conservation Practice (CP) Standards governing harvesting must be adhered to and specific guidance, including mitigation measures, incorporated into the Conservation Plan. Practice Code 511 Forage Harvest Management stipulates criteria to improve or maintain stand life, plant vigor, and plant diversity. For example, vegetation must be cut only at a stage of maturity or harvest interval range that will provide adequate food reserves and/or basal or auxiliary tillers or buds for regrowth and/or reproduction to occur without loss of plant vigor. Further, re-seeding annuals must only be cut or harvested at a stage of maturity and frequency

that ensures production of viable seed and ample carryover of hard seed to maintain desired plant stand diversity. Minimum stubble heights for vegetation remaining after harvest are established for every county and are species specific; however, if particular plants require that more of the plant remain (e.g., warm season grasses), then the appropriate minimum will be stipulated in the Conservation Plan (NRCS 2003a).

The planned or allowable degree of use for browse species differs from grass species. The degree of use applies to the annual growth of twigs and leaves within reach of animals. If deciduous browse species are used during the dormant season, the degree of use suggested applies to annual twig growth only. Guidance on the suitability of forage by species grown in dryland conditions includes estimates of the plant species' productivity, the suitability as forage, minimum years a plant must be established prior to suitability for forage, fertilizer needs, soil acidity needs, and drought tolerance. In accordance with current managed haying and grazing provisions, authorized CPs must be established, at a minimum, one year prior to scheduling these activities.

Management components of the grazing plan specify the schedule and number of days when managed haying and grazing can be conducted. Criteria that maintain or improve water quality and quantity (other than limiting grazing to within no more than 120 feet of a permanent surface water body) include: (1) maintain adequate ground cover and plant density to ensure adequate filtering capacity of the vegetation; and (2) employ BMPs to minimize concentrated livestock areas to ensure animal offal is dispersed. The latter would include siting any supplemental livestock feeding, handling, and watering facilities and gates in such a manner to ensure adequate dispersion of animals. These actions would also assist in reducing potential soil erosion and compaction which could lead to excess runoff. To maintain soil condition, measures would be stipulated in the plan to ensure adequate ground cover, litter, and canopy to maintain or improve infiltration and organic content. Fencing must be used to control grazing animals' access to other areas adjacent to the grazed field and protect permanent surface water bodies. Fencing designed in accordance with Practice Code 382 will minimize impacts to wildlife while serving its purpose to confine livestock. These latter measures include altering the height of the top and bottom wires and making them smooth rather than barbed. To protect forbs and legumes that benefit native pollinators and other wildlife and that provide insect food sources for grassland nesting birds, spraying or other control of noxious weeds would be done on a "spot treatment" basis in accordance with NRCS Practice Code 595. All methods of plant and insect pest management must comply with Federal, State, and local regulations.

In summary, development of Conservation Plans in accordance with approved NRCS and FSA conservation practices, standards, and guidelines that are designed for specific enrolled lands are a critical tool facilitating the successful establishment and maintenance of conservation practices that fulfill their intended purpose and the goals of the CRP participant.

1.1.3 Contract Maintenance, Management, and Fire Prevention

Once enrolled and established, CRP participants must maintain the conservation cover in accordance with their Conservation Plan to control erosion, noxious weeds, rodents, insects, and other pests, without cost share, except as noted below, for the life of the CRP contract. Maintenance of the CRP cover is the responsibility of the participant. The timing and duration of

specific maintenance activities are developed in consultation with the NRCS or a TSP and may include prescribed burning, disking, or spraying herbicides and insecticides. Periodic mowing and mowing for cosmetic purposes is prohibited. In 2004, cost share of up to 50 percent was permitted for mid-contract management (MCM) activities established by State Technical Committees to more effectively maintain and enhance CRP covers as they age (Burger 2005). These MCM activities include prescribed burning, tree thinning, disking, interseeding, mowing, and herbicidal control of invasive species. Mid-contract management is voluntary for contracts entered into prior to 2004 but is mandatory for contracts executed after that date. Of the currently active contracts, 480,181 were executed prior to 2004, and 246,738 from 2004 until the present (FSA 2009a). Mid-contract management activities must be established in the Conservation Plan and designed to ensure vegetation and wildlife benefits, while providing protection of soil and water resources. Management activities are site-specific and generally must occur before the end of year six of a 10-year contract, or the end of year nine of a 15-year contract, but generally may not occur in the last three years of a contract. Additional management may generally occur up to year eight of a 10-year contract or year 13 of a 15-year contract, although exceptions are made for specific CPs. For example, in Mississippi, prescribed burns in newly established longleaf pine CPs are recommended twice during a 10-year contract and three times during a 15-year contract, with the first burn scheduled in contract year one to four, the second from contract year five to nine, and the last in year 10 to 14 of a 15-year contract (NRCS 2007a). Appropriate management is developed with NRCS or a TSP as applicable to the installed practice. Management activities are generally prohibited during the PNS.

Participants must also manage CRP land for potential fire hazards. Firebreaks may be installed around CRP and must meet NRCS Practice Code 394 standards and be included in the Conservation Plan. Barren firebreaks are only allowed around high-risk areas such as transportation corridors, rural communities, or adjacent farmsteads.

1.1.3.1 Harvesting of CRP

Methods to maintain CRP cover include various forms of haying and grazing. The specific CP in use determines which haying and grazing provision is authorized. For all but limited grazing, haying and grazing activities shall not occur during the primary nesting or brood rearing season.

Managed Haying and Grazing, Including Biomass: Managed haying and grazing is allowed on CRP lands in certain CPs in order to improve the quality and performance of the CRP cover (Appendix B). Prior to implementing managed haying and grazing, a producer must submit a request to the local FSA office and obtain a modified conservation plan. The CP must be fully established for at least one year before managed haying and grazing can commence and is not allowed for land enrolled in useful life easements or within 120 feet of a permanent body of water. The allowable frequency of haying and grazing varies by State, but can be no more often than once every three years (Appendix C). Managed haying and grazing cannot occur on the same acreage in the same year and cannot be conducted on the same acreage used for emergency haying and grazing in the same year. A producer implementing managed haying and grazing is assessed a 25 percent payment reduction of their annual rental rate for the year in which haying or grazing occurred based on the number of acres actually hayed or grazed.

Managed haying is allowed on 50 percent of a CRP field or contiguous fields for a single period of up to 90 days. Managed grazing is allowed on 100 percent of a field at up to 75 percent of the stocking rate established by the NRCS for a single period of 120 days or two 60-day periods. Managed haying and grazing must be completed by September 30.

Emergency Haying and Grazing: Emergency haying and grazing is granted on CRP lands to provide relief to ranchers in areas affected by drought or other natural disaster to avoid culling of herds or livestock losses. Eligibility is based on evidence submitted by County Committees (COC) that the county is suffering from a 40 percent or greater loss of normal hay and pasture production due to drought or because excessive moisture conditions and/or precipitation levels indicate an average of 140 percent or greater increase in normal precipitation during the four most recent consecutive months, plus the days in the current month before the date of request. The COC must submit written monthly reviews of conditions in the county and the basis used to determine whether continued haying or grazing is warranted. Emergency haying and grazing must end by September 30, unless determined otherwise, as noted below. Emergency haying and grazing generally may not be approved during the PNS; however, it may be approved by the USDA under extreme conditions. Emergency haying and grazing is only authorized on the same CPs that are eligible for managed haying and grazing, requires a prior written request by the applicant, and requires modification of the Conservation Plan to include haying or grazing. The modification must be site-specific and reflect the local wildlife needs and concerns. Further restrictions apply as follows:

- designation for emergency grazing may be for up to 90 calendar days, not to extend beyond September 30;
- one 30-calendar-day extension may be authorized, not to extend beyond September 30;
- designation for emergency haying may be for up to 60 calendar days, not to extend beyond September 30;
- emergency haying extensions are not authorized;
- emergency grazing extension up to 15 calendar days may be authorized because of flooding, not to extend beyond September 30;
- emergency grazing shall leave at least 25 percent of each field or contiguous CRP fields ungrazed for wildlife, or graze not more than 75 percent of the stocking rate determined by NRCS or TSP;
- shall leave at least 50 percent of each field or contiguous fields unhayed for wildlife;
- shall not hay or graze the same acreage; and
- haying is limited to one cutting.

Acreage ineligible for emergency haying or grazing include useful life easements, any land within 120 feet of a stream or other permanent water body, and any land enrolled in a CP not authorized for emergency haying and grazing. At least 25 percent of the contracts authorized for emergency haying or grazing shall be spot checked by the COC 10 days prior to the end date for the authorized activity. A 25 percent reduction in annual rental payment based upon actual acreage hayed or grazed is assessed. Emergency haying and grazing may occur any year

before or after managed haying and grazing, and may occur several years in a row. Finally, managed haying and grazing may not be undertaken on acreage that was harvested under emergency provisions until the established frequency interval under managed provisions expires.

Limited Grazing: Limited grazing is allowed in areas where kudzu has infested CRP acreage. Grazing is not to exceed 30 calendar days between May 1 and September 1 and is not to occur for more than a total of three consecutive years over the life of the contract. A prorated payment reduction based on 50 percent of the CRP annual rental payment, and the number of days and acres grazed, is taken the year the acreage is grazed. Reductions are not taken if the livestock used to graze the land do not belong to the participant and the participant receives no compensation.

Incidental Grazing: Incidental grazing (gleaning) is approved on certain CPs for the gleaning of crop residue in a field or before the harvest of a small grain (Appendix B). Incidental grazing is only authorized if the CRP acreage to be grazed is not separated from the cropland by a fence. Grazing must occur after the participant harvests crops from within surrounding fields or during the dormant period of the small grain crop intended for harvest, and in no case shall extend beyond two months after grazing is initiated. The CRP participant will accept a 25 percent annual rental payment reduction for the grazed acreage.

Permissive Grazing: Permissive grazing is authorized for gleaning of crop residue on CRP if the acreage is in the first year, was devoted to an agricultural commodity prior to enrollment, mechanical harvesting was not completed prior to October 1 when the CRP contract became effective, and the gleaning grazing would not delay installation of the conservation practice. The producer must also provide adequate cover to prevent soil erosion, must pay for a field visit to determine if gleaning grazing would be authorized, and must remove livestock within two months after gleaning grazing begins.

Pine Straw Harvest: Current provisions do not allow for the harvesting of pine straw from lands enrolled in CRP. Authorization to harvest pine straw from certain CPs is currently being considered by FSA and has been assessed in a Programmatic Environmental Assessment (PEA). This practice would likely be limited to 10 southeastern States (Alabama, Arkansas, Florida, Georgia, Louisiana, North Carolina, Mississippi, South Carolina, Tennessee, and Virginia) on pine-related CPs that include loblolly (*Pinus taeda*), slash (*P. elliotti*) or longleaf pine (*P. palustris*).

1.1.3.2 *Wind Turbines*

The installation of wind turbines, windmills, wind monitoring devices, or other wind-powered generation equipment may be installed on CRP acreage as authorized by the COC on a case-by-case basis. Up to five acres of wind turbines per contract may be approved by the COC provided all environmental impacts have been considered in the development of the Conservation Plan. A site-specific environmental review shall be conducted using form FSA-850. Requests for authority of contracts over five acres must be forwarded to the Conservation and Environmental Programs Division (CEPD) through the State FSA Office. The five acre threshold is a cumulative figure of the total square footage of land area devoted to the footprint

of the wind device and any required firebreak, but does not include access roads, transformers, and other ancillary equipment.

1.1.4 CRP Payments

In return for establishing the conservation practice, FSA provides CRP participants with annual rental payments and cost share assistance (Table 1.1-3). Rental payments are based on the relative productivity of the soils within each county and the average dryland cash rent or its equivalent over a three year period. The soil productivity adjustment is based on NRCS surveys of soil productivity characteristics. Requested rental payments are screened against a soil productivity-adjusted estimate of the rent that could be paid to comparable local cropland (Economic Research Service [ERS] 2003). Maximum CRP rental rates are determined prior to enrollment; however, an offerer may request a lower rate to increase the competitiveness of their offer. Maintenance incentive payments of up to five dollars per-acre per-year are made for performance of certain maintenance tasks. In addition, FSA provides up to 50 percent cost-share assistance for establishment of approved conservation cover on eligible cropland (Table 1.1-4).

Table 1.1-3. Annual Rental Payments (as of October 2009)

Sign-up Type	Annual Rentals (\$millions)	Payments (\$/acre)
General	\$1,194	\$44.64
Continuous		
Non-CREP	\$275	\$91.53
CREP	\$151	\$129.29
Farmable Wetland	\$23	\$117.27
Total Continuous	\$449	\$102.77
Total CRP	\$1,643	\$52.89

Source: FSA 2009a

Additional incentives are also available for Continuous Signup enrollment (Table 1.1-4). An additional incentive payment of up to 20 percent of the annual payment may be provided for establishment of field windbreaks, grass waterways, filter strips, and riparian buffers. If land is located within EPA-designated wellhead protection areas, an additional 10 percent may be added to the soil rental rate. An upfront Signing Incentive Payment (SIP) of up to \$100 per acre is offered for enrollment into certain practices (Appendix A). Likewise, a Practice Incentive Payment (PIP) equal to 40 percent of eligible installation costs may also be paid for enrollment into certain practices (Appendix A). Both SIPs and PIPs are paid after contract approval and all eligibility requirements have been satisfied. No more than 50 percent of the cost of establishing a conservation cover on eligible cropland may be paid by FSA for an approved practice. Prior to April 2008, maintenance incentives were authorized for CRP contracts. Beginning in April 2008, most incentives were reduced to \$2 per acre. As of October 1, 2009, maintenance incentives on CRP contracts approved on or after this date are reduced by \$2; therefore, all CPs that previously had a \$2 per acre incentive are reduced to zero. Currently, only seven CPs are authorized for maintenance incentive payments (Appendix A). For CREP projects, additional

establishment, maintenance, and incentive payments may be offered by States or private partners participating in sponsoring the CREP.

Table 1.1-4. Conservation Reserve Program Outlays (\$ thousands)¹

Payment Category	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
Annual Rental Payments	\$1,572,601	\$1,598,276	\$1,630,585	\$1,666,462	\$1,727,408	\$1,785,767
Signing Incentive Payments	\$39,612	\$27,996	\$25,304	\$32,577	\$18,366	\$25,164
Practice Incentive Payments	\$60,369	\$55,368	\$49,238	\$49,573	\$39,026	\$43,246
Haying/Grazing Adjustments	\$2,001 ²	(\$10,465)	(\$11,316)	(\$8,545)	(\$9,542)	(\$12,147)
Wetland Restoration Incentive	\$989	\$1,363	\$1,289	\$1,105	\$1,030	\$932
Cost-Share Payments	\$98,951	\$116,966	\$93,235	\$100,096	\$89,844	\$84,238
Total	\$1,774,523	\$1,789,504	\$1,788,334	\$1,841,268	\$1,866,131	\$1,927,200

Source: FSA 2009c

Notes: 1. Not including technical assistance.

2. Payment reductions made in FY 2002 were refunded.

1.1.5 Conservation Program Targeting

Targeting is a practice increasingly used to improve program performance by directing program resources to lands where greater environmental benefit will be generated for a given expenditure. Perceptions of the benefits, and the relative importance of one natural resource in comparison to another, change over time. When CRP was first launched in 1985, the initial focus of the program was reduction in soil erosion and commodity price support by taking marginal lands out of agricultural production and establishing long-term resource conserving covers. The 1990 Farm Bill expanded the program's environmental objectives to include wildlife and water quality values (Hansen and Hellerstein 2006). These became equal with soil quality through adjusting the EBI scoring criteria for General Signup, and in changing market conditions, the importance of the program for price support lessened. Several provisions enacted by the 2008 Farm Bill impact the implementation of CRP either through mandatory targeting, or in giving the CCC and FSA discretion in how the provisions are implemented. The following discussion introduces the role of targeting and how it is accomplished in CRP. Section 3.11 has a more detailed discussion of the impact of economics on targeting.

The goal of targeting is to direct program resources to lands where the greatest benefit is realized for a given expenditure or in which specific environmental goals are achieved for the least cost. Conservation programs can be targeted in several ways, from simple to highly selective (Hansen 2007). Simple targeting involves a "broad brush" approach that targets entire

regions (e.g., Chesapeake Bay watershed); whereas highly selective targets specific fields or farms that provide the greatest environmental benefit.

Agencies use targeting in order to choose which land parcels offered by farmers and land owners are accepted for enrollment into conservation programs (Hansen and Hellerstein 2006). It is a means for program managers to choose which offers to accept when more producers offer to participate in conservation programs than the program budget or authorized acreage allows. In this era of reducing CRP enrollment from the 39.2 million acre level authorized by the Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) to the maximum 32 million acre level authorized by the 2008 Farm Bill, there are fewer acres to apportion and selection is potentially more competitive. Targeting uses information on costs, operators, and resource characteristics to choose which offers best meet program goals (*Ibid.*). Targeting methods can be designed to accomplish a range of program goals and include maximizing the reduction of soil erosion, minimizing costs while reaching minimum standards, and maximizing environmental improvements relative to costs. Targeting characteristics include:

- *Eligibility criteria*, which are standards that farms, fields, or households must meet in order to be eligible. Prior cropping history, the current use of conservation practices, and location within a sensitive ecosystem or watershed are examples of eligibility criteria.
- The use of *incentives* encourages producers to enroll in conservation programs.
- *Ranking mechanisms* are used to rank applicants by assigning scores based on multiple environmental criteria (e.g., expected reduction of soil erosion, improvement of wildlife habitat, and improvement of water quality). Scores can also include costs, with higher costs decreasing scores.

Targeting mechanisms further the ability of conservation programs to deliver greater environmental benefits by selecting participants based on factors that reflect program goals.

Agencies use an index to assign “weight” to multiple environmental and cost objectives based on the perceived relative importance of the objective (Cattaneo *et al.* 2006). Multi-objective programs are designed to account for society’s values of both the positive and negative results of the program’s objectives. Objective weights can be changed based on new information about heightened public interest in specific objectives. Index scores are used to rank enrollment applications. Modeling has shown that small changes in index weights make relatively little difference in outcomes, whereas larger changes will generate larger impacts (*Ibid.*). If the increase of a particular objective is large enough, loss of benefits related to another objective may be lost. For example, if the wildlife habitat weight doubled, erosion reduction benefits could decline by as much as 15 percent. Moreover, the shift created by large changes in index weights signifies that as long as outcomes reflect public opinion there will be little opportunity to fine tune index weights.

The EBI is the targeting method used for General Signup selection of participants in CRP. The EBI includes six factors, five of which are environmental and resource concerns, and one is a contract cost factor that includes annual rental payments and cost-share payments (Hansen and Hellerstein 2006). Targeting efficiency is improved by addressing multiple environmental concerns. The EBI uses economic models to address local concerns by estimating impacts on

affected populations (e.g., the water-quality benefit score assigns higher rankings to offers in which more people would be affected by changes to groundwater quality), and also uses biophysical models to estimate both sheet and rill erosion (using the Revised Universal Soil Loss Equation [RUSLE]) and wind erosion (using the Wind Erosion Equation [WEQ]) (*Ibid.*). Each parcel of land offered is scored based on the EBI; those parcels with the highest score are accepted. As a voluntary program, the willingness of producers to participate is a determinant of program results (Cattaneo *et al.* 2006). The willingness of a producer to submit an offer depends on things such as the likelihood of being picked, which is dependent on the weights assigned to the objectives. The EBI approach gives producers flexibility to decide the most cost-effective strategy for acceptance into General CRP; producers can choose the parcel offered, cover type, program payment rate, and other factors that influence the offered parcel's EBI (Hansen and Hellerstein 2006).

Integral with the concept of targeting is measuring the benefits derived from program implementation. The USDA has undertaken significant efforts toward this end by co-sponsoring the Conservation Effects Assessment Project (CEAP) with the aim of managing agricultural landscapes for environmental quality (NRCS 2006a). Started in 2003, CEAP is a multi-agency and non-governmental organization effort with a goal of establishing a scientific understanding and assessing the effects and benefits of conservation practices for reporting at the national and regional levels (Duriancik *et al.* 2008). The program's three primary goals are to compile bibliographies of state of the art literature concerning conservation practices and natural resources, conduct watershed assessment studies quantifying water and soil quality impacts of local scale conservation practices; and conduct national and regional studies to estimate the environmental benefits of conservation practices while identifying any remaining needs. Conservation practices investigated include conservation buffers; erosion control; wetlands conservation and restoration; establishment of wildlife habitat; and management of grazing land, tillage, irrigation water, nutrients, and pests. Results from CEAP are used to report the progress of conservation programs, assist in discussions on conservation policy development, guide program implementation, and assist farmers and ranchers in making informed decisions.

1.1.6 Pay-As-You-Go (PAYGO) and CRP

Pay-As-You-Go (PAYGO) requires all mandatory spending or receipts to be budget neutral. The Obama administration's Office of Management and Budget (OMB) supports mandatory spending controls and extended and modified the PAYGO rule through the FY 2011 budget submission (OMB 2009). Pay-As-You-Go, then, has the potential to effect program priorities and services.

Mandatory spending, also known as direct spending, is authorized by permanent laws and is principally used to fund entitlement programs such as Social Security, Medicare, Medicaid, Federal employee retirement, etc. It also applies when budget authority is provided in annual appropriations acts for certain programs that entitles beneficiaries to receive payment or obligates the Government to make payment. Administrative PAYGO budget enforcement does not apply to discretionary spending, which is provided in annual appropriations acts that budget for salaries and other operating expenses of Government agencies; nor does it address changes in direct spending, or revenue levels under current law as a result of changes to the

economy, demographic trends, and other factors (OMB 2009). Since spending contained within the Farm Bill is authorized by permanent law, it is subject to the provisions of PAYGO.

The requirements provided to the Executive Branch, departments and agencies for PAYGO were detailed in an OMB memorandum (OMB 2005), including:

- Any proposed discretionary agency administrative action that increases mandatory spending must also have proposal(s) that would reduce mandatory spending at comparable levels.
- Budget submissions to OMB shall include all administrative actions planned or anticipated that are expected to increase mandatory spending for the fiscal year of the budget, or any subsequent fiscal year. Discretionary administrative actions must have offsets identified as specified above.

Pay-As-You-Go thus can impact FSA programs, including conservation programs, as OMB may reallocate funding in order to achieve deficit reduction, potentially leaving some FSA initiatives unfunded, or reducing services to program participants. Similarly, in order to maintain budget neutrality within the agency, it may be necessary at times to reduce or forego funding for some programs or initiatives in order to fund others. A recent example of the decisions that must be made in response to PAYGO is the lowered CRP maintenance payments effective October 1, 2009. The savings realized are used to offset the costs of offering contract extensions on certain expiring contracts, rather than having a General Signup to maintain total program acreage close to the 32 million acre level in FY 2010.

1.2 PURPOSE AND NEED INCLUDING THE PROPOSED ACTION

On June 18, 2008, the 2008 Farm Bill was enacted into law. The 2008 Farm Bill, as amended, will govern the majority of Federal agricultural and related activities for the next five years, including land conservation practices such as CRP. The purpose of the Proposed Action is to establish the basis for regulations to implement applicable changes to CRP as specified in the 2008 Farm Bill. The need for the Proposed Action is to fulfill the FSA responsibility, as assigned by the Secretary of Agriculture (hereinafter referred to as Secretary), to administer certain conservation provisions of the 2008 Farm Bill.

1.3 THE NEPA PROCESS AND CRP SEIS

The NEPA process begins when an agency develops a proposal to take an action that addresses a need. A Federal agency must prepare an EIS if it is proposing a major federal action that may significantly affect the quality of the natural or human environment. The first step in this EIS process is publication of a Notice of Intent (NOI), stating the FSA's intention on behalf of the CCC to prepare a SEIS. For the CRP SEIS, the NOI was published in the Federal Register on September 3, 2009 (74 FR 45606-45607). The NOI provides a brief description of the proposed action and possible alternatives. It also describes the agency's proposed scoping process, including any meetings and how the public can get involved. After this notice, FSA began gathering public and agency comments (including those received at public meetings) relevant for alternative development and identification of environmental concerns. At the

conclusion of the public meetings, a Draft SEIS is completed by FSA, taking into account the comments received during scoping, which is then published for public and agency review and comment. The Environmental Protection Agency (EPA) is the agency responsible for publishing a Notice of Availability (NOA) in the Federal Register informing members of the public that the draft CRP SEIS is available for a 45-day comment period.

When the public comment period on the Draft SEIS is finished, FSA analyzes comments, conducts further analyses as necessary in response to comments received, and prepares the Final SEIS. In the Final SEIS, FSA is responsible for responding to substantive comments received from other government agencies and members of the public.

Once the Final SEIS is complete a NOA will be published by EPA in the Federal Register and comments will be solicited from the public and government agencies for a 30-day period. Comments received will once again be reviewed by FSA and any substantive comments considered in the Record of Decision (ROD). The ROD states CCC's decision whether to implement the proposed action, provides a basis for the decision, and how implementation will be accomplished. The basis for the decision includes a description of the alternatives considered, including the environmentally preferred alternative, a description of the impacts identified by the EIS, and required mitigation measures that would be implemented. In the ROD, CCC will discuss all factors considered in arriving at their decision, including those of national policy.

1.3.1 USDA NEPA Guidance/Authority

This SEIS is prepared to satisfy the requirement of the NEPA (PL 91-190, 42 U.S. C. 4321 et seq.); implementing regulations adopted by the Council on Environmental Quality (CEQ) (40 CFR 1500-1508); and FSA implementing regulations, Environmental Quality and Related Environmental Concerns-Compliance with NEPA (7 CFR 799). According to CEQ guidance, the primary purpose of an environmental impact statement (EIS) is to "provide full and fair discussion of significant environmental impacts and shall inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment" (40 CFR 1502.4). A Federal agency must prepare an EIS when a proposed action or program constitutes a major Federal action that may have significant impacts to the natural or human environment (40 CFR 1508.18).

1.3.2 Resource Specific Guidance

A variety of laws, regulations, and Executive Orders (EOs) apply to actions undertaken by Federal agencies and form the basis of the analysis prepared in this SEIS. These include but are not limited to:

- National Historic Preservation Act
- Endangered Species Act
- Clean Water Act
- Clean Air Act

- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations
- EO 11988, Floodplain Management
- EO 11990, Protection of Wetlands
- Coastal Zone Management Act

1.4 RESOURCES ELIMINATED FROM DETAILED STUDY

Council on Environmental Quality regulations (§1501.7 (a) (3)) indicate that the lead agency shall identify and eliminate, from detailed study, the issues which are not important or which have been covered by prior environmental review, narrowing the discussion of these issues in the document to a brief presentation of why they would not have a dramatic effect on the human or natural environment. Issues eliminated from detailed analysis in this SEIS include:

Noise—Implementing the Proposed Action would not permanently increase ambient noise levels at or adjacent to CRP lands. Noise from heavy equipment is common on agricultural lands that could be enrolled in CRP. The potential for increased noise levels associated with implementing CPs would be minor, temporary, localized, and would cease once implementation of the approved CPs was completed.

Other Protected Resources—The lands eligible for CRP are privately owned; therefore, there is no potential for impacts to National Natural Landmarks, Federal Wilderness or Wilderness Study Areas, National or State parks, or Federal or State wildlife refuges. These other protected resources have therefore been eliminated from further analysis.

Wild and Scenic Rivers—This SEIS does not address specific locations to be enrolled in CRP at this time; therefore, designated Wild and Scenic Rivers (WSR) are not analyzed. Farm Service Agency would conduct site-specific environmental evaluations prior to approval of CRP enrollment. If a WSR is within the project area, or the project has the potential to affect a WSR, FSA initiates consultation with the appropriate river-administering agency (Bureau of Land Management [BLM], National Park Service [NPS], United States [U.S.] Fish and Wildlife Service [USFWS], and USFS).

Cultural Resources—This SEIS does not address specific locations to be enrolled in CRP at this time; therefore, specific cultural resources are not analyzed in this SEIS. As with all CRP land enrollment, site-specific environmental evaluations would be conducted prior to approval of any CRP contracts during the conservation planning process. The likely impact of CRP enrollment on cultural resources would not be greater than expected for normal agricultural practice since the majority of the lands in the program are required to have been planted or considered planted to an agricultural commodity during four of the six years from 2002-2007.

Prime and Unique Farmland—The majority of lands eligible for enrollment in CRP are highly erodible or are marginal pastureland, which do not meet the definition of Prime and Unique Farmland as provided by the Farmland Protection Policy Act of 1981 (FPPA), and is therefore eliminated from further analysis.

1.5 OTHER RELATED ACTIONS, FEDERAL PERMITS, AND LICENSES

1.5.1 Other Related Actions

Besides CRP, there are several other USDA programs dedicated to resource conservation (Table 1.5-1). These programs are administered by the USDA, and with the exception of the Emergency Conservation Program (ECP) and Healthy Forests Reserve Program, are authorized under the provisions of the Farm Bill. The provisions for ECP are contained in Title IV of the Agricultural Credit Act of 1978.

Table 1.5-1. Other Related USDA Conservation Programs

Program / Administrator	Summary
Emergency Conservation Program (ECP) / FSA	Provides emergency funding and technical assistance for farmers and ranchers to rehabilitate farmland damaged by natural disasters and for carrying out emergency water conservation measures in periods of severe drought.
Grassland Reserve Program (GRP) / NRCS, FSA, & USFS	A voluntary program designed to protect, restore, and enhance grasslands on private property. The program objective is to conserve vulnerable grasslands from conversion to cropland or other uses and conserve valuable grasslands by helping maintain viable ranching operations. Emphasizes support for working grazing operations: enhancement of plant and animal biodiversity; and protection of grassland and land containing shrubs and forbs under threat of conversion to cropping, urban development, and other activities that threaten grassland resources.
Wetland Reserve Program (WRP) / NRCS	A voluntary program offering landowners the opportunity to protect, restore, and enhance wetlands on their property and provides technical and financial support to help landowners with their wetland restoration efforts. The goal is to achieve the greatest wetland functions and values, along with optimum wildlife habitat, on every acre enrolled in the program. This program offers landowners an opportunity to establish long-term conservation and wildlife practices and protection.
Environmental Quality Incentives Program (EQIP) / NRCS	Provides producers with financial and technical assistance for implementing and managing a wide range of conservation practices consistent with crop and livestock production. Sixty percent of overall program funding is targeted to natural resource concerns related to poultry and livestock production. The remainder is directed toward practices that address conservation priorities on working cropland.

Table 1.5-1. Other Related USDA Conservation Programs (cont'd)

Program / Administrator	Summary
Conservation Stewardship Program (CSP) / NRCS	The 2008 Farm Bill replaced the Conservation Security Program with the Conservation Stewardship Program. This voluntary program provides financial and technical assistance to promote the conservation and improvement of soil, water, air, energy, plant and animal life, and other conservation purposes cropland, grazing land, and (within limits) forest land located on their farms. To participate in the farmers and rancher must, at minimum: (1) have already addressed at least one resource concern throughout their farm and (2) agree to address at least one additional priority resource concern (priorities set by USDA) during the 5-year contract term.
Wildlife Habitat Incentive Program (WHIP) / NRCS	Provides both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat on agricultural land.
Emergency Forestry CRP / FSA	Assists eligible landowners and operators restore and enhance forestland that was damaged by the 2005 hurricanes (Dennis, Katrina, Ophelia, Rita, and Wilma). Landowners in eligible counties must have suffered at least a 35% loss of merchantable timber for private, non-industrial forestland. Offers are accepted on their potential to prevent soil erosion, improve water quality, enhance wildlife habitat, and mitigate economic losses of the 2005 hurricanes. Producers enter into 10-year contract period; participants receive up to 50% cost-share assistance for site preparation and replanting, as well as either 10 years of annual rental payments or a lump sum payment. Producers may receive a maximum of \$50,000 per person per year. Acreage enrolled in Emergency Forestry CRP does not count towards the per-county number of acres eligible for CRP or CRP's maximum acreage enrollment authority.
Source Water Protection Program / FSA & NRWA	A joint project between FSA and National Rural Water Association (NRWA) to help prevent source water pollution in 43 States through voluntary practices installed at the local level by producers. Rural Source Water technicians work with FSA and NRCS to create operating plans that identify priority areas. Technicians facilitate the creation of local teams to collaborate on the development of local plans to promote clean groundwater. The plans outline the voluntary measures that local producers can install on their lands to prevent source water pollution.
Voluntary Public Access and Habitat Incentive Program	This program is a new provision contained in the 2008 Farm Bill that would provide grants to States and Tribal governments to be used to encourage producers to voluntarily make privately held farm, ranch, and forest lands available for public access for wildlife-dependent recreation. Programs would be administered by State and Tribal governments. Programs would strengthen habitat improvement programs on land enrolled in CREP by providing incentives to increase hunting and other recreational access. This grant money can be used in conjunction with other Federal, State, or Tribal resources to achieve program goals.

1.5.2 Federal Permits, Licenses and other Entitlements

Other Federal permits, licenses and other entitlements which must be obtained in implementing the Proposed Action are required under the following:

The Clean Water Act (CWA)

- **Section 401 Water Quality Certification**

Pursuant to Section 401 of the Clean Water Act (CWA), Federal permits for projects in wetlands or waterways must be certified by the state licensing or permitting agency to ensure that state water quality standards are met.

- **Section 402 National Pollutant Discharge Elimination System**

EPA currently regulates storm water discharges from construction sites that are one acre or larger. Documenting project compliance with the National Pollutant Discharge Elimination System general permit involves the preparation of a Storm Water Pollution Prevention Plan and submittal to EPA of a Notice of Intent to Discharge. Projects requiring a Section 402 also need a Section 401 permit.

- **Section 404 of the Clean Water Act**

The U.S. Army Corps of Engineers (USACE) regulates the placement of dredged or fill material in waters of the U.S., which includes some wetlands, pursuant to 33 CFR parts 320-3320. Work and structures that are located in, or that affect, navigable waters of the U.S, including work below the ordinary high water in non-tidal waters are also regulated by the USACE. Projects requiring a Section 404 also need a Section 401 permit.

Section 7 Endangered Species Act (ESA)

The ESA provides for the conservation of species and ecosystems that are in danger of becoming extinct. It applies to candidate species that have been recommended for listing as threatened or endangered or becoming extinct. For Federally or State listed species, under Federal jurisdiction or State law, the harming or harassing animal species and removing or reducing plant species is prohibited. USFWS will issue a Biological Opinion, also known as an incidental take statement, which serves as a permit for activities that would affect a known threatened or endangered species. This will be accomplished through the formal consultation process. In certain situations, USFWS may agree to accept a Biological Assessment completed by FSA or its designee. Completion of this assessment should be coordinated by the State Environmental Coordinator (SEC) with advice provided by the National Environmental Compliance Manager (NECM). The applicant may be responsible to pay for the completion of the assessment.

Section 106 National Historic Preservation Act (NHPA)

Permits for cultural resource investigations are not required under NHPA; however, permits for cultural resource investigations are required for activities in some States, particularly on State-owned land, and in a few States such as Washington, permits are required on privately owned land. Permits may also be required when planning projects on Tribal lands. Inquiry can be made with Tribal governments or Tribal Historic Preservation Officers (THPOs) if permits are required

for Tribal lands. Under the Archaeological Resources Protection Act of 1979 (ARPA), permits are required for archeological investigations on Federally-owned land. Inquiry can be made with State Historic Preservation Officers (SHPOs) to determine if ARPA permits will be needed.

1.5.3 Cooperating Agencies

Cooperating agencies as defined by the CEQ include any Federal agency other than the lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in proposed legislation, a proposed action, or reasonable alternative (40 CFR 1508.5). Cooperating agencies may include a State or local agency with similar qualifications, at the invitation of the lead Federal agency. The USDA NRCS is cooperating with FSA and the CCC in the CRP SEIS:

1.6 ORGANIZATION OF THE SEIS

This SEIS assesses the potential impacts of the action and the No Action alternatives on potentially affected environmental and socioeconomic resources.

- Chapter 1 provides background information relevant to the Proposed Action, and discusses its purpose and need.
- Chapter 2 describes the alternatives considered for implementing the Proposed Action; including the No Action Alternative as an environmental baseline against which to compare potential impacts.
- Chapter 3 describes the baseline conditions (i.e., the conditions against which potential impacts of the Proposed Action and alternatives are measured) for each of the potentially affected resources.
- Chapter 4 describes potential environmental consequences on these resources.
- Chapter 5 includes analysis of cumulative impacts and irreversible and irretrievable resource commitments.
- Chapter 6 discusses mitigation measures.
- Chapter 7 is a list of references cited in the SEIS.
- Chapter 8 lists the preparers of this document.
- Chapter 9 contains a list of persons and agencies receiving this document and contacted during the preparation of this document.
- Chapter 10 is an index of subjects discussed in the SEIS.
- Chapter 11 contains a glossary of technical terms utilized.
- Appendices

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 PROPOSED ACTION

The FSA proposes to implement certain changes to the CRP enacted by the 2008 Farm Bill. This SEIS will address nine provisions defined in the 2008 Farm Bill. Administrative changes that would not impact environmental resources are not addressed in this document. Additionally, mandatory provisions in the 2008 Farm Bill for the Farmable Wetlands Program, cost-sharing for thinning of trees to improve wildlife habitat, and the waiver provision for adjusted gross income limitation were analyzed in a PEA (FSA 2008a) and will not be covered in this SEIS.

Table 2.1-1 summarizes selected components of the existing CRP provisions and the changed provisions of the 2008 Farm Bill assessed in this SEIS. Each provision analyzed is numbered within the SEIS for ease of reference.

Table 2.1-1. Summary of the Current Law and Changes Enacted by the 2008 Farm Bill

Reference	Current Law (2002 Farm Bill)	2008 Farm Bill Provisions	CRP SEIS Provision Number
In General <i>1985 Act, Sec. 1231(a)</i>	Provides general authority to conserve and improve soil, water, and wildlife resources of eligible land.	Program purposes now explicitly include addressing issues raised by State, regional, and national conservation initiatives."	1
Maximum Enrollment <i>1985 Act, Sec. 1231(d)</i>	Authorizes enrollment of 39.2 million acres through CY 2007. As of June 2009, total enrollment was 33.8 million acres.	Enrollment authority remains at 39.2 million through 2009 and reduced to 32 million acres for fiscal years 2010 – 2012.	2
Multi-Year Grasses and Legumes <i>1985 Act, Sec. 1231(g)</i>	For CRP purposes, alfalfa and other multi-year grasses and legumes in a rotation practice are considered agricultural commodities.	Alfalfa and other multi-year grasses and legumes in a rotation practice, approved by Secretary, are to be considered agricultural commodities. Clarifies that alfalfa alone grown in approved rotation practice is to be considered an agricultural commodity and can be used to fulfill requirement that eligible land be cropped in 4-of-6 previous years.	3
Acreage Limitation <i>1985 Act, Sec. 1243(b)</i>	Acreage limitations required no more than 25% of county's cropland could be enrolled in CRP and WRP. Acreage enrolled in shelterbelt and windbreak practices are exempt from the limit. Limit can be waived provided action would not adversely affect local economy, or if operators in county were having difficulties complying with conservation plans.	Adds additional authority to except cropland limit in cases limited to Continuous or CREP enrollment provided that county government agrees.	4

Table 2.1-1. Summary of the Current Law and Changes Enacted by the 2008 Farm Bill
(cont'd)

Reference	Current Law (2002 Farm Bill)	2008 Farm Bill Provisions	CRP SEIS Provision Number
Duties of Owners and Operators, Conservation Plans <i>1985 Act, Sec. 1232(b)</i>	Sets standards to be included in the conservation plans including conservation measures and practices and permitted uses.	Clarifies conservation plan requirements to include management by the participant throughout the contract term to implement the conservation plan.	5
Duties of Owners and Operators, Haying and Grazing, etc. <i>1985 Act, Sec. 1232(a)(7)</i>	Provides exceptions for use of the cover including managed haying and grazing, emergency haying and grazing, and installation of wind turbines. Authorizes limited grazing for control of kudzu with no payment reduction if the participant does not own the livestock and is not compensated.	Removes authority for managed grazing and harvest, and adds new authority for routine grazing and managed harvest (including biomass). Authorizes prescribed grazing for control of invasive species and installation of wind turbines. These activities must not defeat the purpose of the CRP contract. A rental payment reduction commensurate with the economic value of the activity is imposed. Managed Harvest: <ul style="list-style-type: none"> • FSA in consultation with State technical committee will develop appropriate vegetation management requirements. • FSA in consultation with State technical committee will define periods during which it occurs. Routine and Prescribed Grazing: <ul style="list-style-type: none"> • FSA in consultation with State technical committee will develop appropriate vegetation management requirements and stocking rates suitable for continued grazing. 	6
Annual Rental Payments <i>1985 Act, Sec. 1234(c)</i>	Rental payments authorized to be paid at amount necessary to encourage participation. FSA sets offer specific bid maximums based on available county average cropland rental rates, adjusted for field-specific agricultural productivity.	Adds criterion to accept offers (when all other factors are equal) to residents in the county or contiguous county. Requires NASS annual surveys of per-acre estimates of county average market dry-land and irrigated cash rental rates for cropland and pastureland in all counties within the 50 States with 20,000 acres or more of cropland and pastureland. Estimates to be published on publicly available website.	7

Table 2.1-1. Summary of the Current Law and Changes Enacted by the 2008 Farm Bill
(cont'd)

Reference	Current Law (2002 Farm Bill)	2008 Farm Bill Provisions	CRP SEIS Provision Number
Incentives for Certain Farmers and Ranchers <i>2008 Act, Sec 2708</i>	Section 1244(a) Beginning Farmers and Ranchers provides incentives to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs	Amends <i>1985 Act, Sec 1244</i> by adding incentives for socially-disadvantaged, farmers and ranchers and Indian tribes to foster new farming and ranching opportunities, and to enhance long-term environmental stewardship goals.	8
Pollinators <i>2008 Act, Sec 2708</i>	No corresponding current law.	Amends <i>1985 Act, Sec 1244</i> by adding subsection (h): Using any conservation program, the Secretary may, as appropriate, encourage the: <ul style="list-style-type: none"> • Development of habitat for native and managed pollinators; and • Use of conservation practices that benefit native and managed pollinators. 	9

2.2 ALTERNATIVES DEVELOPMENT

Scoping is a process used to identify the scope and significance of issues related to a Proposed Action while involving the public and other key stakeholders in developing alternatives and weighing the importance of issues to be analyzed in the SEIS. Those involved in the scoping process include Federal, State, and local agencies and elected officials, interested non-governmental organizations, producers eligible for the program, current CRP participants, and the public. Scoping can help to resolve any conflicts or concerns prior to making a decision to implement an action. FSA has conducted both internal and external scoping of the Proposed Action and preliminary alternatives for the implementation and administration of the changed provisions to the CRP.

2.2.1 Agency and Public Scoping

Under NEPA, the EIS process provides a means for public input on program implementation alternatives and environmental concerns. The CCC first provided NOI to prepare the proposed CRP SEIS in the Federal Register on September 3, 2009 (74 FR 45606-45607) and solicited public comment on the proposed SEIS for CRP. Nine public scoping meetings were held in September and October 2009 to solicit comments for the development of alternatives and to identify environmental concerns. FSA performed a density analysis of likely participation to determine those areas that would utilize the program, and meetings were planned for these nine locations. Public meetings were held in the states of Washington, Montana, Minnesota, Kansas, Illinois, Oklahoma, New Mexico, Georgia, and Pennsylvania. The specific cities and dates are presented in Table 2.2-1.

Table 2.2-1. CRP SEIS Public Scoping Meeting Locations and Dates

Date / Time	Public Scoping Meeting City	Public Scoping Meeting Location
15 September 2009 5:30 – 7:30pm	Spokane, Washington	Hilton Garden Inn Spokane Airport 9015 West SR Highway 2 Spokane, WA 99224
17 September 2009 5:00 – 7:00pm	Great Falls, Montana	Hampton Inn Great Falls 2301 14th St. SW Great Falls, MT 59404
21 September 2009 5:00 – 7:00pm	Moorhead, Minnesota	AmericInn Lodge & Suites and Event Center of Moorhead 600 30th Ave. S. Moorhead, MN 56560
23 September 2009 5:00 – 7:00pm	Manhattan, Kansas	Clarion Hotel 530 Richards Drive Manhattan, KS 66502
September 25, 2009 5:00 – 7:00pm	Springfield, Illinois	Hilton Garden Inn, Springfield 3100 S. Dirksen Parkway Springfield, IL 62703
29 September 2009 5:00 – 7:00pm	Oklahoma City, Oklahoma	Oklahoma City Marriott Hotel 3233 N.W. Expressway Oklahoma City, OK 73112
1 October 2009 5:00 – 7:00pm	Clovis, New Mexico	La Quinta Inn & Suites Clovis 4521 N. Prince St. Clovis, NM 88101
6 October 2009 5:00 – 7:00pm	Albany, Georgia	Hilton Garden Inn Albany 101 S. Front Street Albany, GA 31701
8 October 2009 5:00 – 7:00pm	Harrisburg, Pennsylvania	Courtyard by Marriott Harrisburg/Hershey 725 Eisenhower Blvd. Harrisburg, PA 17111

In an interim rule published in the Federal Register on June 29, 2009 (74 FR 30907-30912), FSA requested comments on detailed environmental and other needs and goals on which CRP resources should be focused or targeted, if any unintended barriers to enrollment existed (outside of statutory provisions), and the steps that the CCC should take to remove such barriers or to streamline program participation.

This SEIS has taken into consideration comments gathered in the scoping process initiated with the September 3, 2009 NOI and the June 29, 2009 Interim rule with request for comments to develop the alternatives proposed for the administration and implementation of CRP.

Announcements of the scoping meetings were posted in the Federal Register, State and county FSA offices, the FSA website prior to the meetings, and publicized in press releases prior to the meeting. A public website was created that provided program information, scoping meeting locations and times, the public meeting presentation, and an electronic form for submitting comments via the internet.

A presentation was given at each meeting followed by a comment period for attendees. Printed program information and comment forms were made available at the meetings, along with cards providing the public comment website address. Meetings were attended by the FSA National Environmental Compliance Manager or FSA Federal Preservation Officer,



and the CRP National Program Manager or designated representative, State Executive Director, or certain CRP State Specialist managers. All public comments were recorded by a court reporter. A sign language interpreter was present at the commencement of each meeting.

2.2.2 Scoping Comments

Comments were collected via five different means: (1) U.S. Postal Service, (2) the project website, (3) email, (4) fax, and (5) scoping meeting transcripts. All comments received during the scoping process were entered into an Access[®] database. Individual comments were assigned a unique identification number, and the method of submission, commenter affiliation, nature of the comment, and date received were all recorded. Comment nature was categorized as to the stated purpose and need for the Proposed Action, the Proposed Action itself, preliminary alternatives, environmental resource areas, mitigation measures, cumulative impacts, and where appropriate, by specific 2008 Farm Bill provision. The comments were evaluated by FSA to determine the scope and significance of each issue and the depth at which it would be analyzed in the SEIS.

A total of 971 individual comments were received during the scoping comment period. Forty-two states were represented by the comments received, with Minnesota having the largest number of comments at 127. Commenters that responded via email were not required to give any contact information; therefore, 219 comments have no associated location. Comments were broken down by affiliation of the commenter, and the vast majority of comments were submitted by individuals. Non-government organizations were represented by 130 comments, with State

Agencies submitting 40 comments and Federal Agencies providing only four comments. Table 2.2-2 provides a breakdown of the number of comments received for the top 10 states with affiliations classified below.

Table 2.2-2. Comment Breakdown for Public Scoping Period

State	Number of Comments Received
Minnesota	127
Iowa	72
Kansas	66
Washington	63
South Dakota	45
North Carolina	42
Illinois	40
Wisconsin	30
Montana	27
North Dakota	24
Other States	218
No State Given	217
Total	971
Affiliation	Number of Comments Received
Individual	793
Non-Government Organization	132
State Agency	36
Local Elected Official	4
Federal Agency	4
State Elected Official	1
Other	1
Total	971

Many comments were specific to a 2008 Farm Bill provision, while others were broad in nature, or covered a variety of 2008 Farm Bill provisions that are being analyzed by the SEIS, or other topics. When possible, comments were categorized to the most specific level of detail, thereby allowing FSA to understand the true nature of the comments without being overly broad. These comments were subdivided into categories based on the individual concerns given within the comment. As such, 971 individual comments were received, but when subdivided into individual concerns, there were a total of 1,459 individual concerns. These were divided among 27 different categories. Table 2.2-3 provides the breakout of the 971 individual comments subdivided by topic area. Appendix D includes a summary of alternatives handout and comment form utilized in the scoping process. The public scoping presentation was made available for download through the project website.

The vast majority of comments were in support of CRP, with a request to not diminish the total allowable acres within CRP below the pre-Farm Bill levels. Generally these requests were combined with the need for a new General Signup. A large portion of comments requested increasing programs aimed at benefiting wildlife, especially upland game birds. Significant emphasis was given to the provision dealing with managed harvests (haying and grazing), the types of management activities allowable on CRP land, and the need to increase rental rates. Negative comments overwhelmingly dealt with management and administration of the program, and enrollment criteria, although negative comments were a small percentage of the total number of comments. Overall, commenters voiced that they were extremely supportive of CRP, but that the contract process needed to be streamlined and more interagency coordination and collaboration is necessary.

Table 2.2-3. Comments by Topic Area

Topic Area	Number of Concerns Received
Enrollment Acres	568
Managed Haying and Grazing	152
Rental Rates	107
Mid-Contract/Contract Management	97
General CRP Support	91
Other	90
County Acreage Limitations	53
State, Regional, and National Conservation Initiatives and CRP	52
Wildlife	38
Pollinator Habitat	37
Alfalfa, Multi-year Grasses, and Legumes/ Cropping History	36
Proposed Alternatives	35
Proposed Action	21
Socioeconomics	20
CRP Land Transition	16
Incentives to Disadvantaged Farmers	14
Water Quality	9
Water Usage	6
Threatened and Endangered Species	4
Wetlands	3
Soil Quality	2
Purpose and Need	2
Floodplains	2
Environmental Justice	2
Wilderness	1
Air Quality	1
Total	1,459

2.3 SELECTION CRITERIA

Analysis of the potential impacts of not implementing a given proposed action is required by NEPA under 40 CFR 1502.14 (d) and serves as an environmental baseline against which the impacts of action alternatives for program implementation may be compared. Additionally, the alternatives analyzed have been developed based upon the following primary factors:

- Meets basic purpose and need
- Maximizes the environmental benefits consistent with the goals and purposes of CRP
- Is achievable within the budget appropriated for the program
- Does not violate any existing laws

2.4 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Council on Environmental Quality regulations at 40 CFR 1502.14(a) require that agencies rigorously explore and objectively evaluate all reasonable alternatives and, for alternatives eliminated from detailed study, briefly explain the reasons for elimination. In addition to the alternatives analyzed, another alternative initially formulated and considered during the alternatives development process included maintaining the total authorized enrollment acreage at 39.2 million acres as established in the 2002 Farm Bill; however, this alternative was eliminated from further consideration as it is inconsistent with legislation in the 2008 Farm Bill. The 2008 Farm Bill amends Section 1231(d) of the Food Security Act of 1985 (16 U.S.C. 3831(d)) by adding:

“During fiscal years 2010, 2011, and 2012, the Secretary may maintain up to 32,000,000 acres in the conservation reserve at any 1 time.”

Because the only discretion afforded by the 2008 Farm Bill concerning enrolled acres is below the 32 million acre level, it is not possible to meet the purpose and need of the Proposed Action by proposing to enroll any acreage above that level into CRP.

2.5 ALTERNATIVES ANALYZED

Alternatives analyzed include the No action as well as two Action Alternatives that are proposed for the administration and implementation of certain changed provisions to CRP as authorized by the 2008 Farm Bill. The No Action Alternative is carried forward in the SEIS in accordance with 40 CFR 1502.14(d) to represent the environmental baseline against which to compare the action alternatives. In general, under the No Action Alternative, the current CRP provisions would continue as currently implemented, based upon the 2002 Farm Bill and initiatives implemented from 2003 until now, except that the maximum program acreage for the No Action Alternative is reduced from the 39.2 million acres authorized by the 2002 Farm Bill to 32 million acres mandated by the 2008 Farm Bill. This is a reflection of actual existing conditions, since expiring CRP contracts will drop enrolled acreage below the 32 million acre mandate in 2009. In general, Alternative 1 allows for full implementation of the applicable 2008 Farm Bill provisions

in accordance with current procedures, representing the most literal interpretation of the changed provisions. Alternative 2 would allow for implementation of CRP in accordance with applicable 2008 Farm Bill provisions with discretion being exercised that differs from current procedures. The discretion would vary for each provision; the alternatives considered for each provision are presented in detail below. The provision numbers utilized in this document do not correspond to the legal reference for the provision in the 2008 Farm Bill, rather, they are arbitrarily assigned for the ease of the reader. Table 2.1-1 presents the legal reference for each of the analyzed provisions and its arbitrary number as assigned in this SEIS.

2.6 ALTERNATIVES (DESCRIPTION BY PROVISION)

2.6.1 PROVISION 1 (National Conservation Initiatives)

In General 1985 Act, Sec. 1231(a): Program purposes now explicitly recognize "addressing issues raised by State, regional, and national conservation initiatives."

2.6.1.1 No Action Alternative

Currently, national, state and regional conservation needs best addressed by enrollment in CRP are met by establishing National and State CPAs, CREPs, initiatives, and providing payment incentives under Continuous enrollment provisions to increase enrollment in these areas. Specific target enrollment goals are identified for CREPs and initiatives. The current list of CPAs and enrolled acres under CRP are presented in Table 1.1-1. In CRP, State conservation needs best met by enrollment in CRP are provided for by CREPs and State CPAs. As described in Chapter 1, CREP targets high-priority conservation issues of both local and national significance and focuses on impacts to water supplies, loss of critical habitat for threatened and endangered wildlife species, soil erosion, and reduced habitat for fish populations. Enrollment in a State CREP is limited to specific geographic areas with acreage targets for enrollment under certain practices, and with additional non-federal sponsored enrollment incentives. In addition, conservation initiatives targeting benefits to particular resources that are sometimes of regional scale are undertaken by CRP. Existing initiatives implemented by CRP since 2002 and enrollment goals are described in Chapter 1 and include:

- SAFE
- Longleaf Pine
- Wetland Initiative – Floodplains
- Wetland Initiative – Non-floodplains
- Bottomland Hardwoods
- Upland Bird Habitat Buffers
- Duck Nesting Habitat Prairie Pothole Region

As of October 2009, a total of 887,667 acres are currently enrolled in these initiatives (FSA 2009a).

2.6.1.2 Alternative 1

The USDA targeted national conservation initiatives would be limited to Continuous signup and require PAYGO offsets in the USDA budget; that is, there is no dollar cap per initiative. Under Alternative 1, the following targeted national conservation initiatives would have acres evenly distributed among fiscal years 2010, 2011, and 2012:

- 1) Water Resource Protection Initiative to protect municipal water resources (e.g., reservoirs, public wells, water conservation efforts) through contracts and retirement of water rights up to 1,000,000 acres.
- 2) Highly Erodible Land Initiative to address erosion/wildlife/water quality/air quality issues associated with land with an EI 50 or greater, up to 250,000 acres.
- 3) Regional Restoration of Critical Wildlife Habitat of National Concern to restore critical wildlife habitat (such as for Sage Grouse or Lesser Prairie Chicken) that impacts a multi-State region of at least 250,000 acres with total enrollment up to 250,000 acres. Critical Wildlife Habitat of National Concern will be identified with input from the State Technical Committee and from the USFWS, NRCS, FS, EPA, and the U.S. Geological Survey (USGS).

2.6.1.3 *Alternative 2*

Under Alternative 2, no new national conservation initiatives would be established, and the existing wetland initiative would be reduced. Wetland initiatives acreage includes Wetland Restoration Initiative (CP23) and Wetland Restoration, Non-floodplain Initiative (CP23A). These targeted wetland initiatives total 750,000 acres (Table 1.1-2).

2.6.2 PROVISION 2 (Maximum Enrollment)

Maximum Enrollment 1985 Act, Sec. 1231(d): Enrollment authority remains at 39.2 million acres for 2008 and 2009 and, for FY’s 2010 – 2012, the Secretary may maintain up to 32 million acres.

2.6.2.1 *No Action Alternative*

The maximum acres authorized to be enrolled in CRP at any one time would be adjusted from 39.2 million to 32 million by FY 2010, apportioning 27.5 million acres to General Signup and 4.5 million acres to the targeted signups as presented in Table 2.6-1. This is achieved in combination with the number of CRP contracts that have expired since FY 2008 when the 2002 Farm Bill provisions expired, and the CRP contracts that are scheduled to expire from FY 2010 to FY 2012. As discussed in Section 2.4, the reduction from the 39.2 million acre level authorized by the 2002 Farm Bill to the 32 million acre level mandated by the 2008 Farm Bill is not analyzed in this SEIS since there is no discretion offered by the law for any other maximum

Table 2.6-1. Apportioned Acres for Targeted Signups for No Action Alternative

Targeted Signups	Target Acres (millions)	Percent Total Target Acres	Current Acres (millions)	Percent Total Target Acres
CREP	1.2	27	1.168	26.0
Continuous	2.0	44	3.008	66.8
Farmable Wetlands ¹	1.0 ¹	9	0.195	4.3
SAFE	0.40	9	0.238	5.3
Initiatives	0.50	11	0.650	14.4
Total	4.5	100	5.259	116.9

Source: FSA 2009a

1. Farmable Wetlands does not have target acreage, this figure is the maximum enrollment limit.

level. At the end of FY 2009 (September 30, 2009), 33.72 million acres were enrolled in the program. Due to additional expiring contracts and associated acres expected in FY 2010, the number of acres enrolled in the program would be below the 32 million acre cap due to attrition alone. In May of 2009, FSA offered three to five year contract extensions for certain CRP acreage scheduled to expire so that environmental benefits could be maintained on as many acres as possible.

Figures 2.6-1 through 2.6-3 and Table 2.6-2 present the number of all CRP expiring acres nationally by fiscal year, and Table 2.6-3 presents all expiring CRP acres nationally by signup type and fiscal year. The most acreage to expire in any year is about 6.5 million in FY 2012.

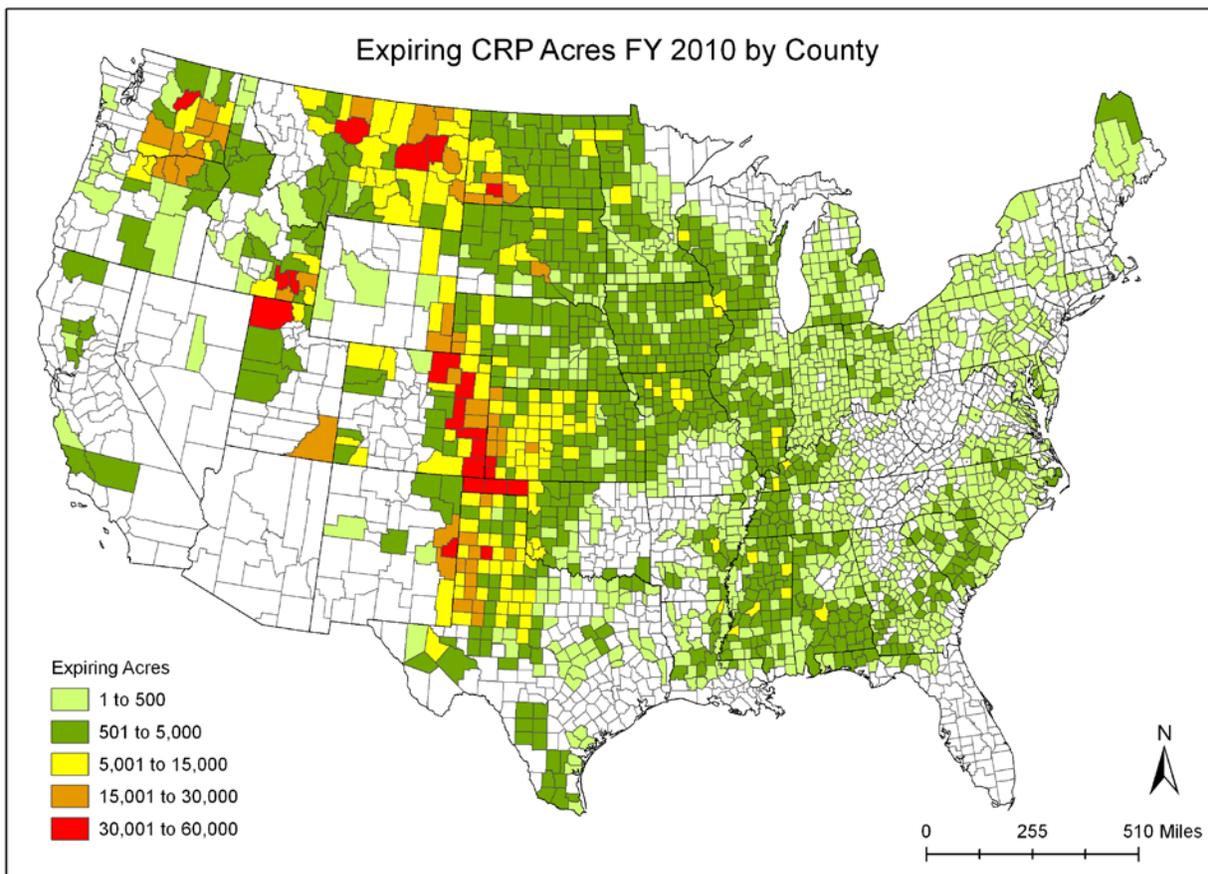


Figure 2.6-1. CRP Acres Expiring in FY 2010

More acres from General Signup either expired or are set to expire each year from FY 2010 to FY 2012 (Table 2.6-3). Two States have the most expiring acreage for both signup types in these years that account for nearly 25 percent of the expiring acreage nationwide. Texas has a total of 2.18 million acres expiring and Kansas has 1.67 million acres expiring (FSA 2009a). These calculations are approximate, however, and do not include acres gained by extensions offered in 2006 or in May of 2009. Appendix E presents expiring acreage data summarized by State and fiscal year, and by CP by fiscal year. Appendix E figures do not include the

approximately 3.5 million acres reenrolled through contract extensions offered in 2006 and May of 2008. Of the conservation practices, CP10 Grass Already Established would have the most expiring acres during the period studied at approximately 8.25 million acres, with CP2 Permanent Native Grasses the second most, with just over 3.1 million acres expiring by 2012.

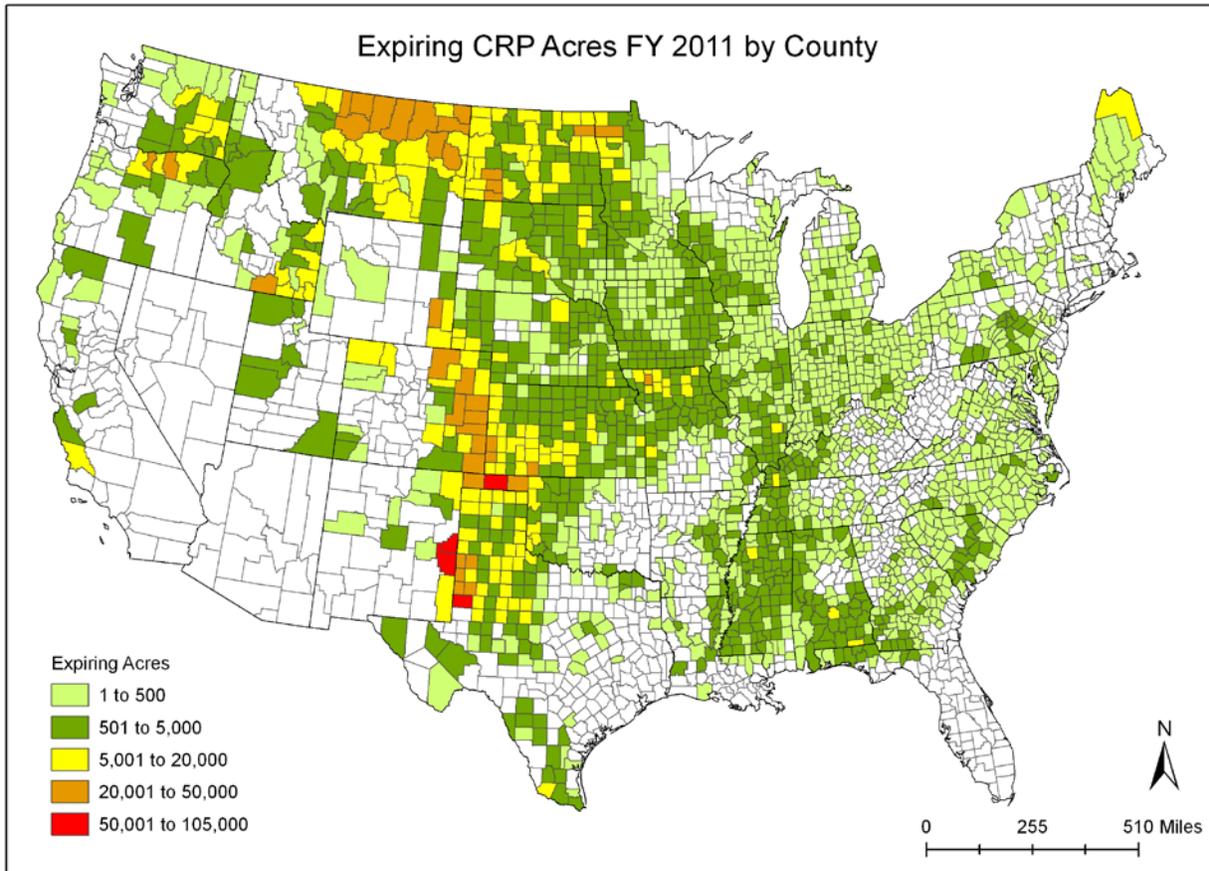


Figure 2.6-2. CRP Acres Scheduled to Expire FY 2011

2.6.2.2 *Alternative 1*

The maximum acreage limit would be maintained at 32 million acres apportioning 24 million for General Signup and eight million acres for targeted signups as distributed in Table 2.6-4:

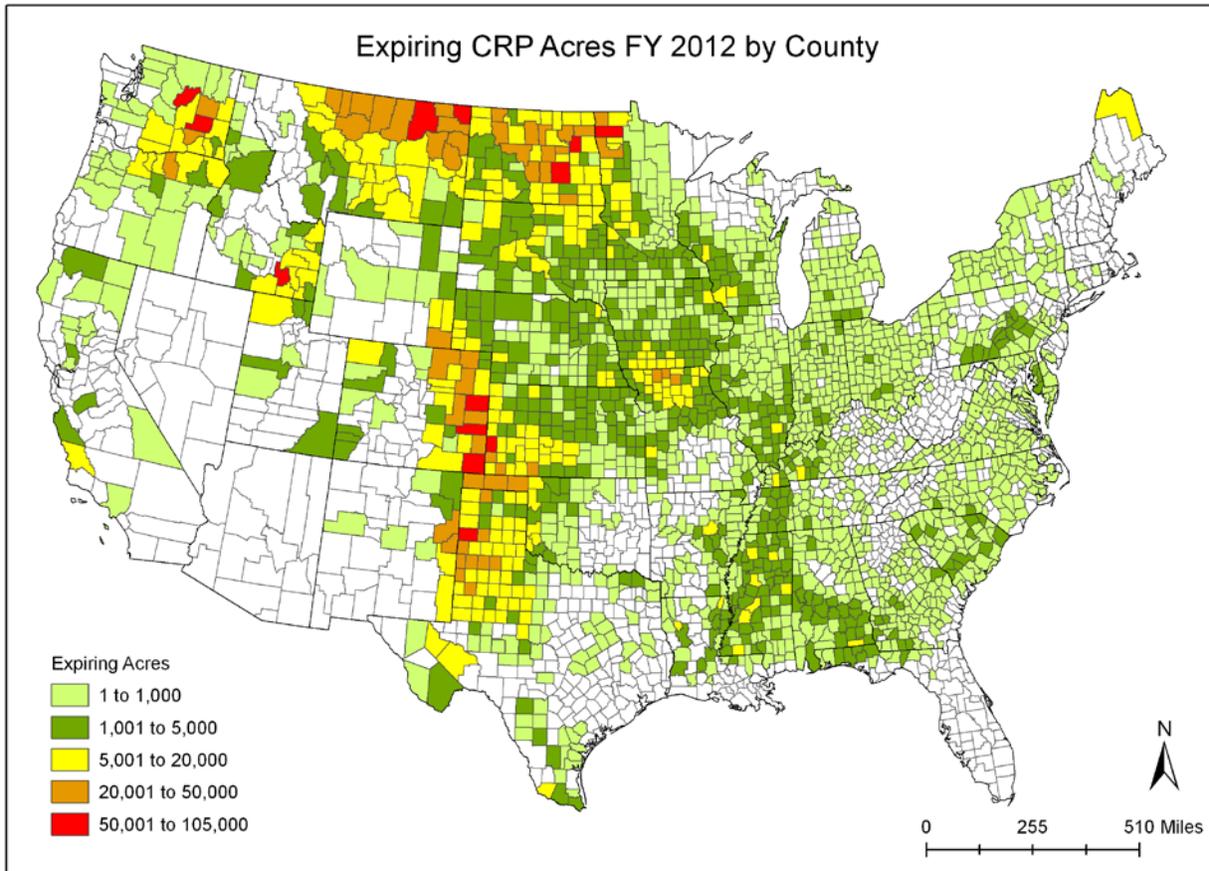


Figure 2.6-3. CRP Acres Schedule to Expire FY 2012

Table 2.6-2. All Expiring CRP Acres FY 2010 to FY 2012

FY	Expiring Acres
2010	4,758,365
2011	4,423,507
2012	6,539,905
Total	15,721,777
Source: FSA 2009 October CRP Monthly Summary	

Table 2.6-3. All Expiring CRP Acres By Signup Type FY 2010 to FY 2012

	2010 Expiring Acres	2011 Expiring Acres	2012 Expiring Acres	Total by Signup Type
Continuous	149,151	152,125	562,703	863,979
General	3,904,276	3,135,265	3,922,826	10,962,367
Total by Year	4,053,427	3,287,390	4,485,529	11,826,346

Note: Figures do not include the approximately 3.5 million acres reenrolled through contract extensions offered in 2006 and May of 2008.

Table 2.6-4. Apportioned Acres for Targeted Signups under Alternative 1

Targeted Signups	Target Acres (millions)	Percent Total Target Acres
CREP	2.0	25
Continuous	2.5	31
Farmable Wetlands ¹	0.75	9
SAFE	1.0	13
Initiatives	1.75	22

1, Farmable Wetlands does not have target acreage, this figure is the maximum enrollment limit.

2.6.2.3 Alternative 2

Total enrolled acres would be reduced to 20 million acres for General Signup and four million acres for targeted signups as presented in Table 2.6-5. This reduction would be achieved by General Signup of 2.5 million acres in FY 2010, 2.5 million acres in FY 2011, and 3.5 million acres in FY 2012; seven million acres of General Signup acreage are thereby reduced through lower enrollment for this period, while CREP stays at constant levels.

Table 2.6-5. Apportioned Acres for Targeted Signups for Alternative 2

Targeted Signups	Target Acres ¹ (millions)	Percent Total Target Acres
CREP	1.0	25
Continuous	1.7	45
Farmable Wetlands ²	0.3	8
SAFE	0.4	11
Initiatives	0.4	11

1. Total does not add to 4.0 due to rounding.

2. Farmable Wetlands does not have target acreage, this figure is the maximum enrollment limit.

2.6.3 PROVISION 3 (Alfalfa Crop History)

Multi-Year Grasses and Legumes 1985 Act, Sec. 1231(g) Clarifies that alfalfa alone grown in an approved rotation practice is to be considered an agricultural commodity and can be used to fulfill requirement that eligible land be cropped in four of the six years previous to 2008.

2.6.3.1 No Action Alternative

The crop rotation practice would retain alfalfa in any rotation with multi-year grasses and legumes and/or summer fallow to meet crop history requirements. Currently, the crop rotation must have occurred from 1996 to 2001. No information is available to assess how many acres in the CRP currently have qualified for enrollment under this alternative, but it is expected to be fairly small. This is also supported by the amount of acreage from which alfalfa or mixed alfalfa plantings have been harvested from 2003 to 2008 which is relatively small, on average about 22.1 million acres (NASS 2009a). Given the relatively small amount of land planted to alfalfa and from which alfalfa has been harvested, combined with the reductions in CRP acreage which occurred in recent years from contract expirations (especially in 2007 to 2008), the amount of

acreage enrolled by meeting this qualification is likely to be small. Appendix F presents the number of acres of alfalfa harvested by State for 2003 to 2008 with a forecasted number of acres for 2009 (NASS 2008a, b, 2009b). From 2003 to 2008, an average of approximately 22.1 million acres of alfalfa hay was harvested (NASS 2009a). In 2007, alfalfa hay was harvested from about 6.5 million acres of irrigated cropland (*Ibid*). In 2007, the top producing states for alfalfa hay harvested were Wisconsin, Minnesota, Iowa, Nebraska and Idaho (*Ibid*). As discussed in Section 4.11.4.1, about 2,700,000 acres of new alfalfa seedings were planted in 2008.

2.6.3.2 Alternative 1

Under Alternative 1, alfalfa would be allowed to be rotated alone with an eligible commodity that meets the CRP crop history requirement if the rotation interval is eight years consisting of at least six years of alfalfa and two years of eligible commodity, with the rotation required to have occurred sometime from 2002 to 2007.

2.6.3.3 Alternative 2

For Alternative 2, the rotation practice would be alfalfa alone in rotation with an eligible commodity that meets the CRP crop history requirement, if the rotation interval is 12 years, consisting of at least 10 years of alfalfa and two years of eligible commodity. Again, the rotation must have occurred from 2002 to 2007.

2.6.4 PROVISION 4 (County Acreage Limitation Exception)

Acreage Limitation 1985 Act, Sec. 1243(b): Additional authority to except cropland limit in cases limited to Continuous Signup or CREP enrollment, provided that county government agrees.

2.6.4.1 No Action Alternative

Under current provisions, no more than 25 percent of a given county's cropland may be enrolled in CRP and Wetland Reserve Program (WRP). This limit may be waived provided the action would not adversely affect the local economy, and if operators in the county are having difficulties complying with highly erodible lands conservation requirements for working cropland. Also excepted under current regulation are acres enrolled in shelterbelts and windbreaks CPs. FSA currently determines that the 25 percent cap exception would not result in an adverse effect to the local economy by conducting a survey of county elected officials, the Chamber of Commerce, and local business leaders. As shown in Figure 2.6-4 and presented in Appendix G, currently, 24 counties in the 48 contiguous states exceed the 25 percent limit for a total of approximately 400,000 excepted acres.

2.6.4.2 Alternative 1

Under Alternative 1 county government would exercise its yes/no authority to exceed the 25 percent total county cropland enrollment limit for additional Continuous or CREP enrollment, with no additional per county acreage limitation imposed.

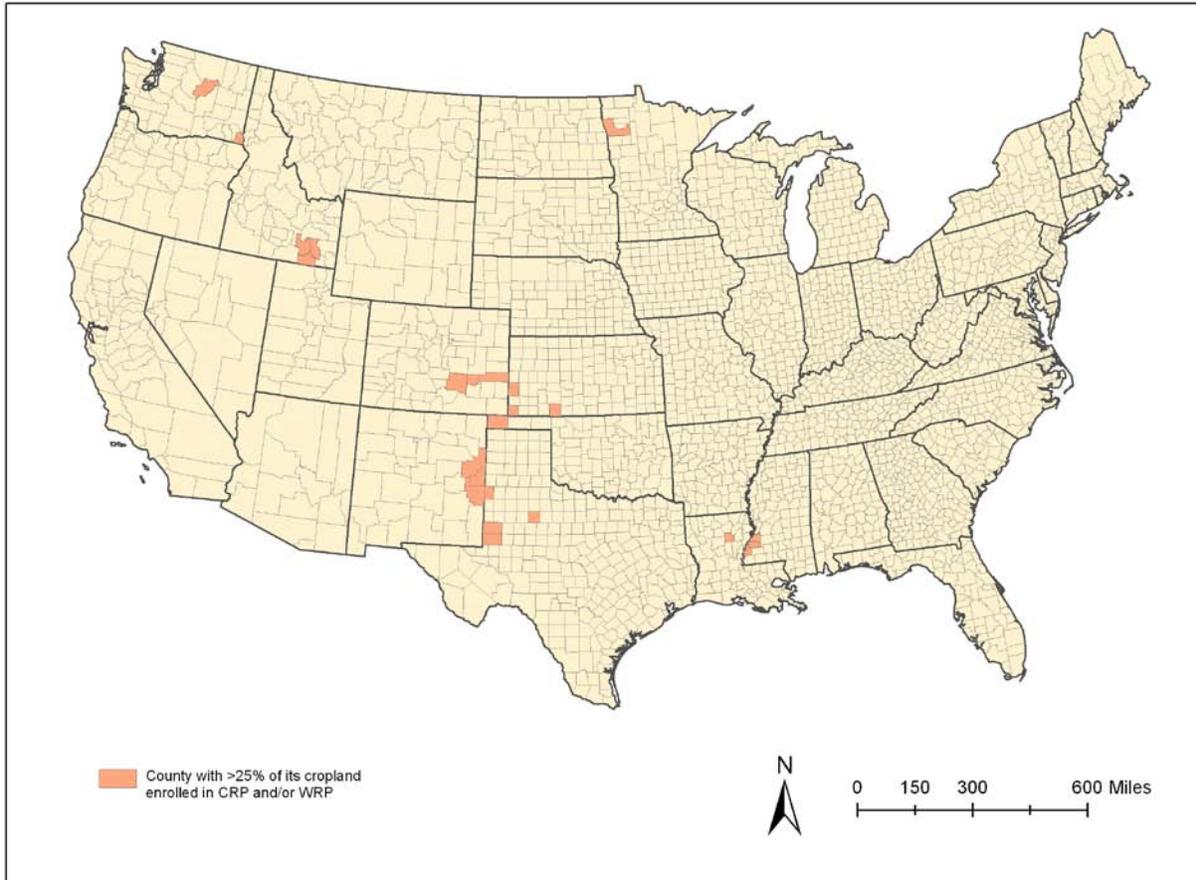


Figure 2.6-4. Counties with CRP Enrollment Exceeding the 25 Percent Cap in the Continental U.S.

2.6.4.3 *Alternative 2*

Alternative 2 would have county government exercise its yes/no authority to exceed the 25 percent total county cropland enrollment limit for additional Continuous or CREP enrollment up to a new limit of no more than 50 percent.

2.6.5 PROVISION 5 (Conservation Plan Management)

Duties of Owners and Operators, Conservation Plans 1985 Act, Sec. 1232(b): Clarifies conservation plan requirements to include management by the participant throughout the contract term to implement the conservation plan.

2.6.5.1 *No Action Alternative*

Currently, management is expected to occur as stipulated in the Conservation Plan. Mid-contract management is required on contracts executed after FY 2004, and is voluntary for contracts accepted before that year. Mid-contract management is cost shared under the No Action Alternative at 50 percent; it must be included in the Conservation Plan, which is designed to ensure vegetation and wildlife benefits, while providing protection of soil and water resources. Management activities are generally prohibited during the PNS. Mid-contract management of

certain CPs is exempt in some states because they are not effective or not needed, given local conditions. If a conservation cover fails through the fault of an operator, the practice must be re-established at their expense or all moneys paid by the program to date are forfeit. Chapter 1 provides a detailed description of MCM and maintenance provisions of the current CRP. Appendix H summarizes representative types of MCM likely to occur on CRP lands and a brief description of their intended conservation benefit. As of October 2009, a total of 480,181 contracts associated with 20,993,121 acres in the CRP entered into prior to FY 2004 were still active, and 246,738 contracts associated with 10,126,947 acres entered into after the start of FY 2004 (FSA 2009a).

2.6.5.2 Alternative 1

Conservation Plan management is required throughout the contract term and MCM tasks are to be completed ONLY if included in the approved Conservation Plan. Mid-contract management would not be required on an individual CP basis.

2.6.5.3 Alternative 2

Conservation Plan management is required throughout the contract term, including MCM tasks if specified by the approved Conservation Plan, but additionally, Alternative 2 would require MCM on certain CPs as determined by individual State Technical Committees.

2.6.6 PROVISION 6 (Harvesting CRP)

Duties of Owners and Operators, Haying and Grazing, etc. 1985 Act, Sec. 1232(a) (7): Removes authority for managed grazing and harvest, and adds new authority for routine grazing and managed harvest (including biomass) or other commercial use of forage on the land. Authorizes prescribed grazing for control of invasive species, emergency haying and grazing, and installation of wind turbines. These activities must not defeat the purpose of the CRP contract and be consistent with the conservation of soil, water quality, and wildlife habitat (including habitat during nesting season for birds). A rental payment reduction commensurate with the economic value of the activity is imposed. Additional specific provisions are:

Managed Harvest:

- **FSA in consultation with the State Technical Committee will develop appropriate vegetation management requirements for individual States**
- **FSA in consultation with the State Technical Committee will define periods during which harvest occurs for individual States**

Emergency Harvest and Grazing:

- **Continues authorization for harvesting, grazing, or other commercial use of land in response to drought or other emergency**

Routine or Prescribed Grazing

- **FSA in consultation with the State Technical Committee will develop appropriate vegetation management requirements and stocking rates suitable for continued routine or prescribed grazing for individual States**

- **FSA in consultation with the State Technical Committee will establish the frequency of routine grazing for individual States taking into account:**
 - **regional differences in climate, soil, and natural resources**
 - **the number of years between the activities**
 - **how often during a year in which routine grazing is permitted**

2.6.6.1 No Action Alternative

As described in Chapter 1, there are currently several forms of authorized harvest, haying, and grazing on CRP, including managed haying and grazing (including biomass), emergency haying and grazing, incidental grazing (gleaning), permissive grazing, and limited grazing for controlling kudzu. Payment reduction assessments vary per type of harvesting, as discussed in Chapter 1, and are not assessed under certain conditions for limited grazing. Generally these activities are not authorized during the PNS, the dates for which are listed for each state in Appendix C. For managed haying and grazing, the frequency of these activities is established on an individual State basis as presented in Appendix C, but cannot be more often than once every three years. Appendix I presents the number of acres hayed or grazed each year under managed and emergency provisions from FY 2004 and FY 2008 for all states. As illustrated by Table 2.6-6, a total of 3,961,028 acres have been managed hayed, 1,294,438 acres have been managed grazed, 1,302,369 acres have been hayed under emergency procedures, and 1,568,287 acres have been emergency grazed in the U.S. since managed haying and grazing was first authorized by the 2002 Farm Bill. From FY 2005 to FY 2008, 2,021 CRP acres had limited grazing to control kudzu, 3,962 acres were grazed under permissive procedures, and 10,632 acres had incidental grazing (limited, permissive, and incidental data unavailable for FY 2004). As supported by Table 2.6-6, from FY 2005 to FY 2008, an average of 4.4 percent of CRP acres were harvested under all authorized types of haying and grazing. Appendix I also presents the total number of CRP contracts that had harvesting conducted: 3.7 percent of total active CRP contracts from FY 2005 and FY 2008 were harvested.

2.6.6.2 Alternative 1

Only those CPs currently authorized for managed haying and grazing, incidental grazing (gleaning), and harvest (biomass) would be authorized for routine grazing (including gleaning) and managed harvest. Any change to the established PNS, period (timing) of routine grazing and harvest, length of harvest, and frequency of routine grazing and harvest by States requires individual analysis under NEPA by those State Technical Committees desiring changes.

Prescribed Grazing for control of invasive plant species other than kudzu would be allowed under Alternative 1, but not authorized for CP23, CP23A, non-grass related CP25, CP27, CP31, or CP39-41, and would occur only in accordance with a control plan included in the Conservation Plan. If implemented, no payment reduction would be associated with prescribed grazing to control invasive plants.

2.6.6.3 Alternative 2

Any change to CPs to authorize managed harvest or routine and prescribed grazing, or changes to the PNS, timing, length, or frequency of managed harvests or routine and/or prescribed grazing would require additional NEPA analysis. The same prescribed grazing provisions as

Alternative 1 would apply. Payment reduction commensurate with the economic value of the activity would be estimated on a percentage basis related to percent of the year the authorized activity would occur, currently proposed at 25 percent.

Table 2.6-6. U.S. Acres Hayed or Grazed 2004-2008 and Number of CRP Contracts Performing Haying or Grazing

Year	Managed Haying Acres	Managed Grazing Acres	Emergency Haying Acres	Emergency Grazing Acres	Limited (Restrictive) Grazing Acres	Permissive Grazing Acres	Incidental Grazing Acres
2004	1,037,592	382,447	135,946	282,290	---	---	---
2005	612,119	256,188	15,717	9,992	264	924	1,845
2006	511,899	304,039	875,404	875,579	590	2,532	2,061
2007	930,995	207,639	49,794	140,550	174	8	4,879
2008	868,423	144,125	225,507	259,877	993	498	1,847
Total	3,961,028	1,294,438	1,302,369	1,568,287	---	---	---
Average 2005-2008	730,859	227,998	291,606	321,499	505	991	2658

Year	Managed Haying Contracts	Managed Grazing Contracts	Emergency Haying Contracts	Emergency Grazing Contracts	Limited (Restrictive) Grazing Contracts	Permissive Grazing Contracts	Incidental Grazing Contracts
2004	17,659	3,952	1,985	1,641	---	---	---
2005	13,164	2,772	863	142	43	23	291
2006	12,086	3,879	17,108	7,209	1,411	101	349
2007	18,757	3,012	1,819	882	18	2	446
2008	19,071	1,601	5,169	2,401	13	10	393
Total	80,737	15,215	26,944	12,275	---	---	---
Average 2005-2008	15,770	2,816	6,240	2,659	371	34	370

2.6.7 PROVISION 7 (NASS Cash Rental Rates)

Annual Rental Payments 1985 Act, Sec. 1234(c): Requires NASS annual surveys of per-acre estimates of county average market dry-land and irrigated cash rental rates for cropland and pastureland in all counties within the 50 States with 20,000 acres or more of cropland and pastureland. NASS estimates are to be published on a publicly available website.

2.6.7.1 *No Action Alternative:*

Under the No Action Alternative, the existing annual rental payment rules with a soil productivity adjustment as described in Chapter 1 would continue to be implemented. Furthermore, targeted

signup incentives (for CREP, non-CREP CCRP, and initiatives) would remain unchanged. In accordance with procedure that became effective October 1, 2009 maintenance incentives remain the same for contracts executed before that date, but for contracts executed after that date, maintenance incentives are reduced to zero for General Signup practices (CRP-644).

2.6.7.2 Alternative 1

For new General Signup contracts after December 1, 2009, updated NASS market dryland and irrigated rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for targeted signups (for CREP, non-CREP CCRP, and initiatives) may be increased to ensure program acreage targets are achieved. Maintenance incentives are reduced to zero for General Signup practices in accordance with procedure that became effective October 1, 2009 (CRP-644).

2.6.7.3 Alternative 2

For all new contracts after December 1, 2009, updated NASS market dryland and irrigated rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for targeted signups (for CREP, non-CREP CCRP, and initiatives) would remain the same as the current program. Maintenance incentives are reduced to zero for General Signup practices in accordance with procedure that became effective October 1, 2009 (CRP-644).

2.6.8 PROVISION 8 (Socially Disadvantaged Farmer/Rancher Incentives)

Incentives for Certain Farmers and Ranchers 2008 Act, Sec 2708: Adds incentives for socially-disadvantaged farmers, ranchers, and Indian tribes to increase access to conservation programs.

2.6.8.1 No Action Alternative

Section 1244(a) Beginning Farmers and Ranchers of the 2002 Farm Bill provides incentives to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs.

2.6.8.2 Alternative 1

Alternative 1 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for cost share rates at least 25 percent above otherwise applicable rates (up to 90 percent) and would provide advance payments of up to 30 percent of the amount determined for the purchase of materials and services. The USDA budget would require a PAYGO offset.

2.6.8.3 Alternative 2

Alternative 2 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for signup incentives, most likely for CPs that currently are eligible for SIPs. The USDA budget would require a PAYGO offset.

2.6.9 PROVISION 9 (Pollinator Conservation)

Pollinators 2008 Act, Sec 2708: Using any conservation program, the Secretary may, as appropriate, encourage the development of habitat for native and managed pollinators; and use of conservation practices that benefit native and managed pollinators.

2.6.9.1 No Action Alternative

Currently, only general methods to reduce impacts to pollinators are offered in NRCS conservation practice standards and technical guides (such as spot treatment of herbicides and pesticides, or not harvesting at peak flowering). Also, some States such as Michigan have initiated SAFE projects designed to benefit pollinators. The Michigan CRP-SAFE Native Pollinator Planting goal is to create 2,500 acres of pollinator habitat consisting of native grasses and wildflowers in eligible counties that are part of an orchard/vineyard/perennial fruit producing area (FSA 2009d). A minimum enrollment of two acres, which must be at least 100 feet wide, is required. Mid-contract management designed to ensure plant diversity, wildlife habitat, and protection of soil and water resources are required on all contracts. Up to 90 percent cost share is offered for preparation and establishment of the conservation planting, as well as a \$100 per acre one-time signing bonus, and an annual rental payment including payments for maintenance.

2.6.9.2 Alternative 1

This alternative would include the development of a new Pollinator Habitat Conservation Practice with a goal of up to five percent of enrolled acres into new pollinator friendly habitat. Also, existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees could be modified to benefit native and managed pollinators by including plant species beneficial for pollinators at specified composition rates and other such practices.

2.6.9.3 Alternative 2

Under this alternative, only the existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators by including plant species beneficial for pollinators at specified composition rates and other such practices.

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3.0 AFFECTED ENVIRONMENT

This SEIS focuses descriptions of the potentially affected lands and resources on those lands that are either eligible to be enrolled in CRP under the 2002 and 2008 Farm Bill provisions, or on lands currently enrolled in the program. As such, these potentially affected lands are:

- cropland that is planted or considered planted to an agricultural commodity four of the previous six years from 1996 to 2001 and 2002 to 2008 and which is physically and legally capable of being planted in a normal manner to an agricultural commodity; or
- have a weighted average EI for the three predominant soils on the acreage offered of eight or higher (considered highly erodible land or HEL); or
- land currently enrolled in CRP scheduled to expire September 30 of the fiscal year the acreage is offered for enrollment; or
- cropland located within National- or State-designated Conservation Priority Areas; or
- environmentally sensitive land of special significance; or
- land suitable for riparian buffers, wildlife habitat buffers, wetland buffers, filter strips, wetland restoration, grass waterways, field windbreaks, shelterbelts, living snow fences, contour grass strips, salt tolerant vegetation, or shallow water areas for wildlife; or
- land within an EPA-designated public wellhead area.

Agricultural lands potentially impacted by CRP may be classed as cropland, pastureland, range lands, or private non-industrial forest lands. The general land classes potentially impacted by CRP such as grasslands and forestlands are described in detail in the 2003 CRP PEIS (FSA 2003).

3.1 BIOLOGICAL RESOURCES: VEGETATION

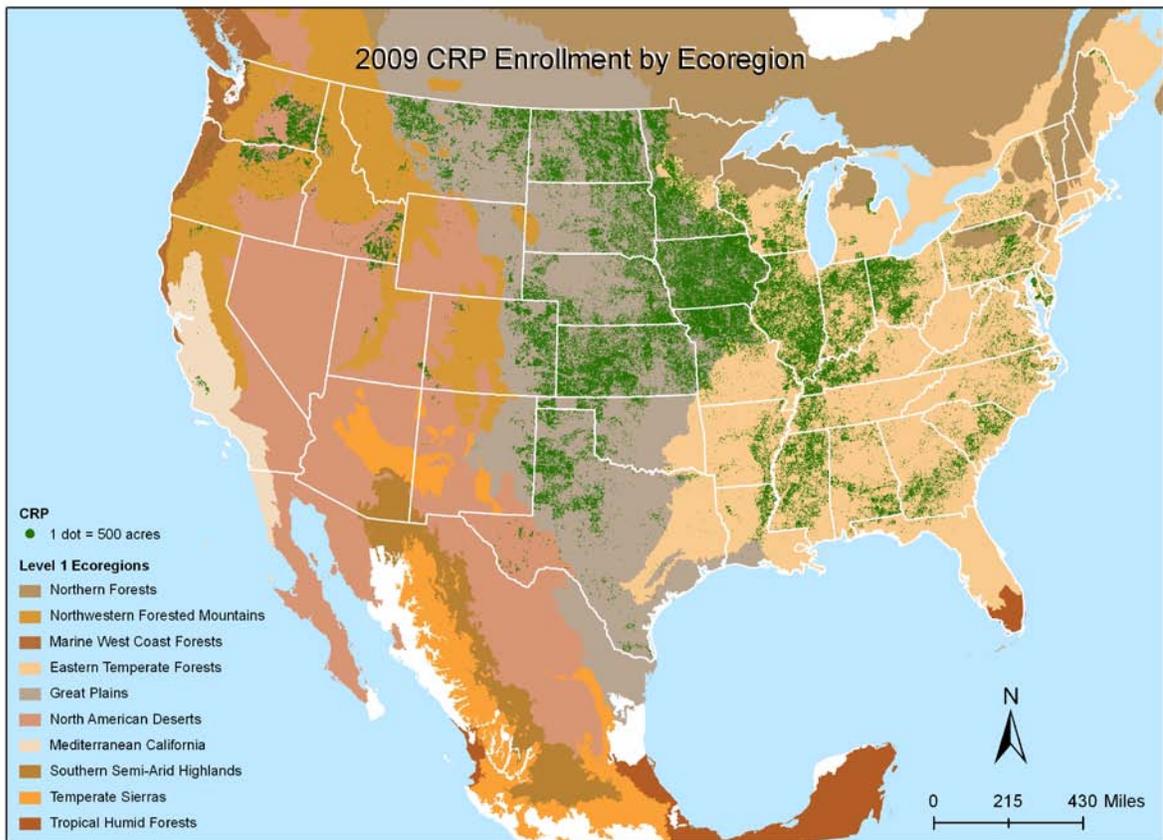
3.1.1 Definition of the Resource

Biological resources include plant and animal species and the habitats in which they occur. This analysis discusses vegetation specifically referring to the plant species, both native and introduced (including invasive and noxious species), which characterize a region. Therefore, this analysis focuses on vegetation found on lands that may be enrolled in CRP, or are already enrolled in the program.

3.1.2 Existing Conditions

As lands within the entire U.S. and its territories may be enrolled in CRP, it is not possible to describe in detail all vegetation potentially present. As noted above, vegetation on lands that are eligible for enrollment is typically found on cropland, pastureland, rangelands, privately owned forests, riparian buffers, floodplains, and wetlands. The 2003 CRP PEIS provides a summary description of the general vegetation found on these eligible land types (FSA 2003) and Chapter 1 and Appendix J characterize the possible vegetation types of CRP conservation covers.

Since it is not possible to describe all vegetation potentially present on CRP eligible lands, and vegetation is so dependent upon climate and soils, this analysis further summarizes vegetation based upon major regional types utilizing the concept of ecoregions. Ecoregions are areas of relatively homogenous vegetation, soils, climate, and geology, each with associated wildlife adapted to that region. The Commission for Environmental Cooperation (CEC) Ecoregion Level I map (CEC 1997) was used to identify major ecoregions within the continental U.S. and provides summary descriptions of vegetative types found therein. There are ten CEC Level I ecoregions in the lower contiguous 48 States: Northern Forest, Northwestern Forested Mountains, Marine West Coast Forests, Eastern Temperate Forests, Great Plains, North American Deserts, Mediterranean California, Southern Semi-arid Highlands, Temperate Sierras, and Tropical Wet Forests (Figure 3.1-1, 2009 CRP Enrollment by Ecoregion). These ecoregions do not correspond to State or county boundaries. Their vegetative characteristics are summarized in Appendix J.



Source: CEC 1997 and FSA 2009a.

Figure 3.1-1. 2009 CRP Enrollment by Ecoregion

Climate greatly affects vegetation type and the health and vigor of plants. The average length of the growing season, or freeze-free period in the U.S. ranges from approximately 120 days to 340 days (Farmer's Almanac 2009). Precipitation amounts vary widely across the U.S. with

average annual precipitation ranges from less than five inches per year to greater than 180 inches per year (Figure 3.1-2, Average Annual U.S. Precipitation) (Linacre and Geerts 1998). Habitat types also vary in precipitation rates. For example, precipitation in the prairies can reach from about 12.6 inches in the shortgrass prairie to 21.7 inches in the tallgrass prairies (Blue Planet Biomes 2009). Climate variation throughout the U.S. affects the types of crops and conservation covers planted, irrigation requirements, the harvest period, crop yields, and the impacts of management activities – what may be beneficial in one area may have detrimental impacts in another.

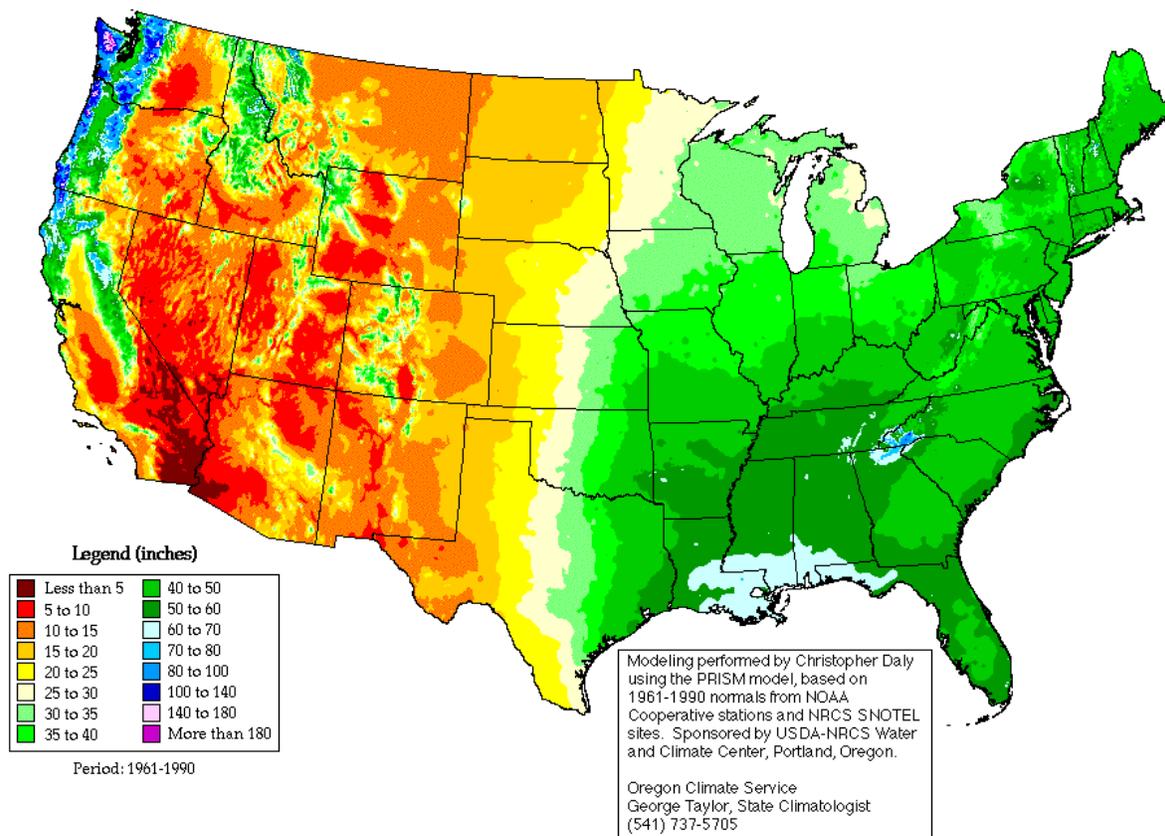


Figure 3.1-2. Average Annual U.S. Precipitation

Lands eligible for CRP include cropland (lands used for the production of adapted crops for harvest including cultivated and noncultivated), hayland (cropland managed for the production of forage crops that are machine harvested including grasses, legumes, or a combination of both), horticultural cropland (cropland used for growing fruit, nut, berry, vineyard, and other bush fruit and similar crops including nurseries or ornamental plantings), irrigated cropland (land that shows evidence of being irrigated by ditches, pipes, or other conduits during the year of the inventory or of having been irrigated during two or more of the last four years), pastureland (land managed primarily for the production of introduced forage plants for livestock grazing which may consist of a single species in a pure stand, a grass mixture, or a grass-legume mixture), and

rangeland (plant cover is composed principally of native grasses, grasslike plants, forbs or shrubs suitable for grazing and browsing, and introduced forage species that are managed like rangeland) (NRCS 2007b). Additional lands eligible for CRP include environmentally desirable lands that do not meet the crop history requirements such as wetlands, riparian areas, or rare and declining habitats. Conservation Practice covers include native and introduced species of forested tree stands, grasslands, shrubs, forbs, and wetland plants. Plant species established under CRP are selected according to the purpose of the practice and particular characteristics of the land proposed for enrollment. Particular plants and seed mixes for each practice are developed by NRCS for every State and in some instances on a county-level. Under certain CPs, the CRP participant may choose a particular species to benefit (for example quail or duck nesting habitat), and the plantings are planned accordingly.

Almost all conservation practices require establishment and/or restoration to create and maintain conservation covers. Establishment of these conservation practices requires ground work activities including clearing and planting, which can impact existing vegetation. All practices require some kind of active management such as prescribed burning, disking, tree thinning, fertilization, periodic mowing, and the application of herbicides and/or pesticides. Prescribed burning reduces the likelihood and severity of wildfires by burning off dead or excess organic materials. When done correctly, prescribed burns help regenerate grasses, control invasion by undesirable species and protect forests. Disking is not intended to destroy the existing grass stand, and when applied correctly, can improve plant vigor and overall stand health, and potentially improve plant diversity (Amundson 2005). Disking incorporates dead material into the soil, promotes new tiller growth in bare areas, splits the crowns of bunchgrasses stimulating their growth, and reduces competition with sod-bound grass species (*ibid.*). Tree thinning provides room for healthy trees to mature, removes damaged or diseased trees, and opens the canopy so that understory plants may become established. Fertilizers may be applied in certain instances during conservation cover establishment to assist plant growth and after establishment to maintain vegetative cover, aide in natural regeneration, and enhance production. Mowing of conservation covers may be completed during the establishment period of certain practices to reduce competition from annual weeds and helps prevent noxious weeds from proliferating and spreading to adjacent fields. Herbicide application is used to deter invasive plant species or in the case of pine forests, deter woody undergrowth. Applications of herbicides should be specific to the targeted species and controlled to ensure the conservation cover remains unaffected.

Harvesting and grazing are activities allowed under CRP. Harvesting (tree thinning) may be allowed on tree plantings such as CP3, CP3A, CP11 and both harvesting or grazing may be conducted on introduced grass plantings (CP1), permanent native grasses (CP2), grasses already established (CP10), permanent wildlife habitat (CP4), permanent covers to reduce salinity (CP18B) and permanent salt tolerant covers (CP18C). Certain other CPs adjacent to cropland may be incidentally gleaned. Unmanaged CRP grasslands can have thatch buildup (accumulation of dead plant matter) which prevents effective disking and/or interseeding efforts. Harvesting or grazing during the year prior to interseeding can greatly reduce mulch or thatch build-up. In order to maintain plant health and vigor, harvesting and grazing shall follow state specific NRCS Conservation Practice Standard 328 which stipulates the minimal stubble height

for individual plant species and dates when harvest should not occur as determined by the dominant plant species of the stand, or twig removal for browse. If proper management techniques are not followed, the vigor of a plant stand can be reduced, leading to a greater potential for desirable plants, identified by the conservation practice, to be replaced by undesirable species such as woody plants. With proper management techniques, light to moderate defoliation would improve the plants' abilities to compete against undesirable species.

All of these activities associated with CRP have the potential to negatively impact vegetation if not conducted in accordance with existing practice standards, provisions, guidelines and the Conservation Plan. Prior to enrollment, a site-specific environmental evaluation would be conducted that identifies the particular vegetation species present and the potential impacts of the conservation practices and management practices (including haying and grazing) proposed for those lands. Any authorized activity should not defeat the purpose of enrolling lands in the CRP or threaten the long-term viability of the conservation vegetative stand installed. The site-specific evaluation would identify those situations particular to individual lands where additional environmental evaluation under NEPA may be required.

3.1.2.1 Invasive and Noxious Plant Species

Establishment of conservation practices includes the planting of native and introduced species and control or eradication of invasive or noxious species. A large number of invasive plant species have been introduced to and established within the U.S. (Table 3.1-1). These introductions range from accidental, such as contamination of seed commodities, to deliberate, such as planting for erosion control or as ornamental plantings.

Executive Order 13112 protects the U.S. from invasive species unless benefits clearly outweigh potential harms. In addition, the Plant Protection Act (PPA), which became law in June 2000 as part of the Agricultural Risk Protection Act, consolidates all or part of 10 USDA existing laws into one comprehensive law, including the authority to regulate plants, plant products, certain biological control organisms, noxious weeds, and plant pests (USDA 2002). The EO 13112 defines "native species" as a species that, with respect to a particular ecosystem, other than as a result of an introduction, historically occurred or currently occurs in that ecosystem. An "alien" or "non-native" species is any species, with respect to a particular ecosystem, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem; an "invasive" species is a nonnative "species whose introduction does or is likely to cause economic or environmental harm or harm to human health". The PPA defines a "noxious weed" as any plant or plant product that can directly or indirectly bring harm to agriculture, the public health, navigation, irrigation, natural resources, or the environment; this Act expands the definition of noxious weed from the definition in the 1974 Federal Noxious Weed Act, which included only weeds that were of foreign origin, new to, or not widely prevalent in the U.S. (USDA 2002). Noxious weeds are identified and listed on State and Federal lists.

Table 3.1-1. List of Major Economically and Ecologically Important Invasive Weed Species in the U.S.

Habitat	Scientific name	Common name	Plant Type	Distribution
Riparian	<i>Ailanthus altissima</i>	tree-of-heaven	Tree	Widespread throughout U.S.
	<i>Albizia julibrissin</i>	mimosa	Shrub/Small Tree	Expanding range in tropical regions, southeastern U.S.
	<i>Arundo donax</i>	giant reed	Grass	Expanding range in Pacific Coast states, Arizona
	<i>Casuarina equisetifolia</i>	Australian pine	Tree	Expanding range in Hawaii and Florida
	<i>Delairea odorata</i>	Cape ivy	Vine	Expanding range in California
	<i>Elaeagnus angustifolia</i>	Russian olive	Shrub/Small Tree	Sporadic infestations throughout most of U.S.
	<i>Lepidium latifolium</i>	perennial pepperweed	Forb	Rapidly expanding range in West
	<i>Phragmites communis</i>	common reed	Grass	Widespread in eastern U.S.
	<i>Sapiem sebiferum</i>	Chinese tallow	Tree	Carolinas to Florida
	<i>Tamarix spp.</i>	tamarisk	Shrub/Small Tree	Rapidly expanding range in West
Aquatic or Wetlands	<i>Alternanthera philoxeroides</i>	alligatorweed	Forb	Widespread in southeastern U.S., some infestations in California
	<i>Egeria densa</i>	Brazilian elodea	Forb	West of the Mississippi River; some in California and southeastern U.S.
	<i>Eichhornia crassipes</i>	water hyacinth	Forb	Widespread throughout southeastern U.S. and California
	<i>Hydrilla verticillata</i>	hydrilla	Forb	Widespread in Southeast and mid-Atlantic coast to Connecticut, threatens western states
	<i>Lythrum salicaria</i>	purple loosestrife	Forb	Widespread in northern and central states, expanding range in West
	<i>Melaleuca quinquenervia</i>	melaleuca	Tree	Widespread in Florida
	<i>Myriophyllum aquaticum</i>	parrotfeather	Forb	Widespread throughout U.S.
	<i>Myriophyllum spicatum</i>	Eurasian watermilfoil	Forb	Widespread throughout U.S.
	<i>Salvinia molesta</i>	giant salvinia	Forb	Well established in Texas, new infestations in California and other western and southeastern states
	<i>Spartina alterniflora</i>	smooth cordgrass	Grass	Native in estuaries of eastern U.S., spreading along coast of Pacific Northwest
	<i>Trapa natans</i>	water chestnut	Forb	Expanding range in northeastern U.S.
Rangeland and Wildland	<i>Acacia auriculiformis</i>	earleaf acacia	Shrub/Small Tree	Expanding range in Southeast
	<i>Acroptilon repens</i>	Russian knapweed	Forb	Widespread throughout U.S., particularly western states
	<i>Aegilops spp.</i>	goatgrasses	Grass	Widespread in western U.S.
	<i>Ammophila arenaria</i>	European beachgrass	Grass	Isolated infestations along sand dunes of California
	<i>Andropogon virginianum</i>	broomsedge	Grass	Hawaii (native to southeastern U.S.)
	<i>Bromus madritensis ssp. rubens</i>	red brome	Grass	Widespread in western states, especially Mojave and Sonoran deserts
	<i>Bromus tectorum</i>	downy brome	Grass	Widespread throughout U.S., particularly western states
	<i>Cardaria draba</i>	hoary cress	Forb	Widespread in western U.S.
	<i>Carduus nutans</i>	musk thistle	Forb	Widespread throughout U.S.
	<i>Carpobrotus edulis</i>	iceplant, sea fig	Shrub	Spreading in coastal areas of West
	<i>Centaurea calcitrapa</i>	purple starthistle	Forb	Expanding range in California

Table 3.1-1. List of Major Economically and Ecologically Important Invasive Weed Species in the U.S. (cont'd)

Habitat	Scientific name	Common name	Plant Type	Distribution
Rangeland and Wildland	<i>Centaurea diffusa</i>	diffuse knapweed	Forb	Widespread in western U.S.
	<i>Centaurea maculosa</i>	spotted knapweed	Forb	Widespread throughout U.S., particularly western states
	<i>Centaurea solstitialis</i>	yellow starthistle	Forb	Western states, particularly California, Idaho, Oregon
	<i>Centaurea squarrosa</i>	squarrose knapweed	Forb	Expanding range in western U.S.
	<i>Chondrilla juncea</i>	rush skeletonweed	Forb	Expanding range in western U.S.
	<i>Cirsium arvense</i>	Canada thistle	Forb	Widespread throughout U.S.
	<i>Cirsium vulgare</i>	bull thistle	Forb	Widespread throughout U.S.
	<i>Conium maculatum</i>	poison hemlock	Forb	Widespread throughout U.S.
	<i>Convolvulus arvensis</i>	field bindweed	Vine	Widespread throughout U.S.
	<i>Cortaderia jubata</i>	jubatagrass	Grass	Widespread along California and Oregon coast
	<i>Cortaderia selloana</i>	pampasgrass	Grass	Widespread along California and Oregon coast
	<i>Crupina vulgaris</i>	common crupina	Forb	Expanding range in California and northwestern states
	<i>Cynara cardunculus</i>	artichoke thistle	Forb	Expanding range in California
	<i>Cynoglossum officinale</i>	houndstongue	Forb	Expanding range in many regions of U.S.
	<i>Cytisus scoparius</i>	Scotch broom	Shrub	Widespread throughout Pacific Coast states
	<i>Ehrharta spp.</i>	Veldtgrass	Grass	Expanding range in coastal areas of California
	<i>Euphorbia esula</i>	leafy spurge	Forb	Widespread in northern states, particularly western U.S.
	<i>Foeniculum vulgare</i>	fennel	Forb	Widespread throughout Pacific Coast states, especially southern California
	<i>Genista monspessulana</i>	French broom	Shrub	Widespread in western U.S.
	<i>Hedychium gardnerianum</i>	Kahili ginger	Forb	Hawaii
	<i>Hieracium aurantiacum</i>	orange hawkweed	Forb	Expanding range in Northwest
	<i>Hieracium pratense</i>	meadow hawkweed	Forb	Expanding range in Northwest
	<i>Hypericum perforatum</i>	St. Johnswort	Forb	Widespread in western U.S.
	<i>Imperata cylindrica</i>	cogon grass	Grass	Expanding range in tropical and sub-tropical areas of U.S., southeastern U.S. to Texas and southern California
	<i>Isatis tinctoria</i>	Dyer's woad	Forb	Spreading in Utah, California, and other western states
	<i>Lantana camara</i>	lantana	Shrub	Expanding range in Florida and Hawaii
	<i>Lepidium latifolium</i>	perennial pepperweed	Forb	Rapidly expanding range in West
	<i>Leucanthemum vulgare</i>	oxeye daisy	Forb	Widespread throughout U.S.
	<i>Linaria dalmatica</i>	Dalmatian toadflax	Forb	Expanding range in West
	<i>Linaria vulgaris</i>	yellow toadflax	Forb	Expanding range in West
	<i>Lonicera japonica</i>	Japanese honeysuckle	Vine	Eastern and central U.S. and Hawaii
	<i>Melia azedarach</i>	Chinaberry tree	Shrub/Small Tree	Spreading in Southeast
<i>Miconia calvescens</i>	Miconia	Shrub/ Small Tree	Hawaii	

Table 3.1-1. List of Major Economically and Ecologically Important Invasive Weed Species in the U.S. (cont'd)

Habitat	Scientific name	Common name	Plant Type	Distribution
Rangeland and Wildland	<i>Myrica faya</i>	firebush	Shrub/Small Tree	Hawaii
	<i>Onopordum acanthium</i>	Scotch thistle	Forb	Widespread throughout West
	<i>Passiflora</i>	mollissima banana poka	Vine	Hawaii
	<i>Polygonum perfoliatum</i>	mile-a-minute	Forb	Expanding range in East
	<i>Potentilla recta</i>	sulfur cinquefoil	Forb	Widespread in northern states
	<i>Psidium calleianum</i>	strawberry guava	Tree	Hawaii
	<i>Pueraria lobata</i>	kudzu	Vine	Widespread in Southeast to Pennsylvania and Illinois
	<i>Rubus argotus</i>	Florida prickly blackberry	Shrub	Hawaii (native to southeastern U.S.)
	<i>Salsola tragus</i>	Russian thistle (tumbleweed)	Forb	Widespread in West
	<i>Salvia aethiopsis</i>	Mediterranean sage	Forb	Expanding range in western U.S.
	<i>Schinus terebinthifolius</i>	Brazilian pepper	Shrub/Small Tree	Expanding range in southwestern U.S.
	<i>Potentilla recta</i>	sulfur cinquefoil	Forb	Widespread in northern states
	<i>Senecio jacobaea</i>	tansy ragwort	Forb	Widespread in Pacific Northwest
	<i>Solanum viarum</i>	tropical soda apple	Shrub	Spreading in southeastern U.S.
	Cropland	<i>Spartium junceum</i>	Spanish broom	Shrub
<i>Taeniatherum caput-medusae</i>		medusahead	Grass	Widespread in west
	<i>Ulex europaeus</i>	gorse	Shrub	Isolated infestations on Pacific Coast
	<i>Abutilon theophrasti</i>	velvetleaf	Forb	Widespread throughout much of U.S.
	<i>Amaranthus retroflexus</i>	redroot pigweed	Forb	Widespread throughout U.S.
	<i>Aegilops cylindrica</i>	jointed goatgrass	Grass	Widespread throughout U.S.
	<i>Chenopodium album</i>	common lambsquarters	Forb	Widespread throughout U.S.
	<i>Cirsium arvense</i>	Canada thistle	Forb	Widespread throughout U.S.
	<i>Convolvulus arvensis</i>	field bindweed	Vine	Widespread throughout U.S.
	<i>Cyperus esculentus</i>	yellow nutsedge	Grass	Widespread throughout U.S.
	<i>Cyperus rotundus</i>	purple nutsedge	Grass	Widespread throughout U.S.
	<i>Echinochloa crus-galli</i>	barnyardgrass	Grass	Widespread throughout U.S.
	<i>Elytrigia repens</i>	quackgrass	Grass	Widespread throughout U.S.
	<i>Kochia scoparia</i>	kochia	Forb	Primarily invasive in western U.S.
	<i>Setaria spp.</i>	foxtails	Grass	Widespread throughout U.S.
	<i>Sorghum halapense</i>	Johnsongrass	Grass	Widespread throughout U.S.
	<i>Striga asiatica</i>	witchweed	Forb	Eradicated or close to eradication in North and South Carolina

Source: Mullin *et al.* 2000

Use of introduced or non-native vegetation on CRP lands occurs where environmental conditions prohibit or severely impede the use of natives, or where the management objectives justify it. Some introduced species can stabilize the soil more quickly, protecting the soil and valuable water resources, or they may be easier to establish, providing more cost-effective conservation covers.

Non-native, exotic, or invasive species are often introduced from other regions or countries accidentally, intentionally, or through habitat change induced by humans or nature. Often these non-native species have no natural controls in the area where they are released, allowing their populations to increase rapidly. A non-native species becomes invasive when it out-competes native species and replaces native species in natural plant communities. Some non-native species can damage U.S. agriculture by reducing crop and livestock production or threatening export potential, with impacts on U.S. prices, consumers, and trade. Some species have a particularly high potential for damage because, once introduced in the U.S., they lack natural enemies and their populations can increase and spread to levels that are difficult and costly to eradicate (National Invasive Species Advisory Committee [ISAC] 2006).

Invasive species are spread in many ways including introduction as ornamental plants and groundcover in lawns and gardens, seeds can be carried by wind, fire, water, or animals; they can hitchhike on the shoes of hikers, tire treads of vehicles, boats and boat trailers, and in the intestines of animals such as livestock, horses, and wildlife. Plant traits that enable a given plant to be invasive under conducive biogeographical contexts include perennial roots or rhizomes, prolific seed production, adaptability to severe conditions such as highly saline, dry or wet soils, resistance to herbicides, resistance to pests and disease, or ability to suppress the growth of adjacent plants (i.e., allelopathic). These traits may be natural in some native or introduced species, selectively bred as desirable resulting in new plant cultivars, or genetically engineered.

Invasive plant species can have significant negative impacts on biological resources including decreases in native wildlife and plant species populations, alterations to rare plant communities, or changing ecological processes that native plant species and other desirable plants and wildlife depend on for survival (including impacts upon native pollinators) (National Invasive Species Council 2008). Invasive plant species could potentially cause or vector decimating plant diseases, prevent native and agricultural species from reproducing, suppress the growth of neighboring plants, out-compete desirable species for nutrients, light, moisture or other vital resources; and adversely impact erosion rates, hydrologic regimes and soil chemistry such as pH and nutrient availability. Natural wildfire cycles could also be altered; invasions by fire-promoting grasses could alter entire plant communities, eliminating or sharply reducing populations of many native plant species (*Ibid*).

Eradication or control of invasive and noxious species can be an arduous and expensive task often including multiple methods of treatment to be effective. The application of herbicide, grazing, burning, mechanical or manual control (cutting, excavating), and mowing are all methods that can be used to control and eradicate invasive species. While it may not be possible to fully eradicate an invasive plant species, management activities might control further spread or takeover. Some species of invasive plants require timed treatment for eradication or control such as when the plant is dormant, young, or prior to flowering/seeding. Additionally, vegetation may become accustomed to certain methods of control and other methods may be required to aid in management (NRCS Practice Standard 595, Pest Management).

3.1.2.2 Common Invasive Species

Kudzu (*Pueraria lobata*) is a highly invasive vine spread throughout the southeast. A Japanese species, kudzu was introduced in the late 1800's as an ornamental plant (Shores 2009). In the

1920's kudzu was used as cattle forage and in the 1940's as a method of erosion control (*Ibid.*). The vines spread rapidly, as much as a foot per day in the summer months, climbing anything in their path. Kudzu has taken over seven million acres in the U.S., including acreage in 20 States with the majority of invaded land located in the southeast (USDA 2009). The vines choke out forests depriving native plants of sunlight. Eradication of a larger patch may require as many as five to 10 years of monitoring and control after initial treatment (CWC Chemical 2009). Eradication methods for this species include repeated herbicide application, burning, grazing, and manual/mechanical removal. Other common forest invasive species include shrub honeysuckle (*Lonicera* spp.), multiflora rose (*Rosa multiflora*), and garlic mustard (*Alliaria petiolata*) (Vermont Department of Forests, Parks, and Recreation 2005). Currently, CRP allows limited grazing where kudzu has infected CRP acreage under the limited grazing provisions of 2-CRP.

Yellow starthistle (*Centaurea solstitialis*), an aggressive annual forb, is native to southern Europe and western Eurasia (Zouhar 2002). It has been documented in 41 States; although infestations are most severe in California, Oregon, Idaho, and Washington. It can displace vegetation in natural areas, rangelands, and pastures; forming dense impenetrable stands. Yellow star thistle invades annual grassland ecosystems, using the deep-soil moisture left after shallow-rooted annual grasses have died in the early summer. It can reduce soil moisture levels greater than six feet in depth. Control consists of preventing new seed recruitment, depleting the soil seedbank, properly timed mowing, and establishing and maintaining healthy native plant communities that use soil moisture and shades the soil surface to prevent establishment.

Common buckthorn (*Rhamnus cathartica*), a shrub or small tree, is native to Eurasia; it was introduced to the U.S. as an ornamental shrub (Wieseler 2009). In the U.S., it is primarily found from the border of Canada (Nova Scotia to Saskatchewan) south into Missouri and east into New England. The plant prefers areas with little shade, and often invades gaps in forests, prairies, and open fields. They form dense thickets that will often outcompete and eliminate native species from an area. Management techniques include uprooting of seedlings, prescribed burning, and application of herbicides.

Each State in the U.S. has its own noxious weed laws and most undesirable plants list. Control of these weed species is desired to maintain a conservation cover and vegetative community to ensure the CRP conservation practice meets its intended purpose.

3.2 BIOLOGICAL RESOURCES: WILDLIFE

3.2.1 Definition of the Resource

Biological resources include plant and animal species and the habitats in which they occur. This analysis discusses wildlife species and their habitat. Wildlife refers to the animal species (mammals, birds, amphibians, reptiles, invertebrates, and fish/shellfish), both native and introduced, which characterize a region.

3.2.2 Existing Conditions

The geographic scale of the lands affected by the select provisions of the 2008 Farm Bill encompasses the entire U.S. and its territories; hence, a great variety of terrestrial and aquatic

plant and animal species may be affected by the Proposed Action Alternatives. Given the national scale of CRP and the programmatic level of this analysis, it is not feasible to list all of the species that may be present on lands eligible for enrollment or already in the program, but broad generalizations based upon the organizing principle of terrestrial ecoregions can be made. Ecoregions are areas of relatively homogenous soils, vegetation, climate, and geology, each with associated wildlife adapted to that region. The major terrestrial ecoregions of the continental U.S. and common wildlife species as described by the Commission for Environmental Cooperation (CEC 1997) are briefly summarized in Appendix J.

Over the past four decades, populations of wildlife species have declined throughout the country. These declines have been attributed to loss of habitat associated with intensive farming, forest management, reforestation, advanced natural succession, fire exclusion, invasion of exotic plants, and urbanization (NRCS 2009b). Agriculture dominates human uses of land (Robertson and Swinton 2005). In the U.S., non-Federal, rural land uses comprise 71 percent of the contiguous 48 States (approximately 1.4 billion acres) (USDA 2007). In 2007, 920.1 million acres (47%) of the contiguous 48 States were devoted to crop, CRP, pasture, or rangeland uses (NASS 2009a). How these lands are maintained influences the function and integrity of ecosystems and the wildlife populations that they support.

Conservation Reserve Program lands including wetlands (installed under CP9, CP23, CP23a, CP27, CP31, and CP37) and forestlands (installed under CP3, CP3A, CP11, CP31, CP32, and CP36) provide extremely important habitats for a diverse assortment of wildlife. The CRP has been especially important where cropland had replaced native grassland on soils marginally productive for agriculture, such as the U.S. Prairie Pothole Region (which includes portions of Minnesota, South Dakota, Iowa, Nebraska, North Dakota, Montana, and Wyoming [Figure 3.2-1]). Losses of native grasslands to agriculture and other land uses have exceeded 56 million acres (62 percent) of the original 90 million acres of native grassland (Ducks Unlimited [DU] 2009). The role of CRP in establishing and maintaining native and introduced grasslands in this region has helped to restore the wildlife, soil, and water quality values (Szentandrási *et al.* 1995). It has helped reverse the decline in some species of grassland song birds, and has increase populations of ring-neck pheasants (*Phasianus colchicus*), Sharp-tailed Grouse (*Tympanuchus phasianellus*), and other upland game birds. In 2000, the USFWS decided not to list the Columbian Sharp-tailed Grouse under the ESA in substantial part due to the relative habitat security that CRP lands in Idaho, Wyoming, Colorado and Utah and other states provide for the species (USFWS 2008a; Colorado Division of Wildlife 2009; Mitchell and Openshaw 2002; Hoffman and Thomas 2007).

Lands in the CRP have both conserved and restored bird populations because they provide critical habitat during all periods of the year. During the spring and summer, CRP lands provide precisely the dense nesting cover needed by both migratory and resident bird species. During the winter, CRP lands help protect resident birds from predators and winter storms. Rather than plowed fields or isolated grassland patches, CRP lands provide extensive acreage of habitat for the benefit of many wildlife species.



Figure 3.2-1. Prairie Pothole Region

3.2.2.1 *Environmental Sustainability and Biological Diversity*

Environmental sustainability in the simplest terms is ensuring that actions we take today do not adversely impact the long-term maintenance of ecosystem components and functions in the future, and has been of increasing concern in the last decade. Wildlife diversity is crucial to sustainability. Biodiversity is integrally related to sustainability and is an indicator of the overall health or condition of the environment. The higher the biodiversity of an ecosystem, the more sustainable it is, and conversely, lower biodiversity equates less sustainability. Biological diversity helps maintain a cycled environment; each organism benefits another by acting as a food source or by its actions. Removal of one or more of these organisms could have devastating impacts on the other species that rely upon it. While wildlife preserves are an important component of biodiversity conservation, effective protection of species will often take place on land that is used primarily for purposes other than wildlife habitat (Szentandras *et al* 1995). Lands enrolled in CRP helps conserve biologically diverse landscapes, and are particularly beneficial in agricultural settings where monotypical crop production occurs.

Pollinators support biodiversity, as there is a positive correlation between plant diversity and pollinator diversity (Tepedino 1979). Pollinators, including bees, wasps, butterflies, moths, bats, birds, and some mammals, are important for native lands and farming. Approximately three-

quarters of all flowering plants rely upon animals to pollinate their flowers (FSA 2009d). In addition to agricultural crops such as fruits and vegetables, these plants include seed-producing wildflowers, fruit producing shrubs and nut producing trees which provide a source of food for many wildlife species; however, through disease, competition, pesticide use, and loss of natural habitat, both natural and introduced pollinator numbers have declined. CRP lands provide additional habitat for pollinator forage and cover. Preliminary U.S. Geological Survey analysis by Jeff Pettis, Ned Euliss, Marla Spviak indicate a positive correlation between CRP lands and North Dakota honeybee health and productivity (Euliss 2009) and (Pettis 2009)

During the spring and summer months, green growing plants provide browse for rabbits, deer, other mammals, and some birds, while also being important as a forage base for insects. Birds, reptiles, amphibians, and many mammals will feed on the insects that flourish in a diverse planting of grasses, legumes and forbs provided by CP1, CP2, CP4, CP25, CP29, CP37 and SAFE (CP38). Insects are critical during the brood rearing time as they provide a protein-rich diet to fast growing young as well as provide a nutrient-rich diet for migratory birds. Shrubs, especially those that fruit during the summer, add a food component for birds and browse for deer and other animals. While insects remain an important food source during the early fall, food preferences change to seeds and fruits in the late fall and winter months. Food plots (CP12) (annual or perennial plantings of grain, grass or legumes) can be valuable to upland game birds and ungulates (deer, moose, elk, etc.). The crops planted depend on the wildlife species that are targeted under the CP and can include corn, sorghum, sunflowers, soybeans, buckwheat, millet, barley, rye, spring or winter wheat flax, alfalfa, or clovers. This varied landscape and diet increases diversity of wildlife, especially song birds, and ultimately the sustainability of wildlife populations.

3.2.2.2 Habitat Fragmentation

Habitat fragmentation occurs when a large region of habitat has been broken down, or fragmented, into a collection of smaller patches of habitat. Habitat fragmentation worsens the problem of habitat loss for grassland and wetland birds as areas of grasslands and wetlands may be too small, too isolated, and too influenced by edge effects to maintain viable populations of some species (Johnson 2001).

The size of a grassland patch and its surrounding landscape can markedly influence the use of that site by grassland birds. Some patches may be too small to be colonized by certain species, or birds using smaller patches may suffer more from competition or predation than do birds in larger patches.

Wildlife “generalist” species, such as white-tailed deer (*Odocoileus virginianus*) and raccoon (*Procyon lotor*), are those that can reside in a variety of habitats or habitat conditions and can make use of a variety of different resources, while “specialist” species, such as the red cockaded woodpecker (*Picoides borealis*) or black-footed ferret (*Mustela nigripes*), are those that have very specific habitat requirements can only thrive in a narrow range of environmental conditions or have a limited diet. Planting a variety of vegetation within a plot benefits a wider variety of wildlife species than limiting vegetation to a monoculture (one plant species).

A dynamic mosaic environment is most beneficial in providing for diverse wildlife. Within agricultural areas, beneficial wildlife areas are not evenly distributed, and the potential for sustainable wildlife habitat at a given location is dependent on the landscape context. Specifically, population response is scale-dependent because the population capacity of a landscape is a function of the percentage of the usable landscape (Guthery 1997). Populations show greater response when the necessary habitat size is created within a given geographic area, that is, a given intensity of habitat management will produce a greater response if conducted over a larger geographic region. Therefore, to further benefit wildlife species that will most likely respond to habitat restoration, focal areas for conservation and restoration should be considered.

Conservation Reserve Program lands may best serve wildlife by enrolling contiguous lands with complementary habitat types. Plot size also plays a role in maintaining wildlife habitat. While some species have a small breeding and foraging territories, others, such as northern harrier, require expansive acreage for support. Plot size has been shown to influence the density or occurrence of several species in a number of studies (Johnson 2001). Effects of small plot size are likely to be more pronounced in landscapes where similar habitat is scarce than in landscapes where such habitat is common (*Ibid.*). For example, Andrén (1994) suggested that "the decline in population size of a species living in the original habitat seems to be linearly related to the proportion of original habitat lost, at the initial stages of habitat fragmentation. At some threshold, area and isolation of patches of original habitat will also begin to influence the population size in the original habitat patches." Andrén also found that the presence of a given species in a patch may be a function not only of patch size and isolation, but also the kind of the neighboring habitat and of the species composition in the plots (*Ibid.*). Habitat generalists may survive in very small habitat plots because they may be able to utilize resources in surrounding areas. For example, the habitat requirements for chipmunks are usually met on a small woodlot while a white-tail deer requires from one-half to three square miles depending on the quality of the habitat.

Under the CEAP, the USDA has sponsored a series of quantitative studies estimating wildlife response to USDA conservation programs (NRCS 2008a); including specifically native and non-native CRP grassland conservation covers (Riffell *et al.* 2008; USFWS 2008b, NCRS 2008a). A broader review of fish and wildlife response to Farm Bill conservation practices was recently undertaken in a series of papers published by The Wildlife Society (TWS) in partnership with the CEAP (TWS 2007) that address primary practices and their benefits to fish and wildlife associated with croplands, established grasslands, linear conservation practices, native grasslands wetlands, and aquatic ecosystems. The latter provides a useful summary of the issues surrounding estimating the benefits of CRP to wildlife, including: the potential impacts of planting particular conservation practices and vegetation management, how problems with existing datasets have structured analyses, and the complexity of addressing the habitat needs of many different types of wildlife that are often conflicting. The major conclusions are: (1) wildlife and agriculture can coexist if the land is managed to conserve sufficient biological integrity in the form of compatible plant communities and habitat elements; (2) the benefits for a particular species of any management scenario will depend, in part, on the management of surrounding sites as benefits are location- and species-specific; (3) with planning and

management, applying linear practices (e.g., living snow fences) within an agricultural landscape could be expected to have positive wildlife benefits compared with continued intensive row cropping; (4) rangeland practices offer some of the greatest potential for conservation benefits to wildlife and can be used to maintain, enhance, and restore needed plant communities and habitat conditions; (5) invertebrates and amphibians generally respond quickly to and colonize newly established wetland habitats. Wetland wildlife species richness depends upon wetland size, availability of nearby wetlands habitats, diversity of water depths and vegetation, wetland age, and maintenance and management activities; (6) aquatic species and their habitats act as indicators of watershed conditions; and through conservation planning and practices, habitats will benefit as will the species that inhabit them; and (7) adaptive management can better achieve conservation objectives through plan modification during implementation to better meet conservation goals.

3.2.2.3 CRP and Impacts on Wildlife

Common activities associated with CRP that have the potential to negatively impact wildlife are disturbance from installation, maintenance, and mid-contract management of CPs. These activities may temporarily impact wildlife through direct soil or vegetation disturbance. Wildlife may be temporarily displaced during ground disturbing activities, but in some instances, suitable habitat may not be nearby, or may already have established wildlife at a capacity that cannot sustain additional animals in the long term. While some temporary negative impacts may occur during MCM activities, the results of MCM enhance wildlife habitat value by maintaining early succession environments such as grasslands, ensuring a diverse community is maintained that benefits the most species, and controlling noxious weeds and other invasive species. Other CRP management actions that may temporarily negatively impact wildlife include the application of herbicides and pesticides intended to ensure the longterm health of the conservation cover; however, use of these chemicals in accordance with NRCS practices standards and in compliance with applicable laws and regulations, in combination with BMPs as stipulated in the Conservation Plan, minimize the potential for negative impacts to wildlife.

Harvesting of CRP also has the potential to negatively impact wildlife. Haying and grazing grasslands can be cost effective tools that maintain early successional grassland environments and minimize the use of other measures such as chemical herbicides to control woody growth. Planned removal of vegetation also eases MCM activities such as disking and interseeding, and reduces wildfire hazards; however, planned removal of vegetation also at least temporarily removes wildlife habitat, and direct mortality due to conflicts of wildlife (especially grassland birds) with machinery is possible.

Prior to enrollment, a site-specific environmental evaluation would be conducted that identifies the particular wildlife species present and the potential impacts of the conservation practices and management practices (including haying and grazing) proposed for those lands. The site-specific evaluation would identify those situations where additional environmental evaluation under NEPA may be required.

3.3 BIOLOGICAL RESOURCES: PROTECTED SPECIES

3.3.1 Definition of the Resource

Biological resources include plant and animal species and the habitats in which they occur. This analysis discusses protected species and their critical habitat. Protected species are those Federally designated as threatened or endangered under the ESA or species that are considered candidates for being listed as threatened or endangered. "Critical habitat" is defined as: (1) specific areas within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation (USFWS 2008a).

3.3.2 Existing Conditions

In 1966, Congress passed the Endangered Species Preservation Act, which consolidated and expanded authority for the Secretary of the Interior to manage and administer the National Wildlife Refuge System. The Act was an attempt to preserve endangered vertebrates (mammals, birds, fish, amphibians, and reptiles) by establishing habitat refuges and prohibiting the taking of such animals on these lands. Protection of at risk species were further expanded in 1973 by passage of the ESA. The ultimate goal of the ESA is to conserve threatened and endangered plant and animal species by listing species in this condition and then improving their status until they can be removed from this list. A threatened species is one likely to become endangered while an endangered species is one in danger of becoming extinct.

The USFWS is the lead Federal agency governing terrestrial and freshwater threatened and endangered species and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA) regulates marine threatened and endangered species. Federal agencies proposing activities that could potentially affect a protected species must consult with the USFWS and/or NOAA. Protected species often have very specific living conditions based on their reproductive requirements. A total of 1,321 protected species have been determined to be threatened and endangered within the U.S. and its territories (Table 3.3-1). Of these, 545 listed species have designated critical habitat (USFWS 2008a).

Habitat destruction is probably the single most important factor leading to the endangerment of species. It plays a role in the decline of approximately 95 percent of federally listed threatened and endangered species. Habitat destruction has impacted nearly every type of habitat and all ecosystems (Library Index 2009). Many types of human activity result in habitat destruction including industrialization, urbanization, agriculture, logging, and recreation. Agriculture, with about 47 percent of the total land area in the contiguous U.S. used for farming (NASS 2009a), is one of the leading causes of habitat destruction, with more endangerment associations than any other cause except urbanization (Czech *et al.* 2000). Besides causing the direct replacement of natural habitat with fields, agricultural activity also results in soil erosion, pollution from pesticides and fertilizers, and runoff into aquatic habitats. Agriculture has impacted forest, prairie, and wetland habitats in particular. Wetland conversion for agriculture is the primary factor in the loss of wetlands. Approximately 80 percent of wetland losses have resulted from

drainage and land clearing for agriculture (American Forestry Association [AFA] 1990). Taking agricultural land out of production and establishing resource conserving covers or wetlands thereby have great potential for benefiting threatened and endangered species.

Table 3.3-1. Protected Species within the U.S.

Species Group ¹	Number of Threatened or Endangered Species ²	Number of Species with Designated Critical Habitat
Birds	90	25
Mammals	85	30
Amphibians	25	10
Reptiles	37	14
Fishes	139	64
Insects/Arachnids	69	35
Clams/Snails/Crustaceans/Corals	129	40
Plants	747	327
TOTAL	1,321	545

¹ Includes terrestrial and marine species

² 12 species (five fish, three mammals, two birds, one amphibian, and one reptile) are counted more than once in the above table, primarily because these animals have distinct population segments (each with its own individual listing status)

Source: USFWS 2009a, USFWS 2009b

Federally protected threatened and endangered species may permanently or temporarily (such as migratory species) occupy lands eligible to be enrolled in CRP as well as lands already accepted in the program. Most of the conservation practices implemented by CRP have the potential to benefit protected species, but of these, CP25 devoted to conserving rare and declining habitats, CP38 SAFE projects, and focus on enrollment of lands in National Conservation Priority Areas are particularly beneficial. Large scale national programs such as the CRP have the potential for effecting landscape level benefits to species protected by the ESA, and may even assist in keeping certain species from becoming listed as threatened or endangered under Federal law.

The most common activities associated with CRP that have the potential to negatively impact threatened and endangered species include ground preparation during establishment of the conservation practice, conservation practice maintenance and MCM, and harvesting CRP lands. These impacts associated with establishment and management would be temporary and localized. Disturbance from heavy machinery would not be greater than the disturbance associated with normal agricultural practices. The disturbance associated with certain practices potentially introduces invasive plant species; however, this may be controlled by employing BMPs such as washing equipment before entering and leaving the work area and ensuring seed mixes do not include any invasive or noxious species. Wildlife may be temporarily displaced, but suitable habitat may not be nearby, or may already have established wildlife at a capacity that cannot sustain additional animals in the long term; however, prior to approval of a contract and as part of the Conservation Plan development, a site-specific inventory would identify the potential presence of any protected species. Formal consultation with USFWS or NOAA would

be completed in the event a CP (including associated maintenance, management, and harvesting such as haying or grazing) may affect a listed species. If negative impacts to listed species are identified, it is not likely the land would be enrolled and/or the proposed maintenance, management, or harvest activity would be approved.

3.4 WATER RESOURCES: FLOODPLAINS

3.4.1 Definition of the Resource

Floodplains are the lowlands adjacent to rivers and streams that are subject to flooding when the stream or river overflows its banks. Executive Order 11988 of May 24, 1977, requires Federal agencies to evaluate the potential effects of their actions associated with the occupancy or modification of floodplains, consider alternatives, and develop plans to reduce flood hazards.

3.4.2 Existing Conditions

3.4.2.1 Floodplains

Floodplains, in conjunction with riparian areas and wetlands, can protect lands from flood damage downstream by reducing the velocity of floodwaters and temporarily storing floodwater, slowly releasing it back to the stream or river. Reduced velocity and storage of floodwater combine to lower flood heights and reduce the water's erosive potential. Flood control by these natural systems saves millions of dollars in flood damage and the cost of having to construct extensive flood control facilities. They also provide additional economic benefits such as improved recreational opportunities and increased productivity for the commercial fish and shellfish industry.

Floodplains have historically made excellent cropland because of the nutrients left behind by spring floods; however, many major rivers have been modified through levees, dams, river channelization, and drainage projects implemented for flood control to protect developed areas and farmland within the floodplains. This has reduced the potential for floodwaters to replenish floodplain nutrients. These structural measures of flood control have isolated rivers from much of their floodplains, allowing draining and development of the floodplain.

The most extensive riparian ecosystem in the U.S. is associated with the flat, low-lying floodplain of the Mississippi River that is dependent upon the flooding continuum of the river. As a notable example, most of the upper Mississippi River below Dubuque, Iowa flows between levees that prevent the interchange of water, nutrients, sediment and aquatic organisms between the river and its former floodplain. In the Mississippi River, the main stem no longer connects with 50 percent of its floodplain of the upper river and 90 percent in the middle and lower stretches of the river (The Nature Conservancy [TNC] 2008). Loss of floodplain storage can contribute to high floods and associated damages to life and property (*Ibid*) further downstream and catastrophic damage during extreme events such as the 2008 and 1993 floods.

In addition to the direct loss of habitat, reduced flood storage capacity on the floodplain contributes to unnatural water level fluctuations. Combined with the effects of navigation dams,

altered water levels limit the abundance and diversity of native plant communities in the river and associated floodplains.

3.4.2.2 Floodplains - CRP

Historically, conservation practices, including the restoration of natural riparian plant communities and functions, protected floodplains from scour erosion, resulting in direct benefits to riparian areas. In addition, the application of filter strips reduced runoff from agricultural lands to floodplains. Conservation buffers implemented under CRP slows movement of water, enabling sediment to precipitate and nutrients to leach or be absorbed by plants before they reach surface waters. They can further enhance aquatic habitat by moderating water temperatures, stabilizing stream banks, and restoring floodplains.

In the Prairie Pothole Region, wetland catchments on CRP land can store an average of 1.1 acre-foot of water per acre, although the potential flood storage service provided by wetlands is likely greater. Regardless, wetlands on CRP lands have significant potential to intercept and store precipitation that otherwise might contribute to downstream flooding (NRCS 2008b).

3.5 WATER RESOURCES: GROUNDWATER

3.5.1 Definition of the Resource

Groundwater is the water that flows underground and is stored in natural geologic formations called aquifers. It is ecologically important because it sustains ecosystems by releasing a constant supply of water into wetlands and contributes a sizeable amount of flow to permanent streams and rivers (FSA 2003). In the U.S. approximately 47 percent of the population depends on groundwater for their drinking water supply. Currently, irrigation accounts for the largest use of groundwater in the U.S., representing approximately 65 percent of all the groundwater pumped each day (McCray 2009).

Groundwater quality is protected under the Federal Water Pollution Control Act of 1972, better known as the CWA, and is administered by EPA. Drinking water is protected under the Safe Drinking Water Act of 1974 (PL 93-523, 42 U.S.C. 300 et seq.). The EPA defines a sole source aquifer (SSA) as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. An SSA designation is one tool to protect drinking water supplies in areas where there are few or no alternative sources to the groundwater resource. There are 73 designated SSAs in the U.S. and its territories (EPA 2009a).

3.5.2 Existing Conditions

3.5.2.1 Groundwater Resources

Water in the saturated subsurface zone, or *phreatic zone*, contains the largest source of unfrozen fresh water in the world. The contribution of groundwater to the total water supply is greatest in arid and semi-arid regions, and large regions of irrigated agriculture in arid areas are entirely dependent on groundwater (Dunne and Leopold 1978).

In rural areas, almost all domestic water is supplied by groundwater. A clean, constant supply of drinking water is essential for every community across the country. In 2000, withdrawals of fresh

groundwater for irrigation, and domestic uses in the U.S. totaled approximately 76,400 million gallons per day, or approximately 90 percent of the total fresh groundwater withdrawals for all water uses (84,500 million gallons per day) (Maupin and Barber 2005).

3.6 WATER RESOURCES: SURFACE WATER

3.6.1 Definition of the Resource

Surface water in rivers, streams, creeks, lakes, and reservoirs supports everyday life through provision of water for drinking and other public uses, irrigation, and industry. Of the approximately 408,000 million gallons per day of water used in the U.S. in 2000 approximately 323,000 million gallons per day (79 percent) came from fresh surface water sources (Maupin and Barber 2005).

Surface runoff from rain, snow melt, or irrigation water can affect surface water quality by depositing sediment, minerals, or contaminants into surface water bodies. Surface runoff is influenced by meteorological factors such as rainfall intensity and duration, and physical factors such as vegetation, soil type, and topography. The principal law governing pollution of the nation's surface water resources is the CWA. The Act utilizes water quality standards, permitting requirements, and monitoring to protect water quality. The EPA sets the standards for water pollution abatement for all waters of the U.S. under the programs contained in the CWA but, in most cases, gives qualified States the authority to issue and enforce permits.

3.6.2 Existing Conditions

3.6.2.1 Surface Water Quality

National Surface Water Quality

The water quality of lakes, rivers, and streams is determined by the natural, physical, and chemical properties of the land that surrounds them. The topography, soil type, vegetative cover, minerals, and climate all influence water quality. When land use affects one or more of these natural physical characteristics of the land, water quality is almost always impacted. These impacts may be positive or negative, depending on the type and extent of the change in land use. If water quality is degraded severely enough, the impacts can be devastating for both human communities and for the ecological demands of those species that require clean water for survival. Agricultural practices have the potential to substantively affect water quality due to the vast amount of acreage devoted to farming nationwide and the great physical and chemical demands that agricultural use puts on the land. For a more detailed discussion of water quality, please see the 2003 PEIS for a general overview discussion.

Currently in the U.S., pollution of assessed surface water bodies is widespread, according to the EPA's 2004 National Water Quality Inventory, which indicated that 44 percent of assessed stream miles, 64 percent of assessed lake acres, and 30 percent of assessed bay and estuarine square miles were not clean enough to support such uses as fishing and swimming. Approximately 30 percent of U.S. waters were assessed in this report. The leading causes of impairment included pathogens, mercury, nutrients, and organic enrichment/low dissolved oxygen. Top sources of impairment included atmospheric deposition, agriculture, hydrologic

modifications, and unknown or unspecified sources (EPA 2009b). As a way to identify those bodies of water where water quality has been degraded and do not meet minimum water quality standards, Section 303(d) of the CWA established a process for States to identify those waters within its boundaries that do not meet clean water standards. Waters that do not meet clean water standards are classified under the CWA as “Impaired Waters”. For priority waters, States develop total maximum daily loads (TMDLs) that identify the amount of a specific pollutant from various sources that may be discharged to a water body but still ensure that water quality standards are met for that body of water. As shown in Figure 3.6-1, the number of national cumulative TMDLs has increased since 1995. The number one pollutant group for these TMDLs is “pathogens,” and the State with the most TMDLs is Pennsylvania (EPA 2009c). For a more detailed discussion on TMDLs, please see the 2003 CRP PEIS (FSA 2003).

National Cumulative Number of TMDLs		
EPA Fiscal Year starts October 1 and ends September 30		
Fiscal Year	Number of TMDLs	Number of Causes of Impairment Addressed
1996	122	123
1997	338	352
1998	403	409
1999	334	380
2000	1,562	1,586
2001	2,571	2,607
2002	2,748	2,823
2003	3,045	3,322
2004	3,377	3,642
2005	4,278	4,599
2006	4,202	4,554
2007	4,319	4,650
2008	9,199	9,479
2009	2,183	2,301
Total: 38,681 TMDLs; 40,827 Causes of Impairment Addressed		

Source: EPA 2009c.

Figure 3.6-1. National Cumulative Number of TMDLs

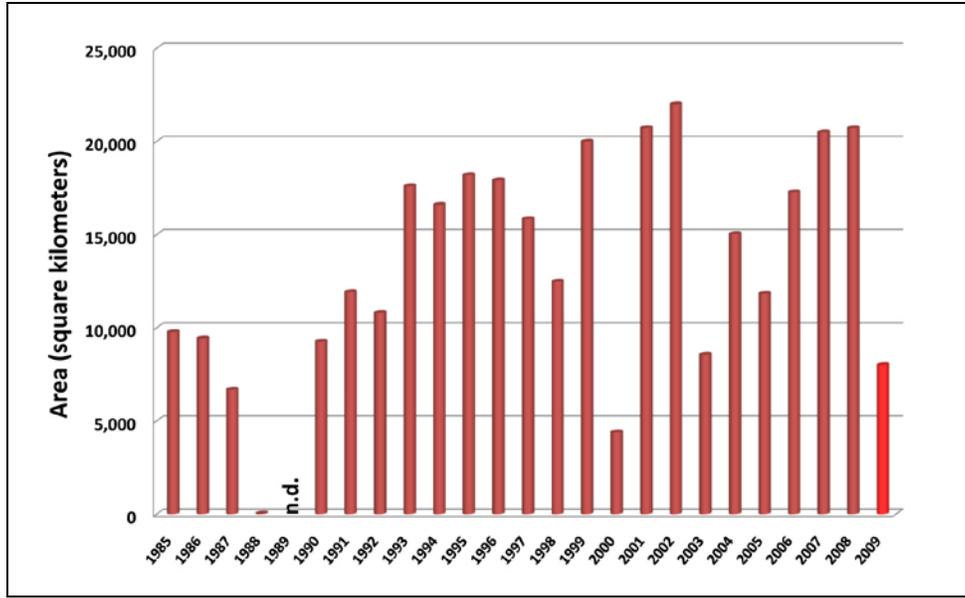
Nonpoint source pollution occurs when moving water, either from precipitation or irrigation, runs over the land or through the ground, picks up pollutants, and deposits them into a body of water or into the groundwater. This type of pollution is referred to as “nonpoint” because it comes from many diffuse sources and the origin of the pollutant cannot be easily defined. Nonpoint source pollution results from nearly every type of land use, and is the leading cause of water quality

degradation in the Nation. According to the EPA's 2004 National Water Quality Inventory, throughout the U.S., agricultural activities represent the number one source of impairment in rivers and streams (EPA 2009b).

Nonpoint source pollution associated with agriculture practices that has the greatest impact on water quality is runoff that contains sediment, nitrogen, phosphorus, and/or pesticides. These four pollutants have been identified due to their potential to produce cumulative adverse impacts on human health and the natural environment (see Table 2.2-3 in the 2003 CRP PEIS). Sediments are loose particles of soil and other substances carried by runoff into a water body that settle to the bottom, or remain suspended in the water. Nitrogen and phosphorus, in the form of nitrates, nitrites, and phosphates, primarily originate from fertilizers and feedlots and enters the water through runoff. The majority of pesticides, which include herbicides, also enter waterways through runoff from agricultural lands.

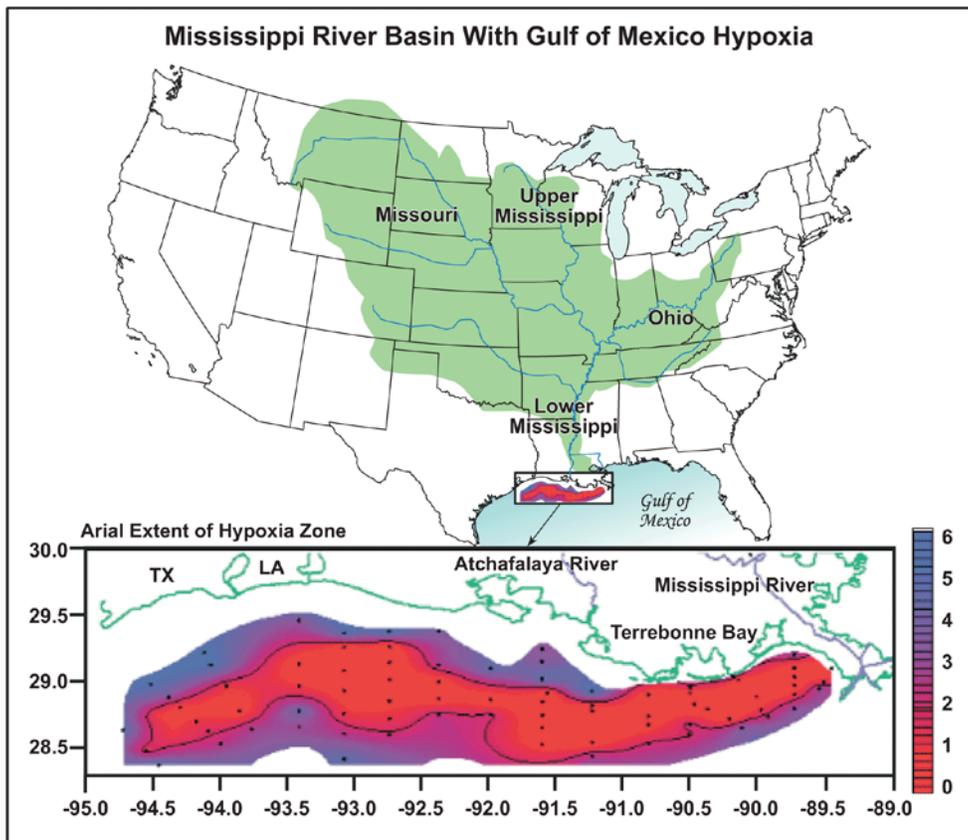
A dramatic example of the effects of non-point pollution is demonstrated by hypoxic areas. When nutrient-laden runoff reaches the Gulf of Mexico, eruptive algal blooms occur and, upon decomposition and under the right conditions, severely deplete the oxygen levels in the water, resulting in fish kills and the loss of shellfish beds. Nitrogen has generally been viewed as the principal nutrient yielding excess algal growth in the Gulf hypoxic zone; however recent analysis has brought attention to phosphorus as an important contributing agent (EPA 2009d). The majority of Mississippi River nitrogen originates from agricultural land practices, while other sources include human sewage, nonagricultural fertilizer use, and precipitation. Hypoxia occurs from late February through early October, nearly continuously from mid-May through mid-September, and is most widespread, persistent, and severe in June, July, and August. Figure 3.6-2 presents the measured size of the Gulf of Mexico Hypoxic Zone from 1986 to 2009 (USGS 2008 and Louisiana Universities Marine Consortium (2009) and Figure 3.6-3 presents the areal extent of the Gulf of Mexico Hypoxic Zone in 2008 (EPA 2009d). A more detailed description of potential non-point source pollutants, specifically, nitrogen, phosphorus, pesticides, erosion, sediment, and associated runoff potential, are included in the 2003 CRP PEIS (FSA 2003).

Over the last several decades, agriculture has implemented conservation practices for working lands that have reduced soil erosion and agricultural chemical pollutants reaching surface waterbodies. Conservation buffers are small areas or strips of land in permanent vegetation that help reduce potential pollutants entering surface waters through runoff and manage other environmental concerns. While overall a benefit to surface water quality, conservation buffers are however, ineffective in reducing soluble nitrogen loadings from cropland with subsurface drainage systems as soluble nitrogen is more biologically available and as a result can enter receiving water bodies. For example, extensive subsurface drainage results in high rates of transport of soluble nitrate into streams and, eventually, to the Mississippi River and the Gulf of Mexico (USGS 2000).



Source: USGS 2008, Louisiana Universities Marine Consortium 2009.

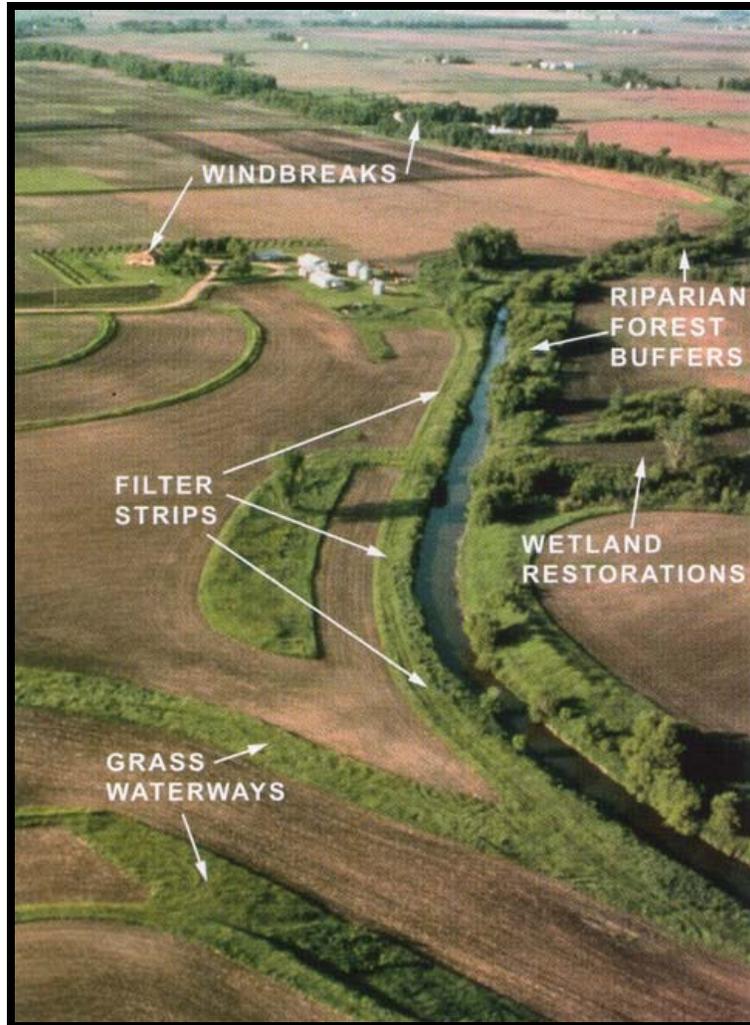
Figure 3.6-2. Measured Area of the Hypoxic Zone (km²)



Source: EPA 2009d.

Figure 3.6-3. Areal Extent of 2008 Hypoxic Area

Grass filter strips, grassed waterways, field windbreaks, wetland restoration, and riparian buffers are all examples of conservation practices, or buffers providing this benefit (Figure 3.6-4) (NRCS 2003b). Strategically placed buffer strips in permanent vegetation in and/or around row crops can effectively mitigate the movement of sediment, nutrients, pesticides and other pollutants within and from farm fields. Buffer strips conserve air and water quality, reduce soil erosion and protect the soil, creating sustainable agricultural landscapes. They also enhance fish and wildlife habitat, thereby protecting biodiversity (*Ibid*).



Source: NRCS 2003b

Figure 3.6-4. Example Water Quality Buffers

When coupled with appropriate cropland treatments including crop residue management, nutrient management, integrated pest management, winter cover crops and similar management practices and technologies, buffer strips should allow farmers to achieve a measure of economic and environmental sustainability in their operations (NRCS 2003b).

Surface Water Quality and the CRP Program

In 2003, the CEAP was initiated by the USDA NRCS in partnership with other USDA agencies to develop a scientific understanding and methodology for estimating the environmental benefits and effects of conservation practices on agricultural landscapes at national, regional, and watershed scales. On-going CEAP watershed assessment studies are addressing the need to determine the environmental benefits and impacts to society of USDA conservation programs at the watershed scale. The CEAP watershed studies were also designed with the intention of serving as validation points for the larger scale modeling in the national and regional assessments—for cropland in particular—and to evaluate and further develop models to provide input into the national assessments. Key findings from relevant CEAP studies, notably as presented in the special November/December 2008 edition of the *Journal of Soil and Water Conservation* (JSWC) (JSWC 2008) are discussed below.

CRP contracts reduce soil erosion by hundreds of millions of tons each year. This reduction of erosion cleans streams, lakes, and other bodies of water by reducing sediment and preventing nutrient and pesticide runoff carried by eroded topsoil. Producers who enroll acreage in CRP reduce their application of pesticides and nutrients, thus largely eliminating CRP lands as a source of pollution. Most of the lands under CRP provide benefits to water quality; however, some provide more benefits than others. As a way to specifically target water quality, the USDA has listed those practices in their DM-9500 that most effectively address nonpoint source pollution. The CRP, CCRP, FWP, and CREP CPs aimed at water quality improvement include, but are not limited to:

- Maintaining already established vegetative cover (CP 10 & 11)
- Establishing introduced grasses and legumes (CP 1)
- Establishing native grasses (CP 2)
- Establishing permanent wildlife habitat (CP 4B & D)
- Establishing vegetative cover to reduce salinity (CP 18B & C)
- Creation of filter strips and riparian buffer zones (CP 21 & 22)
- Practices aimed at managing, restoring, or creating wetlands are also used for the purpose of improving water quality due to their ability to effectively filter runoff.

In addition to the practices listed in DM-9500 that specifically address water quality, several other practices can also provide benefits to water quality conditions. These practices include tree planting (CP 3), establishing grassed waterways (CP 8), and maintaining already established grass areas (CP 10). Under the current CRP, almost all the active acreage enrolled implement conservation practices targeted towards improving water quality.

The application of the conservation practices authorized under CRP for the acres enrolled in the program in general terms improve water quality. For example, the majority of soil erosion practices focus on establishing vegetative cover to protect soil and reduce runoff. The vegetation in turn also has the ability to absorb excess nitrogen and slow surface transport of pesticides. Current conservation practices on CRP acres decrease the amount of contaminants

flowing uninhibited off agricultural cropland into streams, lakes, and other water bodies. Although CRP does not focus specifically on addressing TMDLs, benefits to impaired waters do arise from the reduction in sediment and agricultural chemical pollutants reaching surface water.

A recent assessment of 14 research sites – benchmark watersheds – conducted as part of the CEAP evaluated the effects of specific conservation practices implemented under the CRP (Richardson *et al.* 2008). The CRP was shown to provide water and soil quality improvements on many of the study watersheds. For example, in the claypan areas of Missouri, grass established through the CRP provided improved infiltration, thus reducing runoff and erosion losses. In Chesapeake Bay in Maryland and in streams in Georgia, the establishment of cover crops and small grains were effective in reducing nutrient losses (*Ibid*).

Conservation buffers filter sediment and nutrients that flow across established buffer covers, trapping soil and nutrients that enter from adjoining fields before they reach waterways. Because buffers are situated and designed to intercept runoff from other fields in the watershed, an acre of buffer has a greater impact than an acre of CRP field. Because buffers are strategically located to intercept soil and nutrients before they reach surface waters, any soil and nutrients not trapped by the buffer are likely loaded into the waterbody (FAPRI 2007). Natural riparian buffers and constructed vegetated buffer strips have been effective in reducing the transport of nutrients and pesticides from fields to downstream waters. For example, the use of elevated buffers in conjunction with wetlands and reduced tillage combined to significantly improve the productivity of a lake in Mississippi. Natural riparian buffers in Georgia were effective in improving water quality, and vegetated buffers were also effective in reducing the loss of nutrients and pesticides in Iowa, Missouri, and Mississippi (Richardson *et al.* 2008).

Conservation buffers trap nearly 96.0 tons of waterborne sediment for each acre of buffer, or 2.5 tons of soil per acre of field CRP practice aims to buffer. The effect per acre in sediment reduction of buffered fields is highest in the Delta and Appalachia regions. Each acre of conservation buffer traps 247.2 pounds of nitrogen, or 6.4 pounds per acre of field. The Great Lakes and Northeast regions realize the largest effect of nitrogen reduction per acre of buffered field. Each acre of conservation buffer traps nearly 41.6 pounds of phosphorus, which translates to 1.1 pounds per acre of the affected watershed. The Delta and Appalachia regions realize the largest effect of phosphorus per acre of buffered field (FAPRI 2007).

Table 3.6-1 summarizes the reduction in loading due to conservation buffers based on the total number of conservation buffer acres currently enrolled. Based on October 2009 data (FSA 2009a), there are 2,221,470 acres of conservation buffers currently enrolled in the CRP. Using the aforementioned rates, the current total annual reductions in sediment, nitrogen, and phosphorus loading, per acre of conservation buffer, is 213,261,120 tons, 274,574 tons, and 46,207 tons, respectively. The amount of nitrogen leaving CRP fields is 95 percent less than for fields in crop production. Over half of this reduction is due to nitrogen attached to sediment, while the bulk of the remaining reduction is due to reductions in dissolved nitrogen leaving fields through runoff or percolation. The estimated reduction in nitrogen loading averages 7.7 pounds per acre nationally and 20.7 pounds per acre in eastern states. The largest per acre nitrogen reduction effects are in the Delta, Appalachia, and the Northeast regions (FAPRI 2007). The amount of phosphorus leaving CRP fields is 86 percent less than for fields in crop production. Over three-quarters of this reduction is due to phosphorus attached to sediment while the bulk

of the remaining reduction is due to reductions in dissolved phosphorus leaving fields through runoff or percolation. The estimated reduction in phosphorus loading averages 1.7 pounds per acre nationally and 5.4 pounds per acre in eastern states. The largest per acre phosphorus reduction effects are in the Delta, Appalachia, and the Northeast regions; however, the percentage difference relative to the crop production scenario is considerable across all regions, although notably less for the Great Lakes region (*Ibid*).

Table 3.6-1. Estimated Average Effect of CRP Conservation Buffer Practices

Pollutant	Reductions per acre of buffer	Reductions per acre of field affected by buffer
Sediment (water erosion) (tons)	96.0	2.5
Nitrogen (pounds)	247.2	6.4
Phosphorus (pounds)	41.6	1.1

Sources: FAPRI 2007, FSA 2009a.

Across all soil types, the amount of soil moving off a field is 99 percent lower for CRP conservation covers than for crop production that might otherwise occur. The estimated reduction in sediment loading averages 2.1 tons/acre nationally, and 6.5 tons/annually for states adjoining and east of the Mississippi River. The largest per acre sediment reduction effects are again in the Delta, Appalachia, and the Northeast regions; however, the percentage difference relative to the crop reduction scenario is considerable across all regions (FAPRI 2007).

The current estimated reduction in sediment, nitrogen, and phosphorus loading based on the aforementioned factors and averages is presented in Table 3.6-2. These estimates use a current (October 2009) CRP enrollment value of 31.12 million acres (FSA 2009a).

Of note is that these estimates are not a measure, but rather an indicator of conservation benefits. The assumptions that went into this analysis ignore the variation from place to place and the stress to the environment from fiber and food production and the environment's resilience in the face of stress (FAPRI 2007).

Table 3.6-2. Estimated Average Effect of CRP Field Practices on Soil and Nutrients Leaving Fields

Pollutant	Per Acre Reduction	Annual Reduction
Sediment (water erosion) (tons)	-2.1	70,812,000 tons
Nitrogen (pounds)	-7.7	259,644,000 pounds
Phosphorus (pounds)	-1.7	57,324,000 pounds

Sources: FAPRI 2007, FSA 2009a.

Note: Based on most recent CRP acreage (September 2009) of 31.12 million acres.

Activities associated with CRP that have the potential to negatively impact water quality, but are generally not an issue are most often related to ground preparation for installation of conservation practices, mid-contract management practices such as disking, prescribed burns, or tree thinning, use of herbicides and pesticides to maintain the health of the conservation cover, and harvesting activities such as haying or grazing. General minimization or best management practices to reduce potential impacts of these activities on surface water quality include not allowing haying or grazing within 120 feet of a permanent surface water body, installing temporary erosion control devices, and establishing buffer strips. Conservation plans will develop measures designed specifically to benefit the particular CP installed and any unique situations found on particular lands proposed for enrollment. Prior to acceptance into the program, a site-specific environmental evaluation would be performed that assesses potential impacts to surface waters and whether additional assessment under NEPA would be required.

3.6.2.2 *Surface Water Quantity*

National Irrigation

Agriculture is a major user of surface and groundwater in the U.S. In 2000, approximately 31 percent of total surface water withdrawals was used for irrigation and approximately 68 percent of total groundwater production was used for irrigation. Collectively, irrigation water use represented 40 percent of the total water used in the U.S. in 2000, with groundwater accounting for 42 percent of the total irrigation withdrawals (USGS 2005). The decline in water availability, especially in groundwater basins, is resulting in increased competition amongst water uses, particularly in urban areas. Water availability and increased energy costs are key drivers that require continued improvements to irrigation systems, enhanced irrigation water management, and increased water use efficiency (Hansen 2006).

The number of farms and ranches irrigating fell two percent since 1998 and the total land irrigated declined about three percent. In the 1990s, actual irrigation water use declined, even

with a 13 percent increase in U.S. population during that decade. Improvements on irrigated acres have resulted in reduced water use on 18.5 million acres, improved crop yield on 18.7 million acres, and decreased energy cost on 15.3 million acres. In addition, the average irrigation application rate decreased from 3.55 acre-feet per acre in 1950 to 2.48 acre-feet in 2000 (Hansen 2006).

Surface Water Quantity and the CRP

Taking land out of agricultural production and enrolling it in CRP for the establishment of conservation practices has the potential to substantially reduce consumptive use of surface water for irrigation. As land is enrolled in the CRP, irrigation acreage is reduced, which results in less surface water being diverted for irrigation. As this happens (primarily in areas irrigated with surface water), streamflow in hydrologically connected reaches has the potential to increase; however, as most western surface water allocations are oversubscribed (i.e., the allocated volume is greater than the available supply during most years), as one user reduces or relinquishes their allocation, other users may claim the allocation unless regulatory authorities allocate the volume for instream use.

There would be a short-term increase in water application, at least until desired plants are established, thus potentially affecting water quantity; however, these short-term demands would be offset by long-term benefits to surface water quantity.

In general terms, CPs 1, 2, 4, 33, and 37 have direct positive impacts to surface water quantity, as implementing these measures would reduce irrigation and thus increase surface water quantity. As an example, the CPs associated with planting native plants results in positive impacts to surface water quantity, as native plants require less water for growth. Specifically, implementing CP2, Native Grasses, results in improvements to water quantity by retiring irrigated cropland and in turn reducing the consumptive use of surface water resulting in less surface water being diverted. In general, native grasses use less water on an annual basis than other crops, and implementing CP2 results in net water savings. Thus, under CP2, a change from irrigated cropland to native grasses could be expected to have several beneficial effects on hydrology. Benefits include decreased overall runoff, decreased evapotranspiration, and increased overall streamflow.

As part of the PEA prepared for the Idaho CREP (FSA 2006), a detailed analysis of effects of water quantity was conducted. As estimated in the analysis, implementation of CREP in Idaho would decrease the amount of water used for irrigation, increasing the water available to area streams, lakes, reservoirs, and aquifers because the State of Idaho created a mechanism to claim the resulting increase in water availability for instream use. Depending on the location of the enrolled CREP acres, the increase of surface water flow in the Snake River would be between 192,390 acre-feet to 206,935 acre-feet (*Ibid*), a significant increase in the amount of surface water available for other uses.

Groundwater Quality

Groundwater is an important source of drinking water for more than half of the people in the U.S. Agricultural sources, including animal wastes, fertilizers, and pesticides, have a direct impact on groundwater quality and supply. Once groundwater becomes contaminated, it is often

times very difficult and very expensive to correct. Nitrates, nitrites, phosphates, pesticides, petroleum products, and pathogens are among the most common and serious forms of groundwater pollution associated with agriculture. Agricultural practices that introduce contaminants into the groundwater include fertilizer and pesticide application, spilled oil and gasoline from farm equipment, nitrates, and pathogens from animal manure. For a more detailed discussion of groundwater quality, please refer to the 2003 CRP PEIS for a general overview.

Groundwater Supplies

When groundwater is used at a rate faster than it is replenished, the water table declines, land can subside, and the potential in coastal areas for saltwater intrusion into freshwater aquifers rises. If subsidence occurs from groundwater over-use, it is impossible for the capacity of the underlying aquifer to return to its pre-drawdown level. Groundwater supplies may also be altered due to natural causes. For example, years of below-normal precipitation can alter the amount of water entering the aquifer. Likewise, seasonal and year-to-year differences in regional stream flow can cause fluctuation in localized groundwater levels. The combination of intensive pumping and several years of below-normal precipitation can accelerate a downward trend in water levels. This is true because below normal precipitation often results in decreased groundwater recharge. Below normal precipitation also generally results in increased groundwater pumping, which can accelerate the groundwater depletion. The 2003 CRP PEIS provides a more detailed discussion of groundwater supplies.

The High Plains Aquifer, also known as the Ogallala Aquifer, is the Nation's most heavily used groundwater resource. The major use is irrigation, but nearly two million people also depend on the aquifer as a source of drinking water. The eight states that use water from the High Plains Aquifer include Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming. Nebraska hosts the largest segment and square mileage of the water source (Gurdak *et al.* 2009).

Scientists with the USGS analyzed water for more than 180 chemical compounds and physical properties in about 300 private domestic wells, 70 public-supply wells, 50 irrigation wells, and 160 shallow monitoring wells that were sampled between 1999 and 2004. The study also assessed the transport of water and contaminants from land surface to the water table and deeper zones used for supply, to predict changes in concentrations over time. Based on this investigation, the USGS concluded that water quality is generally acceptable for drinking as more than 85 percent of the 370 wells used for drinking met Federal drinking-water standards. Nitrate, which is derived mostly from human sources such as fertilizer applications, was greater than the Federal drinking-water standard of 10 parts per million in about six percent of the drinking-water wells. None of the pesticides or volatile organic compounds detected exceeded drinking-water standards (Gurdak *et al.* 2009).

In 2002, U.S. irrigated farmland occupied 55.3 million acres, down one million acres from 1997. In recent years, national irrigated areas have stabilized at about 55 million acres as continuing growth in eastern States has been offset by declines in western States. Variations within the decades-long trend of increasing irrigated acres can largely be explained by year-to-year changes in four factors: farm program requirements, crop prices, water supplies in the West,

and weather influences on the need for supplementary irrigation in humid areas. In general, there is an increasing reliance on irrigation in the humid East, with large concentrations of irrigation emerging in Florida, Georgia, and, especially, in the Mississippi Delta, primarily in Arkansas and Mississippi (NRCS 2006b).

Changes in total water withdrawals for irrigation reflect per acre efficiency gains, shifts in crop locations, and changes in acres irrigated. Averaged over all States and crops, the average water application rate has declined by over five inches (about 20 percent) since 1969, to levels below 20 inches per acre in 2003. Producers have adopted more water-conserving practices and shifted production of some commodities to more humid and cooler areas, requiring less supplementary water. Irrigation application rates can vary from less than six inches per acre (sorghum in the North-Central States) to more than 4.5 feet per acre (orchards in the Mountain States). Per acre declines in application rates have partially offset the need for additional water to supply the increase in irrigated acreage. Over the 1969-2003 period, irrigated acreage increased by over 40 percent while total water applied increased by only 11 percent (NRCS 2006b).

3.6.2.3 Surface Water Resources – CRP Program

The retirement of cropland that overlies groundwater vulnerable to agricultural contamination is one way that CRP has helped to improve groundwater quality. In addition, surface water conservation practices (e.g., creating vegetated riparian zones) function to slow flood flow, which allows water to spread and soak into the soil, thereby recharging local groundwater and extending the baseflow through the summer season (Schultz *et al.* 1994). These vegetated riparian zones and conservation buffers can reduce pollutant concentrations in groundwater, notably nitrate concentrations (FSA 2003).

Converted cropland to CRP lands diminishes groundwater pumping needed to irrigate those areas that were once in production. The establishment of permanent native grasses and riparian buffers work to improve groundwater recharge rates, as native grasses require less water for growth, resulting in more percolation of precipitation into the groundwater. As demonstrated by recent research, groundwater levels are higher under CRP lands than adjacent croplands (USDA 2008).

3.7 WATER RESOURCES: WETLANDS

3.7.1 Definition of the Resource

Wetlands are defined by the USACE as areas characterized by a prevalence of vegetation adapted to saturated soil conditions and which are identified based on specific soil, hydrology, and vegetation criteria defined by USACE (USACE 1987). Riparian wetlands are associated with running water systems found along rivers, creeks, and drainage ways, and have a defined channel and floodplain. The CWA established a program to regulate the discharge of dredged or fill material into wetlands. The CWA further provides for regulations and procedures for the protection of wetlands and compensation for unavoidable impacts. The Food Security Act of 1985 contains provisions to discourage the conversion of wetlands into cropland. The

swampbuster provisions deny Federal Farm Program benefits to producers who convert or modify wetlands for agricultural purposes as defined in the Food Security Act of 1985, Title XII.

3.7.2 Existing Conditions

3.7.2.1 Wetlands

Wetlands are described as the transitional lands between terrestrial and deepwater habitats where the water table usually is at or near the land surface or the land is covered by shallow water. In wetlands, the upper part of the soil is saturated long enough during the growing season for soil organisms to consume oxygen creating anaerobic soil conditions unsuitable for most plants. Soils formed under these hydrologic conditions are called “hydric” and the plants adapted to these conditions are called “hydrophytes.” Wetland hydrology, hydric soils, and hydrophilic vegetation are the three major indicators used to identify and characterize wetlands. For a more detailed discussion on wetlands, please refer to the 2003 CRP PEIS “Riparian Areas, Floodplains, and Wetlands” for a general overview of wetlands.

Major Wetland Types

Major wetland types can be divided into two major groups: coastal and inland. Coastal wetlands are comprised of forested wetlands, scrub-shrub wetlands, tidal salt marshes, and tidal freshwater marshes. Inland wetlands are found within interior areas of the U.S. and not along the coasts. For more information regarding the major types of wetlands, please refer to the 2003 CRP PEIS.

Functions and Values

Wetlands perform many functions that are important to society, such as improving water quality, recharging groundwater, providing natural flood control, and supporting a wide variety of fish, wildlife, and plants. Wetlands can maintain good water quality and improve degraded water quality of surface waters by intercepting and treating surface runoff. Suspended sediments and contaminants in the water are trapped, retained, and/or transformed through a variety of biological and chemical processes before they reach downstream water bodies. For additional information regarding wetland functions and values, please refer to the 2003 CRP PEIS.

Current Distribution and Conditions

The total wetland acreage in the lower 48 states is estimated to have declined from more than 220 million acres three centuries ago to 107.7 million acres in 2004. When European settlers first arrived, wetland acreage in the area that would become the 48 states represented approximately 5 percent of the total land area. By 2004, total wetland acreage was estimated to be approximately 204 percent of the total land area (Dahl 2006).

Within the estuarine system, estuaries with emergent vegetation (plants that are rooted underwater and grow through the surface of the water – e.g., cattails) predominate, making up an estimated 73 percent (almost 3.9 million acres) of all estuarine and marine wetlands. As of 2004, estuarine shrub wetlands comprised up to 13 percent and nonvegetated saltwater wetlands contributed 14 percent to the estuarine system. Among freshwater wetlands, freshwater forested wetlands comprised the single largest category (51 percent). Freshwater

emergent wetlands represented an estimated 25.5 percent, shrub wetlands 17 percent, and freshwater ponds 6.5 percent of the total freshwater wetlands (Dahl 2006).

Between 1998 and 2004, the USFWS estimates a net gain in wetlands of 191,750 acres (Dahl 2006). This equated to an average annual net gain of about 32,000 acres. These estimates have led to the conclusion that wetland area gains achieved through restoration and creation have outdistanced losses

The net gain in wetland area was attributed to wetlands created, enhanced, or restored through regulatory and nonregulatory restoration programs. These gains in wetland area occurred on active agricultural lands, inactive agricultural lands, and other lands. Freshwater wetland losses to silviculture, urban and rural development offset some gains. Urban and rural development combined accounted for an estimated 61 percent of the net freshwater wetlands lost between 1998 and 2004 (Dahl 2006).

Intertidal wetlands declined by an estimated 28,416 acres from 1998 to 2004, an average annual loss of about 4,740 acres. The majority of these losses (94 percent) were to deepwater bay bottoms or open ocean. Forested wetlands experienced a net gain of 548,200 acres. This can be explained by the maturation of wetland shrubs to forested wetlands. There was also a substantial increase of 12.6 percent in the number of open water ponds over the study period (Dahl 2006).

3.7.2.2 Wetlands – CRP Program

As part of the CEAP, the Wetlands Component aims to develop a broad collaborative foundation to facilitate the production and delivery of scientific data, results, and information by investigating 11 geographic areas of the conterminous United States. Findings will routinely inform conservation decisions affecting wetland ecosystems and the services they provide, particularly focusing on the effects and effectiveness of USDA conservation practices and Farm Bill conservation programs on ecosystem services provided by wetlands in agricultural landscapes. The 11 CEAP-Wetlands regions were identified to capture geographic areas where historic wetland losses have been most pronounced due to agricultural activities and where significant USDA conservation resources have been invested to re-establish, manage or otherwise conserve wetland ecosystems and the services they provide (NRCS 2008b).

Currently, multiple studies are underway in seven of the 11 regions. The USDA defined the regions using geographic boundaries which incorporate regional intrinsic wetland values to facilitate a hydrogeomorphic approach to assessment (NRCS 2008b). Initial results indicate that overall CRP program impacts to wetlands are positive. For example, in the Prairie Pothole Region, wetland restoration activities funded by the USDA have positively influenced ecosystem services in comparison to a cropped wetland baseline condition (Gleason *et al.* 2008). In addition, a recent investigation determined that constructed wetlands were shown to substantially reduce the movement of nitrate from tile drained fields into stream systems (Richardson *et al.* 2008).

Restoration of wetland hydrology changes soil chemistry by inundating or saturating the soils, creating anaerobic soil conditions. Most likely, the majority of wetland types restored have been prairie potholes, which are small, shallow water basins dotting the agricultural landscape in the

northern Great Plains region. These generally closed basins would rely mainly on precipitations and surface runoff for hydrology and likely can range from temporarily to seasonally to permanently inundated. Under CRP and FWP, every restored wetland also requires a vegetative buffer at a minimum of 30 feet wide to protect the wetland from sediment, nutrients, and pollutants from agricultural runoff. These buffers provide additional soil stabilization and reduce erosion within the buffer.

Wetland and wetland buffers in CRP provide additional treatment; for example, suspended sediments and contaminants in the water are trapped, retained, and/or transformed through a variety of biological and chemical processes before they reach downstream rivers, streams, and other water bodies contributing to the reduction in TMDLs from agricultural runoff.

The establishment of vegetative covers, riparian buffers, and filter strips, and the restoration of wetlands, riparian areas, and floodplains would be applicable conservation practices to reduce nitrogen, phosphorus, and sediment runoff from agricultural lands identified as possible contributors to the hypoxic condition linked to the Mississippi River and its tributaries. Currently (as of October 2009), a total of 2,221,470 acres of wetland restoration practices are enrolled in the CRP (FSA 2009a). Wetland practices in CRP include:

- CP9 Shallow Water Areas for Wildlife
- CP23 Wetland Restoration – Floodplain
- CP23A Wetland Restoration– Non-floodplain
- CP27 Farmable Wetlands
- CP31 – Bottomland Timber Establishment on Wetlands

Appendix A provides summary descriptions of these practices. As described in Chapter 1, in order for land to be eligible for enrollment in CRP, applicants must demonstrate they are in compliance with the swampbuster provisions of Section 1212 of the Food Security Act of 1985.

The on-going and historic implementation of CP construction and maintenance activities directly and indirectly impact wetlands. For example, site preparation earthmoving activities such as grading, leveling, and filling temporarily alter hydrology and increase sedimentation rates, potentially resulting in minor short-term adverse effects to wetlands. Maintenance provisions often include moving soil to repair dikes or buffer strips, which can result in increased sediment loading to wetlands. To reduce these short-term impacts to wetlands, a site-specific conservation plan for each area is prepared and site-specific BMPs are used to mitigate any adverse impacts of implementing specific CPs. These impacts typically last only until the CP is permanently established. The impacts are considered minor compared to the overall long-term benefits of the CPs.

3.8 WATER RESOURCES: COASTAL ZONE MANAGEMENT

3.8.1 Definition of the Resource

The Coastal Zone Management Act (CZMA) encourages States and territories to preserve, protect, develop, and, where possible, restore or enhance valuable natural coastal resources.

These include wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs, as well as the fish and wildlife supported by those habitats. The Act, administered by the NOAA Office of Ocean and Coastal Resource Management (OCRM), provides for management of the nation's coastal resources, including the Great Lakes, and balances economic development with environmental conservation. The CZMA provides a procedure for States to review Federal actions for consistency with their own approved coastal zone management program.

Although Federal lands and actions are exempt from State law jurisdiction, CZMA requires Federal activities that are reasonably likely to affect the use of lands, waters, or natural resources of the coastal zone to be consistent to the maximum extent practicable with the enforceable policies of a State's coastal zone management plan. All Federal activities inside the coastal zone are automatically subject to consistency review and require a consistency determination (1-EQ [Rev 2]).

3.8.2 Existing Conditions

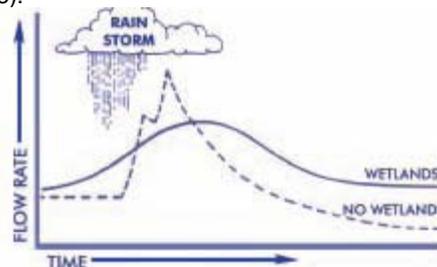
3.8.2.1 Coastal Zone Management

The coastal zone of the U.S. contains a wide range of natural habitats such as sand dunes, marshes, coastal and mangrove forests, coral reefs, and submerged aquatic vegetation (SAV) beds. These coastal habitats are economically and ecologically valuable. They provide food, shelter, and breeding grounds for coastal and marine species, including commercially important species such as crabs, shrimp, and salmon. The commercial fishing industry is a multi-billion dollar industry in the U.S. According to NOAA's Fishery Service, approximately 75 percent of the commercially important fish species depend upon coastal wetlands and estuaries at some point during their lifetime (NOAA 2007a).

Coastal ecosystems comprise less than 10 percent of the Nation's land area, but support far greater proportions of our living resources. Specifically, coastal areas support a much higher percentage of the Nation's threatened and endangered species fishery resources, migratory songbirds, and migrating and wintering waterfowl (USFWS 2009c). Coastal habitats also provide other irreplaceable services. Marshes filter pollutants and retain

The Special Case of Coastal Wetlands

Wetlands in many locations play an important role in flood protection. Nowhere is this function more important than along coastal areas. Coastal areas are vulnerable to hurricanes and other powerful storms, and the flat coastal terrain means that land and property can be exposed to the full power of these storms. Preserving and reconstructing coastal marshes can help reduce storm damage. Coastal wetlands serve as storm surge protectors when hurricanes or tropical storms come ashore. In the Gulf coast area, barrier islands, shoals, marshes, forested wetlands and other features of the coastal landscape can provide a significant and potentially sustainable buffer from wind wave action and storm surge generated by tropical storms and hurricanes (EPA 2009e).



More Wetlands Mean Less Flooding

Wetland restoration and preservation is an important component of a comprehensive flood protection strategy. Preserving wetlands, along with other flood control measures, can offer a degree of protection against flooding that is often more effective and costs less than a system of traditional dikes and levees (EPA 2009e).

nutrients, helping to maintain good coastal water quality. Wetlands, barrier islands, and coral reefs provide significant protection against coastal storms—dissipating wave energy and absorbing flood waters (NOAA 2007a).

A significant portion of the threat to coastal waters is caused by nonpoint source pollution. Major sources in coastal waters include forestry and agriculture (Table 3.8-1). Other significant sources include faulty septic systems, marinas, physical changes to stream channels, and habitat degradation, especially the destruction of wetlands and vegetated areas near streams (EPA 1996).

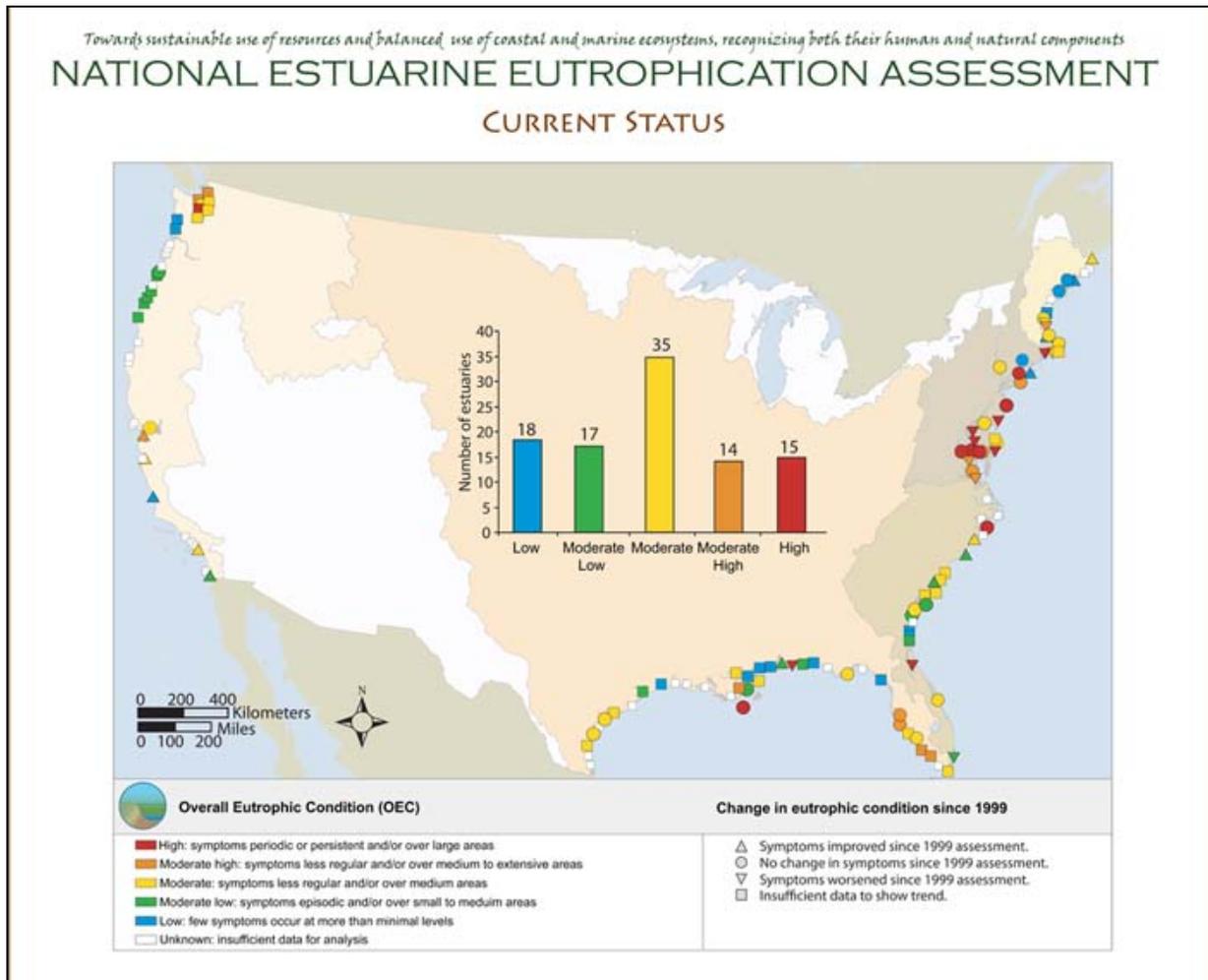
Table 3.8-1. Nonpoint Pollution Sources and Impacts to Coastal Resources

Pollution Activities	Resulting Threats	Resulting Impacts
Forestry Road Construction Timber Harvesting Pesticide and Fertilized Application Fire Management	Increased Nutrients Increased Sedimentation Increased Erosion	Loss of Species Abundance Loss of Species Diversity Shellfish Bed Closures
Agriculture Animal Feed Lots Soil Tillage Grazing Activities Fertilizer and Pesticide Application Irrigation	Habitat Loss/Degradation (wetlands, seagrasses, coral reefs) Increased Toxic Chemicals (pesticides, heavy metals, oils)	Swimming Beach Closures Declines in Species Health Fish Kills Algae Blooms (including toxic algae)
Urbanization Land Clearing Construction Septic Tanks Pet Waste	Increased Water Temperatures Increased Pathogens (bacteria, viruses)	Human Disease Outbreaks Flooding Low Dissolved Oxygen in Water
Marinas Construction Boat Cleaning & Fueling Waste Disposal		
Hydromodification Stream Bank & Channel Modification Dam Construction Wetland Loss		

Source: NOAA 2007b.

A significant threat to the health of coastal waters is eutrophication. Eutrophication is caused by excess nutrients and is expressed by symptoms such as increased chlorophyll and macroalgae and decreased dissolved oxygen. A recent investigation (National Estuarine Eutrophication Assessment (Bricker *et al.* 2007) evaluated both current eutrophic conditions and the effectiveness of management actions aimed at reducing eutrophic conditions. Eutrophication is a widespread problem in the U.S., with the majority of assessed estuaries showing signs of eutrophication – 65 percent of assessed systems, representing 78 percent of the assessed

estuarine area, had moderate to high overall eutrophic conditions (Figure 3.8-1). Change analysis showed that conditions in most assessed systems remained the same since the early 1990s; however, 13 systems (9 percent of the assessed area) improved and 13 systems (15 percent of the assessed area) worsened (*Ibid*).



Source: Bricker *et al.* 2007.

Figure 3.8-1. Overall Eutrophic Condition of Coastal Waters

3.8.2.2 Coastal Zone Management – CRP

Coastal areas are in many respects the end of the line for receiving impacts from CRP provisions. In general, all of the conservation practices that work to increase water quality for areas that ultimately flow to the coastal environment result in benefits to the coastal environment, most notably in the form of cleaner coastal and estuarine areas. The cleaner estuarine areas can in turn support an improved quality of commercial fisheries. In addition, reduced sediment loading to coastal waters from the implementation of CPs in coastal watersheds can result in reductions in dredging costs in nearshore waters.

3.9 SOIL RESOURCES

3.9.1 Definition of the Resource

Soils are a natural body made up of weathered minerals, organic matter, air, and water. Soils are formed mainly by the weathering of rocks, the decaying of plant matter, and the deposition of materials such as chemical and biological fertilizers that are derived from other origins. Soils are differentiated based on characteristics such as particle size, texture, and color, and classified taxonomically into soil orders based on observable properties such as organic matter content and degree of soil profile development (Brady and Weil 2002). Soil taxonomy was established to classify soils according to the relationship between soils and the factors responsible for their character (NRCS 1999). Soil taxonomy has organized soils into four levels of classification, the highest being the soil order. For the purposes of this analysis, soil resources include all soil orders within the United States. At this broad level of classification, there are twelve soil orders: Alfisols, Andisols, Aridisols, Entisols, Gelisols, Histosols, Inceptisols, Mollisols, Oxisols, Spodosols, Ultisols, and Vertisols.

3.9.2 Existing Conditions

As of June 2009, about 33.8 million acres of land were enrolled in the CRP program, of that about 4.3 million acres were enrolled in the continuous CRP leaving a balance of about 29.5 million acres in general sign-up contracts. The bulk of the general sign-up contracts are on highly erodible land (land having an erodibility index greater than eight). These contract acres are comprised of hundreds of thousands of soils and literally millions of individual soil map units that are used to determine cropland eligibility.

According to NRCS, soil quality is the capacity of a given soil to function within natural or managed ecosystems to sustain plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation (NRCS 2001). The 2003 CRP PEIS provides a discussion of the factors affecting soil erosion, types of erosion, and its relation to land cover and land use (FSA 2003), but the following provides a brief overview. Soil has several functions, including regulating water, sustaining plant and animal life, filtering potential pollutants, cycling nutrients, and supporting buildings and structures. Management choices affect the amount of soil organic matter, soil structure, soil depth, water, and nutrient holding capacity. Erosion is the wearing away of the earth's surface by wind and water. The erosion potential for the various soil orders is highly variable and is influenced by such factors as soil type, amount and type of vegetation present, degree of disturbance, and weather conditions. Site-specific studies would be necessary to determine a specific erosion potential; however, a list of soils considered highly erodible has been developed and maintained on a county level by NRCS. Soils susceptible to erosion are identified using the Erodibility Index that provides a numerical expression of the potential for a soil to erode based on factors such as topography and climate. The index value is derived from the Revised Universal Soil Loss Equation 2 (RUSLE2) for water erosion, and the WEQ for wind erosion. The RUSLE equation is $A = RKLSCP$ and takes into account rainfall/runoff (R), soil erodibility (K), slope length (L), slope steepness (S), cover management (C), and supporting practices (P). The WEQ equation is $E = f(KLCLV)$. The factors for the wind erosion equation are as follows: E is the erosion in tons per

acre per year, f means that it is a “function of”, I is the inherent erodibility of the soil from wind. K is a soil roughness factor, C is a climate factor that varies by county, L is a field width factor and V is a factor for estimating surface residue cover.

A study completed by the Food and Agricultural Policy Research Institute (FAPRI 2007) indicates that, on average across the nation, we find that soil, nitrogen, and phosphorus losses (water and wind combined) are reduced by an estimated 12.1 tons, 25.6 pounds, and 6.4 pounds, respectively, per acre per year on CRP land. While General Signup practices reduce sheet and rill erosion on highly erodible land, Continuous Signup buffer practices filter and trap sediment and nutrients that flow across the established buffer. The Food and Agricultural Policy Research Institute, University of Missouri (FAPRI) study estimates that “nearly 96.0 tons of waterborne soil are retained by each acre of buffer per year” (*Ibid*). In contrast, a study sponsored by the CEAP modeled soil loss associated with crop production with the purpose of identifying cropland areas of the country that would benefit the most from the application of conservation practices for working lands (Potter *et al.* 2006).

The study found critical acres with sediment loss and nutrient loss estimates in the top 15 percent nationally, wind erosion rates in the top six percent nationally, and soil quality degradation indicator scores in the bottom 15 percent nationally are concentrated in six areas (see Figure 3.9-1):

- cropland in the Lower Mississippi River Basin below St. Louis and the lower reaches of the Ohio River;
- the Chesapeake Bay watershed in Maryland and Pennsylvania;
- the southern two-thirds of Iowa and parts of Illinois and Missouri adjacent to Iowa;
- along the Atlantic Coastal Plain stretching from Alabama to eastern Virginia and Delaware;
- in northwestern Texas; and
- selected cropland regions in the West.

Enrolling cropland in CRP clearly benefits soil quality and health; however, there are CRP activities which have the potential to negatively impact soils. These are most often associated with preparing the ground for installation of the conservation cover or practice, certain maintenance and mid-contract management practices, and harvesting CRP lands. Practices that may have a negative impact on soils include: ground disturbing activities (tillage) during establishment; mid-contract management practices such as prescribed burning, tillage or herbicide application for cover enhancement, and thinning for timber stand improvement. Generally these are practices that leave the soil exposed to wind and water erosion. In addition, managed harvesting of CRP lands may expose soil to wind and water erosion, but the impacts are minimal as there is residual cover and living plants to protect the soil surface. General minimization (best management practices) or mitigation measures may include timing the measures to minimize exposure during periods of high potential erosion, rotating the measures to different fields each year or applying to only part of the field each year (e.g., do one third of each field each of three years for mid-contract management or harvest), or interseeding covers

of grasses or legumes after tillage. Conservation plans will develop measures designed specifically to benefit the particular CP installed and any unique situations found on particular lands proposed for enrollment. Prior to acceptance into the program, a site-specific environmental evaluation would be performed that assesses potential impacts to soils and whether additional assessment under NEPA would be required. The geographic scale of the lands affected by the proposed action encompasses the entire U.S. and its territories; hence, a great variety of soils and cropping systems may be affected by the alternatives analyzed in this SEIS. Given the national scale of CRP and the programmatic level of this analysis, it is not feasible to analyze all of the soils and associated cropping systems that may be present on lands eligible for enrollment, but broad generalizations can be made based on soil orders.

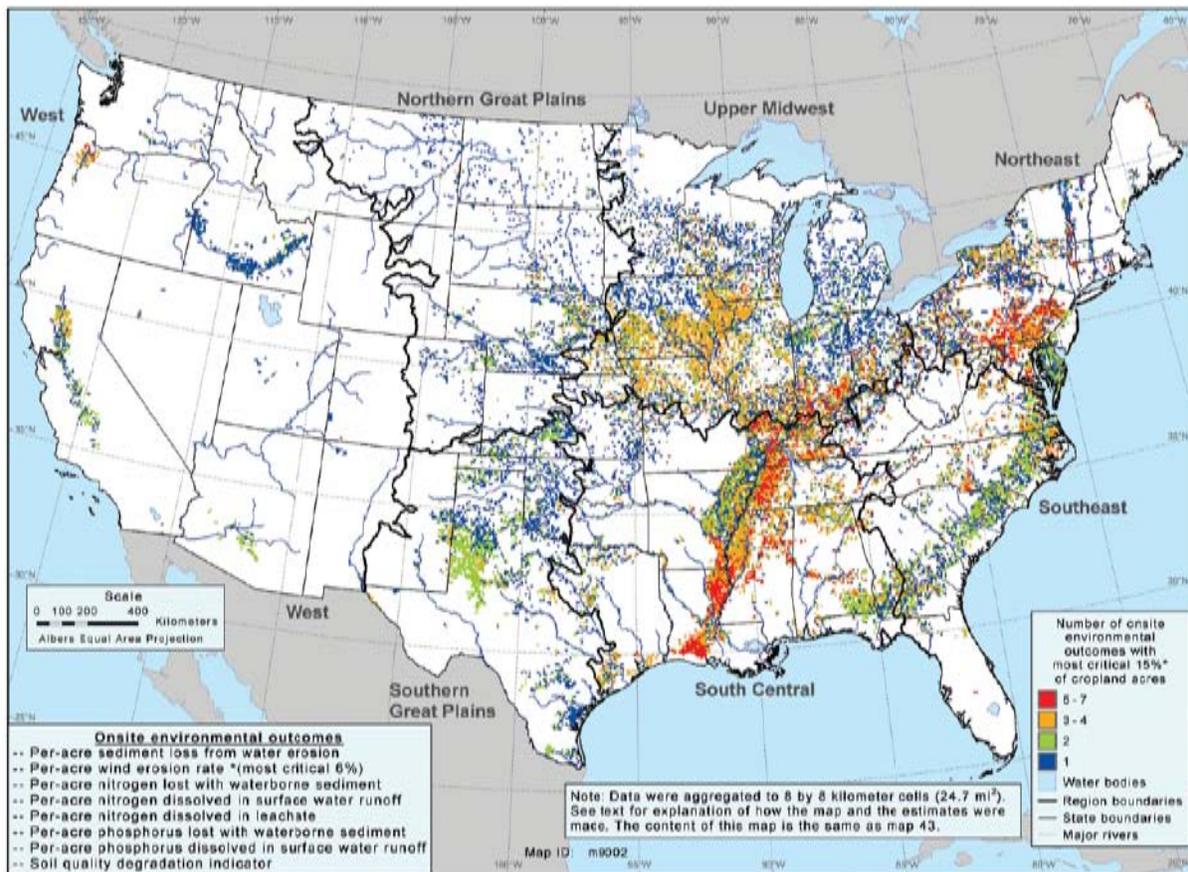


Figure 3.9-1. Priority Cropland Acres with Highest Potential for Soil Loss, Nutrient Loss, and Soil Quality Degradation (Potter *et al.* 2006)

3.9.2.1 Soil Orders

The twelve soil orders present in the continental U.S. are presented in Figure 3.9-2 and briefly described below. (University of Idaho; College of Agriculture and Life Sciences; Plant, Soil, and Entomological Sciences; Soil and Land Resources) (McDaniell 2009).

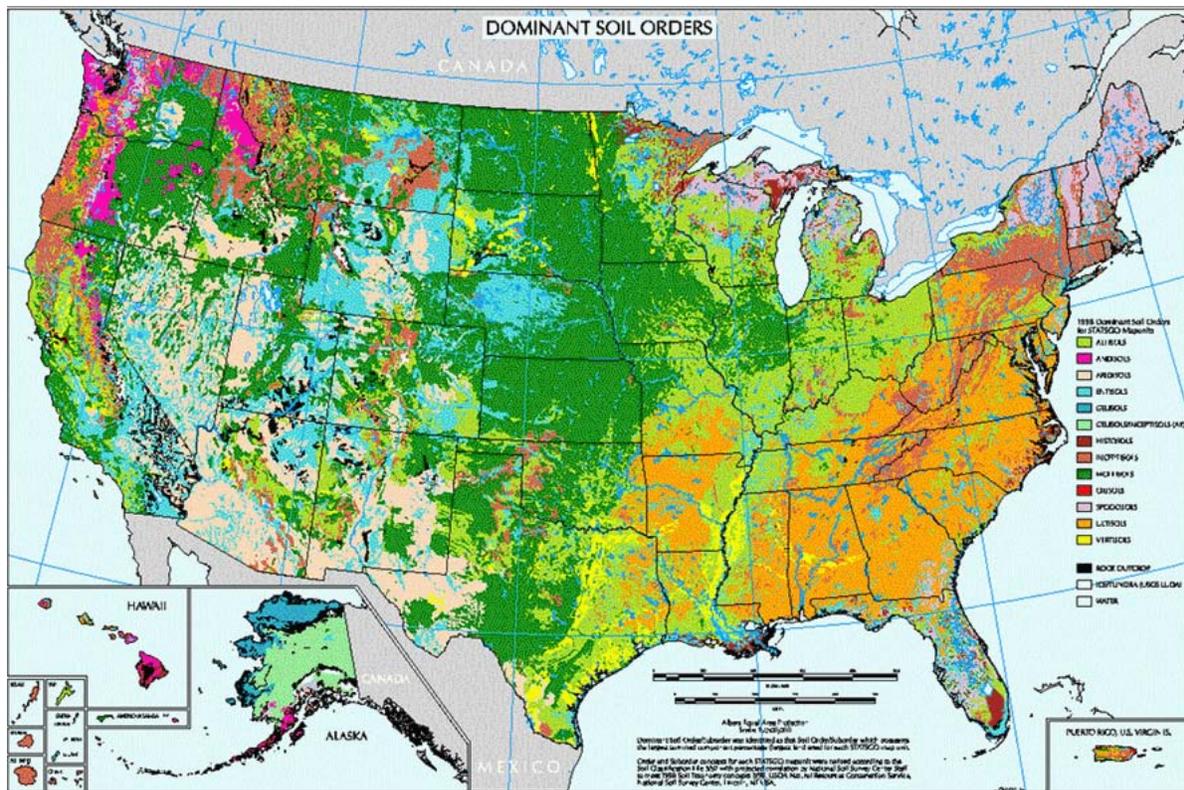


Figure 3.9-2. U.S. Soil Taxonomy: Soil Regions of the United States (NRCS 1999b)

Gelisols

Gelisols are soils of very cold climates that contain permafrost within two meters of the surface. These soils are limited geographically to the high-latitude polar regions and localized areas at high mountain elevations. Because of the extreme environment in which they are found, Gelisols support only 0.4 percent of the world's population - the lowest percentage of any of the soil orders. Gelisols are estimated to occupy 9.1 percent of the Earth's ice-free land area and 8.7 percent of the U.S. Although some Gelisols may occur on very old land surfaces, they show relatively little morphological development. Low soil temperatures cause soil-forming processes such as decomposition of organic materials to proceed very slowly. As a result, most Gelisols store large quantities of organic carbon - only soils of wetland ecosystems contain more organic matter. Gelisols of the dry valleys of Antarctica are an exception - they occur in a desert environment with no plants and consequently contain very low quantities of organic carbon. The frozen condition of Gelisol landscapes makes them sensitive to human activities.

Histosols

Histosols are soils that are composed mainly of organic materials. They contain at least 20-30 percent organic matter by weight and are more than 40 cm thick. Bulk densities are quite low, often less than 0.3 g cm³. Most Histosols form in settings such as wetlands where restricted drainage inhibits the decomposition of plant and animal remains, allowing these organic materials to accumulate over time. As a result, Histosols are ecologically important because of

the large quantities of carbon they contain. These soils occupy 1.2 percent of the ice-free land area globally and 1.6 percent of the U.S. Histosols are often referred to as peats and mucks and have physical properties that restrict their use for engineering purposes. These include low weight-bearing capacity and subsidence when drained. They are mined for fuel and horticultural products.

Spodosols

Spodosols are acid soils characterized by a subsurface accumulation of humus that is complexed with Aluminum and iron. These photogenic soils typically form in coarse-textured parent material and have a light-colored E horizon overlying a reddish-brown spodic horizon. The process that forms these horizons is known as *podzolization*. Spodosols often occur under coniferous forest in cool, moist climates. Globally, they occupy 4 percent of the ice-free land area. In the U.S., they occupy 3.5 percent of the land area. Many Spodosols support forest. Because they are naturally infertile, Spodosols require additions of lime in order to be productive agriculturally.

Andisols

Andisols are soils that have formed in volcanic ash or other volcanic ejecta. They differ from those of other orders in that they typically are dominated by glass and short-range-order colloidal weathering products such as allophane, imogolite, and ferrihydrite. As a result, Andisols have andic properties - unique chemical and physical properties that include high water-holding capacity and the ability to 'fix' (and make unavailable to plants) large quantities of phosphorus. Globally, Andisols are the least extensive soil order and only account for 1 percent of the ice-free land area. They occupy 1.7 percent of the U.S. land area, including some very productive forests in the Pacific Northwest region.

Oxisols

Oxisols are very highly weathered soils that are found primarily in the intertropical regions of the world. These soils contain few weatherable minerals and are often rich in Iron and aluminum oxide minerals. Oxisols occupy 7.5 percent of the global ice-free land area. In the U.S., they only occupy 0.02 percent of the land area and are restricted to Hawaii. Most of these soils are characterized by extremely low native fertility, resulting from very low nutrient reserves, high phosphorus retention by oxide minerals, and low cation exchange capacity (CEC). Most nutrients in Oxisol ecosystems are contained in the standing vegetation and decomposing plant material. Despite low fertility, Oxisols can be quite productive with inputs of lime and fertilizers.

Vertisols

Vertisols are clay-rich soils that shrink and swell with changes in moisture content. During dry periods, the soil volume shrinks, and deep wide cracks form. The soil volume then expands as it wets up. This shrink/swell action creates serious engineering problems and generally prevents formation of distinct, well-developed horizons in these soils. Globally, Vertisols occupy 2.4 percent of the ice-free land area. In the U.S., they occupy 2.0 percent of the land area and occur primarily in Texas.

Aridisols

Aridisols are calcium carbonate (CaCO₃)-containing soils of arid regions that exhibit at least some subsurface horizon development. They are characterized by being dry most of the year and limited leaching. Aridisols contain subsurface horizons in which clays, calcium carbonate, silica, salts, and/or gypsum have accumulated. Materials such as soluble salts, gypsum, and CaCO₃ tend to be leached from soils of moister climates. Aridisols occupy 12 percent of the Earth's ice-free land area and 8.3 percent of the U.S. Aridisols are used mainly for range, wildlife, and recreation. Because of the dry climate in which they are found, they are not used for agricultural production unless irrigation water is available.

Ultisol

Ultisols are strongly leached, acid forest soils with relatively low native fertility. They are found primarily in humid temperate and tropical areas of the world, typically on older, stable landscapes. Intense weathering of primary minerals has occurred, and much calcium, magnesium, and potassium has been leached from these soils. Ultisols have a subsurface horizon in which clays have accumulated, often with strong yellowish or reddish colors resulting from the presence of Iron oxides. The 'red clay' soils of the southeastern U.S. are examples of Ultisols. Ultisols occupy 8.1 percent of the global ice-free land area and support 18 percent of the world's population. They are the dominant soils of much of the southeastern U.S. and occupy 9.2 percent of the total U.S. land area. Because of the favorable climate regimes in which they are typically found, Ultisols often support productive forests. The high acidity and relatively low quantities of plant-available calcium, magnesium, and potassium associated with most Ultisols make them poorly suited for continuous agriculture without the use of fertilizer and lime. With these inputs, however, Ultisols can be very productive.

Mollisols

Mollisols are the soils of grassland ecosystems. They are characterized by a thick, dark surface horizon. This fertile surface horizon, known as a mollic epipedon, results from the long-term addition of organic materials derived from plant roots. Mollisols primarily occur in the middle latitudes and are extensive in prairie regions such as the Great Plains of the U.S. Globally, they occupy 7.0 percent of the ice-free land area. In the U.S., they are the most extensive soil order, accounting for 21.5 percent of the land area. Mollisols are among some of the most important and productive agricultural soils in the world and are extensively used for this purpose.

Alfisols

Alfisols are moderately leached soils that have relatively high native fertility. These soils have mainly formed under forest and have a subsurface horizon in which clays have accumulated. Alfisols are primarily found in temperate humid and subhumid regions of the world. Alfisols occupy 10.1 percent of the global ice-free land area. In the U.S., they account for 13.9 percent of the land area. Alfisols support about 17 percent of the world's population. The combination of generally favorable climate and high native fertility allows Alfisols to be very productive soils for both agricultural and silvicultural use.

Inceptisols

Inceptisols are soils that exhibit minimal horizon development. They are more developed than Entisols, but still lack the features that are characteristic of other soil orders. Inceptisols are widely distributed and occur under a wide range of ecological settings. They are often found on fairly steep slopes, young geomorphic surfaces, and on resistant parent materials. Land use varies considerably with Inceptisols. A sizable percentage of Inceptisols are found in mountainous areas and are used for forestry, recreation, and watershed. With recent taxonomic changes, Inceptisols now occupy an estimated 17 percent of the global ice-free land area, the largest of any soil order. In the U.S., they occupy 9.7 percent of the land area. Inceptisols support 20 percent of the world's population, also the largest percentage of any of the soil orders.

Entisols

Entisols are soils of recent origin. The central concept is soils developed in unconsolidated parent material with usually no genetic horizons except an A horizon. All soils that do not fit into one of the other 11 orders are Entisols. Thus, they are characterized by great diversity, both in environmental setting and land use. Many Entisols are found in steep, rocky settings; however, Entisols of large river valleys and associated shore deposits provide cropland and habitat for millions of people worldwide. Globally Entisols are extensive, occupying 16 percent of the Earth's ice-free land area. Only Inceptisols are more extensive. In the U.S., Entisols occupy 12.3 percent of the land area.

Table 3.9-1 provides a summary description of each of the soil orders.

Table 3.9-1. Soil Orders and Brief Description

Order	Description
Alfisols	A dark surface horizon mineral soil, similar to mollisols however, lacking the same level of fertility and more acidic.
Andisols	Soils of recent volcanic origin having cinders and volcanic glass. Typically found in the northwest and in Alaska.
Aridisols	These soils are found in the arid regions of the U.S. Typically high in calcium, Magnesium, potassium and sodium. The soils have an alkaline pH.
Entisols	This soil order is relatively un-weathered. These soils have no diagnostic horizon development. Often found on floodplains, glacial outwash areas and other areas receiving alluvial materials.
Gelisols	Soils formed in very cold climates. Soils have permafrost within 100 cm (40 inches) of the surface.

Table 3.9-1. Soil Orders and Brief Description (cont'd)

Order	Description
Inceptisols	Soils of the humid and sub humid region. Weathering has created minimal diagnostic differentiation in the soil column.
Histosols	Soils high in organic carbon. Dark surface profile. Often associated with wetlands.
Mollisols	Dark colored mineral soils developed under grassland conditions. Rich in nutrients, very fertile. Associated with America's corn belt.
Oxisols	The most highly weathered soil order. These soils are found in the tropics and sub-tropics. They are acidic and low in basic plant nutrients.
Spodosols	These soils have undergone significant weathering. Organic carbon, aluminum and often iron has been translocated to a lower horizon referred to a spodic horizon. These soils are acidic and may have deleterious levels of aluminum in the subsoil.
Ultisols	Highly weathered soils found in hot, moist regions. Typically acidic and low in available nutrients.
Vertisols	Soils having significant amounts of expanding clay content. Soils typically crack when dry and swell when wet.

3.10 AIR RESOURCES (CARBON SEQUESTRATION)

3.10.1 Definition of the Resource

The Clean Air Act (CAA) requires the maintenance of National Ambient Air Quality Standards (NAAQS). NAAQS, developed by the EPA to protect public health, establish limits for six criteria pollutants: ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), lead (Pb), and inhalable particulates (coarse particulate matter [PM] greater than 2.5 micrometers and less than 10 micrometers in diameter [PM₁₀] and fine particles less than 2.5 micrometers in diameter [PM_{2.5}]). The CAA requires States to achieve and maintain the NAAQS within their borders. Each State may adopt requirements stricter than those of the National standard. Each State is required by EPA to develop a State Implementation Plan that contains strategies to achieve and maintain the National standard of air quality within the State. Areas that violate air quality standards are designated as non-attainment areas for the relevant pollutants. Areas that Air quality in the broadest sense is the atmosphere's capability to sustain healthy life directly through respiration of living organisms and indirectly by buffering the earth from extreme temperature variations. As scientists and the public became more concerned with climate change and the impact that human derived air pollutants were having on global temperature, the EPA identified carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) as the key

greenhouse gases affecting warming temperatures. While each of these gases occurs naturally in the atmosphere, human activity has significantly increased the concentration of these gases since the beginning of the industrial revolution. The level of human produced gases accelerated even more so after the end of the Second World War, when industrial and consumer consumption flourished. With the advent of the industrial age, there has been a 36 percent increase in the concentration of CO₂, 148 percent in CH₄, and 18 percent in N₂O (EPA 2008).

Since CO₂ and CH₄ are two of the key gases most responsible for the “Greenhouse Effect,” scientists and policy makers are interested in carbon (C) gases and how they may be removed from the atmosphere and stored. The process of C moving from atmosphere to the earth and back is referred to as the carbon cycle. Simplified components of the carbon cycle are: (1) conversion of atmospheric C to carbohydrates through the process of photosynthesis; (2) the consumption of carbohydrates and respiration of CO₂; (3) the oxidation of organic carbon creating CO₂; and (4) the return of CO₂ to the atmosphere. Carbon can be stored in four main pools other than the atmosphere: (1) the earth’s crust, (locked up in fossil fuels and sedimentary rock deposits); (2) the oceans where CO₂ is dissolved and marine life creates calcium carbonate shells; (3) in soil organic matter (SOM); and (4) within all living and dead organisms that have not been converted to SOM. These pools can store or sink C for long periods, as in the case of carbon stored in sedimentary rock and in the oceans. Conversely, C may be held for as short a period as the life span of an individual organism. Humans can affect the carbon cycle through activities such as the burning of fossil fuels, deforestation, or releasing soil organic carbon (SOC) through land disturbing activities.

The process of storing C in the ecosystem is called carbon sequestration. Carbon sequestration includes storing carbon in trees, plants and grasses (biomass) in both the above ground and the below ground plant tissues, and in the soil. Soil carbon can be found in the bodies of microorganisms (fungi, bacteria, etc), in non-living organic matter, and attached to inorganic minerals in the soil. Figure 3.10-1 graphically presents a simplified global carbon cycle.

3.10.2 Existing Conditions

Factors that impact carbon sequestration include surface management, rainfall, temperature, soil type, and type of vegetation. Because of the geographic scale of lands affected by the proposed action it is not feasible to estimate the amount of carbon sequestration that could occur on all lands eligible for enrollment into CRP.

A September 2007 Congressional Budget Office paper on the potential for carbon sequestration in the U.S. states that long-term carbon storage potential—or carbon stock equilibrium—of soil and vegetation is limited by characteristics such as location, climate, soil type, and plant species. The extent to which that storage potential is realized depends partly on how land is used. Total soil carbon sequestration from setting aside highly erodible land is over 10 terragrams of C annually (11.0 million tons a year) on the 21.9 million ha (54.1 million ac) where corn, cotton, sorghum, soybean, wheat or fallow were grown in 1997 (Sperow 2007). The CRP Summary and Enrollment Statistics Report for 2008 indicates 34.6 million acres were enrolled at

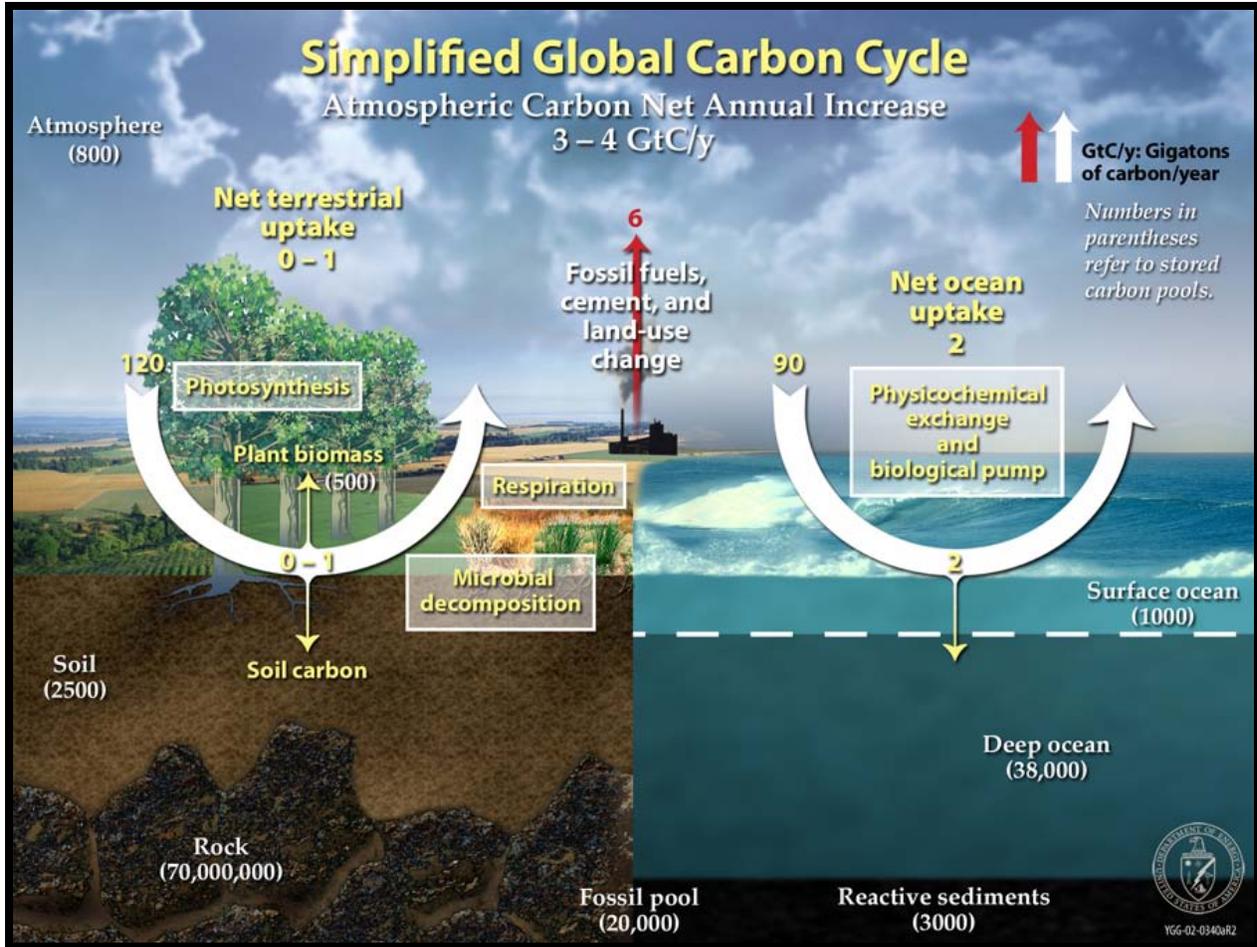


Figure 3.10-1. Simplified Global Carbon Cycle (USDOE 2009)

the end of the FY (FSA 2009c). Using Sperow and CRP figures, over six million tons of C a year would be sequestered by converting HEL to CRP conservation purposes. Figure 3.10-2 presents the predicted annual rate of soil carbon sequestration for 1997 to 2017 when production of corn, cotton, sorghum, soybean, wheat, and fallow is eliminated on highly erodible land and grass is planted.

Data from the Conservation and Wetland Reserve Programs have been analyzed to quantify the carbon dynamics of associated cropland converted to grassland or forestland (Barker *et al.* 1996). Land-area enrollments were multiplied by grassland and forestland-C densities to calculate C pools and fluxes 50 years into the future. Conclusions of the research were: (1) cropland converted to forestland gained C at a rate about seven times greater than cropland converted to grassland; (2) maintaining the existing CRP grassland will provide a substantial C sequestration potential because of the large area involved; and (3) afforestation of additional cropland would increase the potential to sequester atmospheric C for many years (*Ibid*).

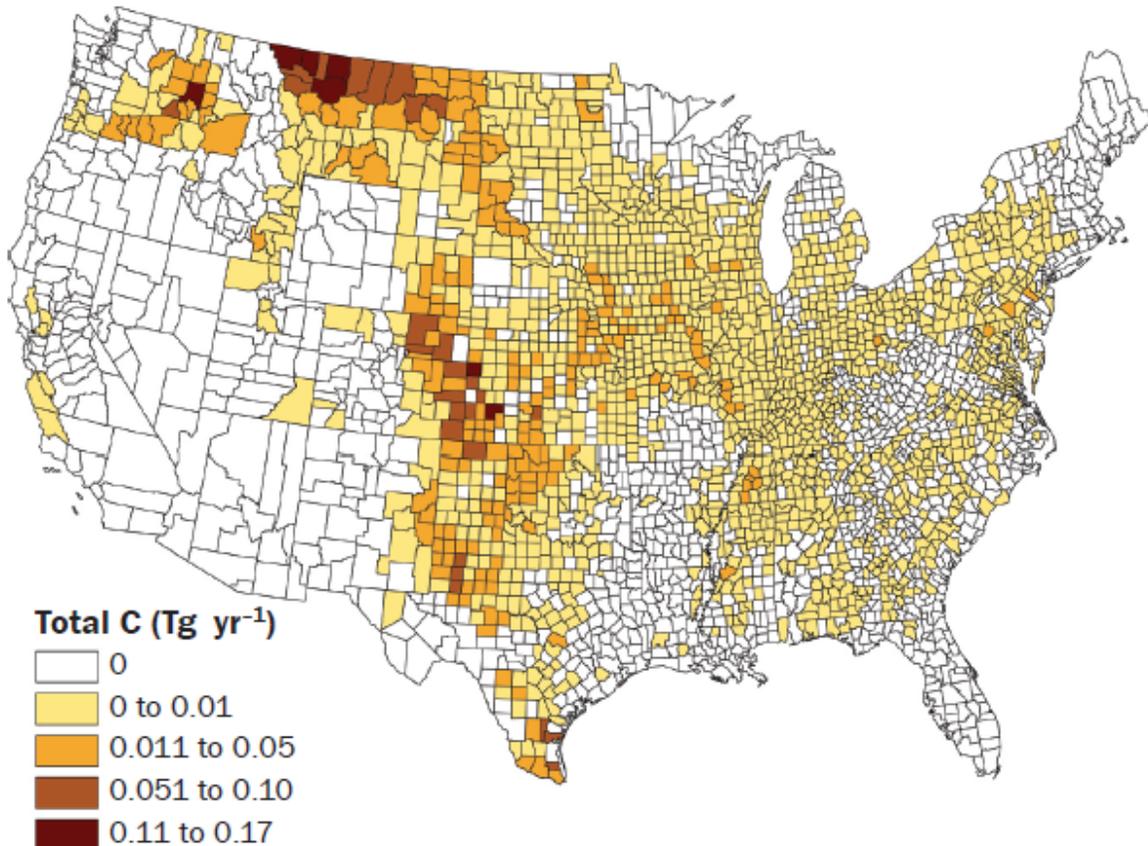


Figure 3.10-2. Predicted Annual SOC Sequestration Gained by Conversion of Cropland to Grassland 1997-2017 (Sperow 2007)

Principal processes of carbon sequestration in soil include humification of organic materials, aggregation by formation of organomineral complexes, deep placement of organic matter beneath the plow zone, deep rooting, and calcification. In contrast, leading causes of decline in SOC content include different soil degradative processes (e.g., erosion, compaction, and decline in soil structure, mineralization, or oxidation of humic substances). These soil degradation processes are set in motion by anthropogenic activities that include plowing, biomass burning, drainage of wetlands, improper grazing practices, and mining of soil fertility by low productivity subsistence agricultural practices (Bruce *et al.* 1999).

A 2004 study by the USDA's Economic Research Service examined the economics of sequestering carbon in the U.S. agricultural sector, finding that at lower payment levels (\$10 per metric ton for permanently sequestered carbon), land owners would find it more cost effective to implement changes in crop rotation or tillage practices. At higher payment levels, afforestation through the conversion of pastureland would be more cost effective sequestration. Ultimately, the study concludes a 50 percent cost-share for cropland conversion to forestry or grasslands would increase sequestration at low carbon payment levels but not at high payment levels (Lewandowski *et al.* 2004).

Changes in soil carbon content reflect the net result of carbon input (via plant litter) and carbon loss (via decomposition). To elicit a gain in carbon storage, therefore, a new management practice must (a) increase the amount of carbon entering the soil as plant residues or (b) suppress the rate of soil carbon decomposition. The former is a function of the net primary production (i.e., plant yield) and the proportion of the plant yield that is eventually returned to the soil in the form of plant litter or crop residues. The rate of decomposition is controlled by soil conditions (e.g., moisture, temperature, and oxygen sufficiency), composition of the organic material, placement of the material within the soil profile, and the degree of physical protection (e.g., within soil aggregates) (Bruce *et al.* 1999).

Perhaps the most effective way of restoring soil carbon content on land that has been cultivated is to re-establish and maintain perennial vegetation. Soil carbon increases have been observed for both managed and unmanaged conversions of cultivated lands. These increases in soil carbon can be attributed to the absence of physical disturbance due to tillage, increased carbon inputs resulting from less removal of carbon in harvested crops, and greater allocation of carbon below ground, particularly with perennial grasses (Abrahamson *et al.* 2009).

A study completed by FAPRI estimating the soil carbon benefits of CRP found that without CRP soil carbon in agriculturally productive land falls six percent over a 10 year period, but for the same period in CRP, soil carbon increases seven percent. This effect is estimated at an annual average of 23 million tons per year for all CRP field-practice land with the greatest gains in the Mississippi Delta and Southeastern States (FAPRI 2007). On average, long-term cultivated agricultural lands in the U.S. have lost approximately 25 to 30 percent of the original soil C present under native vegetation (Sperow 2007).

Conversion of previously cultivated land to perennial grassland usually results in high rates of soil carbon gain. The CRP, started in 1985 and currently including about 14 million hectares of land planted to perennial grasses or trees, provides an estimate of these rates of carbon accrual. Analysis of soils on CRP lands in the western and central U.S. shows rates of <0.10 to 0.40 metric tons/hectare/year as soil organic matter and 0.25 to 1.35 metric tons/hectare/year of total below ground carbon, including roots (Gomez 1995). These rates of accrual, however, will diminish with time, particularly because a large part of the initial carbon gain may occur as roots and other plant litter. Based on these estimates and other values in the literature, we assume that a typical rate of carbon gain upon conversion to perennial grasses averages about 0.8 metric tons/hectare/year in the first decade after conversion (Bruce *et al.* 1999). The forested sandy soil in Table 3.10-1 contains more carbon than the permanent pasture sandy soil and permanent pasture sandy soil stores more carbon than the sandy soil that is used to produce crops and is utilizing conservation tillage.

Torbet *et al.* (2004) (Table 3.10-1) determined total organic carbon content in a Blanton loamy sand soil under forest vegetation, grass vegetation and cropland with conservation tillage. He found 26.46 Mg ha⁻¹ in the top five cm with forest vegetation, 15.96 Mg ha⁻¹ in the top five cm with permanent pasture and 7.11 Mg ha⁻¹ in the top five cm for cropland with conservation tillage. In the top 105 cm with forest vegetation, he found 126.49 Mg ha⁻¹; with permanent pasture, he found 71.57 Mg ha⁻¹; and with cropland with conservation tillage he found 60.68 Mg ha⁻¹ (*Ibid*). More than twice as much carbon was found under the forested vegetation as opposed to the cropland that was being farmed with conservation tillage. The permanent

pasture had approximately 20 percent more carbon than the cropland that was being farmed under conservation tillage.

Table 3.10-1. Total Organic Carbon (C) Content in a Blanton loamy Sand Soil in Forest, Pasture, and Conservation Tillage (Torbert *et al.* 2004)

Depth in Centimeters	Forest C (Mg ha ¹)	Permanent Pasture C (Mg ha ¹)	Conservation Tillage C (Mg ha ¹)
0-5	26.46	15.96	7.11
5-10	14.67	8.75	6.33
10-15	10.42	7.09	4.64
15-30	17.35	12.81	9.81
30-45	14.87	7.35	8.2
45-60	13.36	5.64	7.31
60-75	11.21	4.80	6.39
75-90	9.21	4.26	5.61
90-105	8.94	4.91	5.28

It is reasonable to assume that CRP practices, including field borders, filter strips, and grassed waterways, which consist of areas of perennial grass, legumes, or trees in close association with annual cropland have carbon accumulation rates that are equal to whole field CRP conversions on an acre per acre basis (Bruce *et al.* 1999).

The rate of carbon accrual may be much higher in environments with high productivity. For example, rates of carbon gain may be limited in environments where productivity is limited by cool temperatures or aridity. Consequently, rates of accumulation in colder and in semiarid regions of the U.S. may be less than those in higher yield regions (Bruce *et al.* 1999). Based on Table 3.10-2, forest vegetation contained more organic carbon than did permanent pasture on the soil containing more sand; however, on the soil containing more clay, the permanent pasture contained more organic carbon than did the same forested soil. This indicates that cold, arid climates with sandy soils containing low levels of organic matter have the least potential to store carbon, while warmer and more humid climates with soils containing more clay and organic matter have the most potential to store carbon.

Individuals can implement management and conservation practices that enhance carbon sequestration on their own properties and measure potential outcomes of management scenarios using a tool developed in a collaborative research effort between the NRCS and Colorado State University, Natural Resource Ecology Lab (CSU NREL). Currently, the Voluntary Reporting of Greenhouse Gases-Carbon Management Evaluation Tool (COMET-VR) site is hosted by CSU NREL. The COMET-VR provides an interface to a database containing land use data from the Carbon Sequestration Rural Appraisal (CSRA) and calculates in real time the annual carbon flux using a dynamic Century model simulation.

Table 3.10-2. Effect of Land Management System on Organic Carbon (C) Content in the 0-15,15-105 and 0-105 cm Depth Increments (Torbert *et al.* 2004)

Soil Type	Organic C 0-15 cm	Organic C 15-105 cm	Sum Organic C 0-105 cm
Urbo Clay Loam			
Forested	55.5	83.1	138.6
Pasture - Permanent	57.3	89.5	146.8
Blanton Loamy Sand			
Forested	51.6	74.9	126.5
Pasture - Permanent	31.8	39.8	71.6

Users of COMET-VR specify a history of agricultural management practices on one or more parcels of land. This tool estimates soil carbon changes for management alternatives for a 10 year projection period within each USDA Major Land Resource Area (MLRA) in the continental U.S.

CRP activities that have the most potential to negatively impact carbon sequestration include soil tillage associated with installation of a CP or mid-contract management activities such as disking, and harvesting of CRP that removes plant biomass; however, the potential net gain or loss of SOC from these activities is not likely to exceed the net gains of taking land out of agricultural production and installing long-term vegetation covers.

3.11 SOCIOECONOMICS

3.11.1 Definition of the Resource

Socioeconomic analyses generally include detailed investigations of the prevailing population, income, employment, and housing conditions of a community or Region of Influence (ROI). The socioeconomic conditions of a ROI could be affected by changes in the rate of population growth, changes in the demographic characteristics of a ROI, or changes in employment within the ROI caused by the implementation of an action.

The specific socioeconomic resources discussed include total population, rural population, farmland and rangeland, CRP participants, CRP enrolled acres, and selected agricultural input and output business sectors. The resources discussed are essential to the description of the broad-scale demographic and economic components of the national agricultural operator population and industry, and the CRP program as currently implemented.

This section tiers from and updates the socioeconomics section from the 2003 CRP EIS. Information presented in the 2003 CRP EIS that is unchanged is incorporated by reference.

3.11.2 Existing Conditions

3.11.2.1 Structure of Agricultural Production

The U.S. supported a total of just over 2.2 million farms (2,204,792) with a combined land area of just over 922 million acres (922,095,840) in 2007 (National Agricultural Statistics Service [NASS] 2009a, c). Of these, approximately 99.6 percent of the farms were located within the contiguous 48 states, which accounted for approximately 99.8 percent of the land in farms. Given the predominance of acreage and farms within the contiguous 48 states, all information contained within this section has been divided into the NASS regions, where applicable, and then a summation figure of the total U.S., which includes Hawaii, Alaska, Puerto Rico, Guam, and American Samoa. As such, the regions do not sum to the total U.S. figures in the tables located within this section. Figure 3.11-1 illustrates the NASS Farm Production Regions. Figure 3-11-2 illustrates the geographic distribution of farms across the United States.

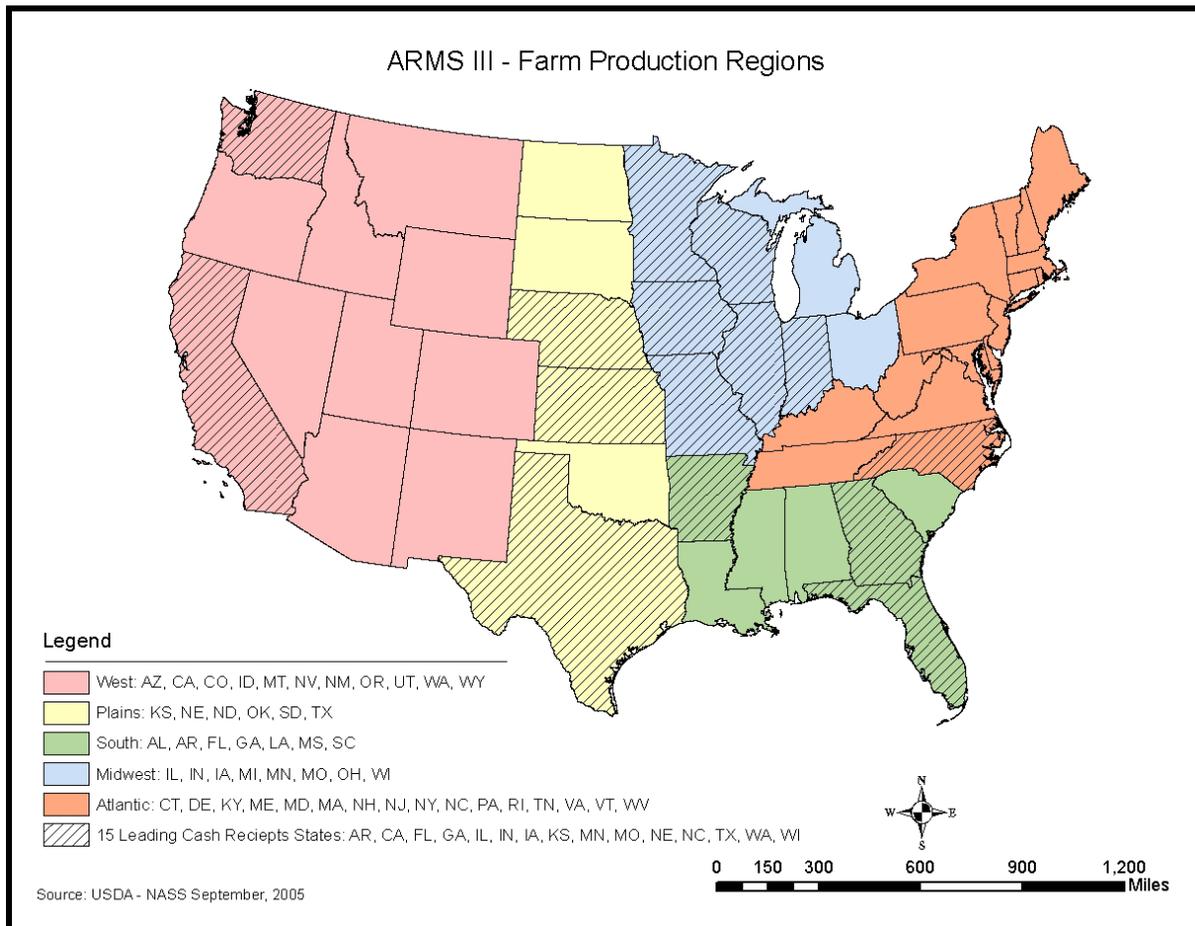


Figure 3.11-1. Farm Production Regions

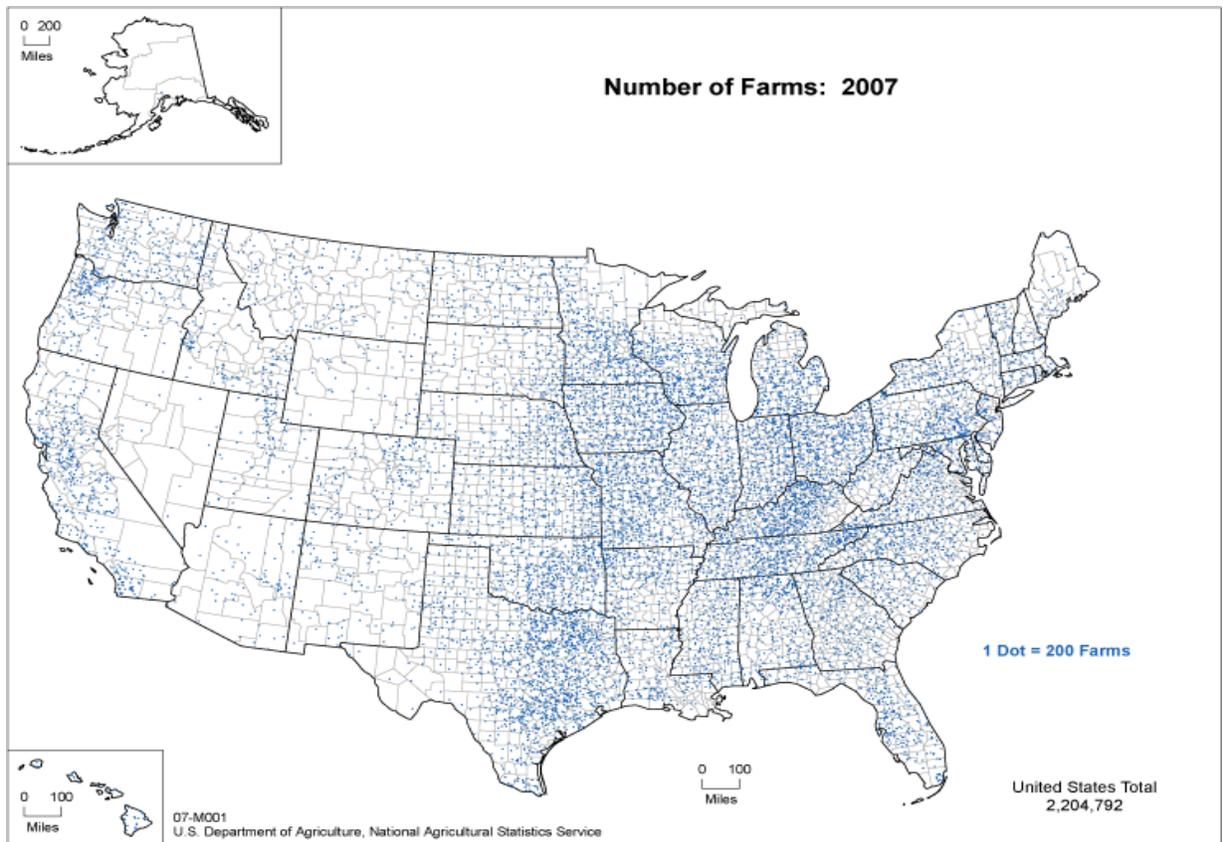


Figure 3.11-2. Number of Farms in the United States (NASS 2009a, c)

Over 90 percent of the farms in 2007 were considered small family farms, with approximately 51 percent of the small farms considered residential/life-style farms (Strickland 2009). The ERS in the Farm Structure Glossary defines a family farm as “as any farm organized as a sole proprietorship, partnership, or family corporation. Family farms exclude farms organized as nonfamily corporations or cooperatives, as well as farms with hired managers. Family farms are closely held (legally controlled) by their operator and the operator’s household” (Banker and Hoppe 2005) Small family farms are defined as are those family farms with agricultural sales of less than \$250,000 per year (*Ibid*). Residential/lifestyle farms are further defined as those farms, whose operators report they had a major occupation other than farming (*Ibid*). Figure 3.11-3 illustrates the percentage of farms operated as family farms within the United States. Additionally, over 51 percent of the farms in 2007 were of 100 acres or less in size (NASS 2009a, c).

Farm Tenure

The total number of farms and full ownership has increased during the five year period from 2002 to 2007, while the amount of land in farms has continued to decline. The number of farms and total farmland acres in various ownership types for Agricultural Census years 2002 and 2007 is illustrated in Table 3.11-1. This continues the trend identified in the 2003 CRP SEIS, where the percentage of farms and land in farms under full ownership was increasing while

tenant farming was declining. Since the 1992 USDA Agricultural Census, tenant farming has declined approximately 35 percent from 217,000 farms to approximately 141,000 farms in 2007, while the tenant-farmed lands have declined approximately 34 percent (NASS 2009a, c).

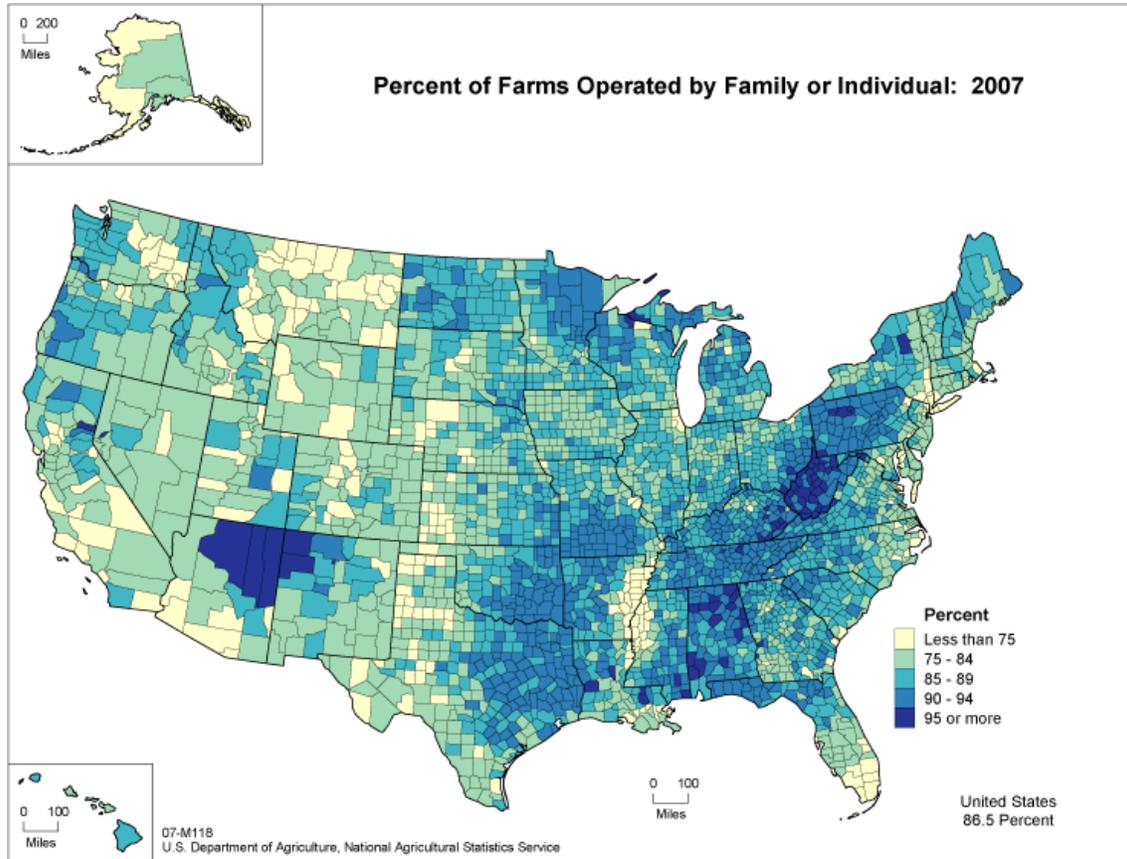


Figure 3.11-3. Percent of Farms Operated as Family Farms. (NASS 2009a, c)

Table 3.11-1. Acreage and Tenure of Farm Operators (2002 and 2007)

	Total (%)	Full Owner* (%)	Part Owner* (%)	Tenant (%)
Number of Farms 2002**	2,129 (100)	1,428 (67)	551 (26)	150 (7)
Number of Farms 2007**	2,205 (100)	1,522 (69)	542 (25)	141 (6)
Land in Farms 2002***	938 (100)	357 (38)	495 (53)	86 (9)
Land in Farms 2007***	922 (100)	344 (37)	496 (54)	82 (9)

Source: NASS 2009a, c

Note: * Full owners own all the land they operate. Part owners own a part and rent from other the rest of the land they operate.

** Thousands of farms

*** Millions of acres

Based on the 2007 Agricultural Census, the South had the highest average percentage of harvested, rented cropland at 18.7 percent with the West trailing with 14.8 percent (Table 3.11-2). The states of Arizona (50.5 percent), Mississippi (33.9 percent), Louisiana (31.1 percent), Arkansas (30.9 percent), and Washington (21.4 percent) all had at least 20 percent of the harvested cropland in the state rented by tenants. This indicates the past trend of high percentages of rented cropland being primarily concentrated in the South and West; however, the Midwest contains approximately 37.6 percent of all harvested cropland in the U.S., with approximately 34.0 percent of all rented, harvested cropland as of 2007.

Table 3.11-2. Percent of Harvested Cropland Rented by Tenants by State and Region

		Agricultural Census Year			
		2007	2002	1997	1992
Region	U.S.	11.99%	11.96%	14.81%	16.37%
West	Arizona	50.47%	36.22%	35.55%	40.82%
	California	18.13%	17.97%	20.19%	21.94%
	Colorado	10.35%	10.28%	14.11%	16.68%
	Idaho	12.32%	11.42%	13.08%	14.19%
	Montana	9.90%	9.90%	11.95%	14.00%
	Nevada	3.75%	6.42%	9.51%	8.32%
	New Mexico	8.90%	8.08%	12.21%	11.30%
	Oregon	14.96%	14.55%	17.17%	17.68%
	Utah	6.77%	6.36%	6.18%	7.30%
	Washington	21.39%	20.10%	24.66%	25.13%
	Wyoming	5.68%	7.69%	9.84%	14.60%
Plains	Kansas	11.22%	9.80%	14.22%	15.36%
	Nebraska	12.14%	12.62%	15.95%	17.55%
	North Dakota	9.42%	9.80%	12.37%	13.18%
	Oklahoma	6.90%	8.10%	11.53%	12.44%
	South Dakota	7.92%	8.01%	10.65%	11.88%
	Texas	16.30%	18.03%	21.69%	24.19%
South	Alabama	9.47%	10.02%	10.28%	11.88%
	Arkansas	30.88%	27.25%	31.90%	34.24%
	Florida	6.26%	5.51%	6.35%	8.15%
	Georgia	9.56%	9.67%	10.36%	11.19%
	Louisiana	31.10%	30.48%	30.35%	35.93%
	Mississippi	33.87%	28.61%	34.33%	35.96%
	South Carolina	9.39%	9.13%	9.60%	11.89%

Table 3.11-2. Percent of Harvested Cropland Rented by Tenants by State and Region (cont'd)

		Agricultural Census Year			
		2007	2002	1997	1992
Region	U.S.	11.99%	11.96%	14.81%	16.37%
Midwest	Illinois	14.97%	14.05%	18.22%	21.17%
	Indiana	10.13%	9.67%	11.56%	12.88%
	Iowa	13.69%	13.99%	18.15%	20.41%
	Michigan	6.67%	6.49%	6.96%	7.67%
	Minnesota	9.48%	9.70%	11.29%	12.36%
	Ohio	8.09%	8.80%	11.64%	13.53%
	Wisconsin	5.54%	6.00%	7.57%	8.90%
	Missouri	8.86%	9.18%	11.12%	12.14%
Atlantic	Connecticut	9.32%	9.54%	9.88%	11.38%
	Delaware	13.91%	14.60%	12.38%	12.72%
	Kentucky	5.21%	5.61%	7.52%	8.16%
	Maine	3.58%	7.94%	5.44%	5.45%
	Maryland	16.01%	16.02%	16.81%	17.76%
	Massachusetts	7.20%	7.09%	9.04%	10.80%
	New Hampshire	5.76%	4.18%	6.81%	6.93%
	New Jersey	11.74%	14.41%	14.38%	16.30%
	New York	3.22%	4.02%	5.76%	6.35%
	North Carolina	10.29%	11.22%	11.83%	13.16%
	Pennsylvania	8.81%	8.70%	11.29%	11.74%
	Rhode Island	10.82%	12.84%	11.83%	12.97%
	Tennessee	6.41%	6.90%	8.27%	9.29%
	Vermont	4.23%	6.25%	9.32%	8.03%
	Virginia	10.25%	9.60%	11.15%	10.15%
West Virginia	4.01%	3.90%	5.28%	5.14%	

Source: NASS 2009a, c

Age of Operators

The on-going observed trend in operator age is that their average age is increasing with each Agricultural Census. The USDA found that average operator age has increased from 50.3 years in 1978 to 57.1 years by 2007 (NASS 2009a, c). They found that the majority of operators are between 45 to 64, but those operators 65 and older are the fastest growing segment of the operator population. Table 3.11-3 illustrates the number of operators by age range. From 2002 to 2007, the number of farm operators increased by approximately seven percent, but the number of operators under 45 years declined by approximately 14 percent. Data indicates that the primary farming years occur between 45 to 64 years of age (Table 3.11-4). Figure 3.11-4

illustrates the average age of operators and Figure 3.11-5 illustrates the percent of farm operators 65 years and older.

Table 3.11-3. Age of Farm Operators and Principal Operators 2007 and 2002

Age Range	2007	2002	Percent Change
All Farm Operators			
Under 45 Years	732,322	851,091	(14.0)
45 to 64 Years	1,725,777	1,527,742	13.0
65 Years and Older	823,435	674,968	22.0
All Principal Farm Operators			
Under 45 Years	387,431	489,365	(20.8)
45 to 64 Years	1,161,707	1,081,787	7.4
65 Years and Older	655,654	557,830	17.5

Source: NASS 2009a, c

Table 3.11-4. Operations Characteristics by General Age Range of Operators

Characteristic		Age Range		
		Under 45 Years	45 to 64 Years	65 Years and Older
Number	Average Size of Farm (acres)	375	439	408
	Average Value of Sales (\$)	160,022	152,734	88,142
	Average Government Payments Received (\$)	3,385	3,889	3,286
Percent of Operators	Sales and Government Payments <\$10,000	56	58	58
	Farms with Internet Access	68	63	39
	Male Operator	87	87	84
	Derive <50% of Income from Farming	78	79	82
	Farming as the Primary Occupation	38	41	57
	Worked Off Farm	81	72	42
	4 Years or Less on Present Farm	24	9	4
	Operator Owns All Farm Acres	59	68	77

Source: NASS 2009a, c

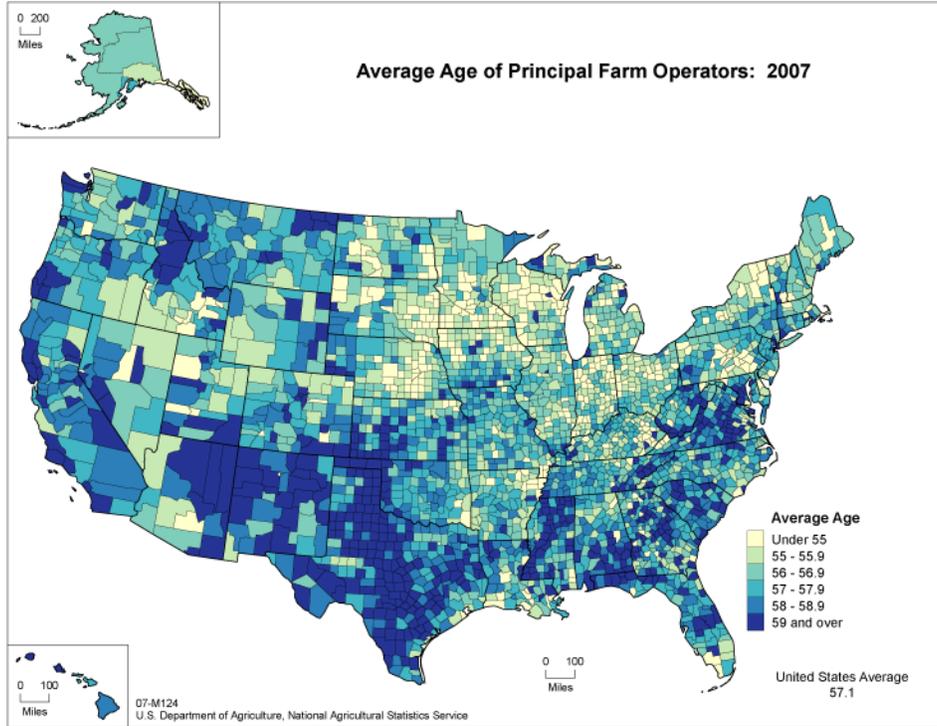


Figure 3.11-4. Average Age of Principal Farm Operators (NASS 2009a, c)

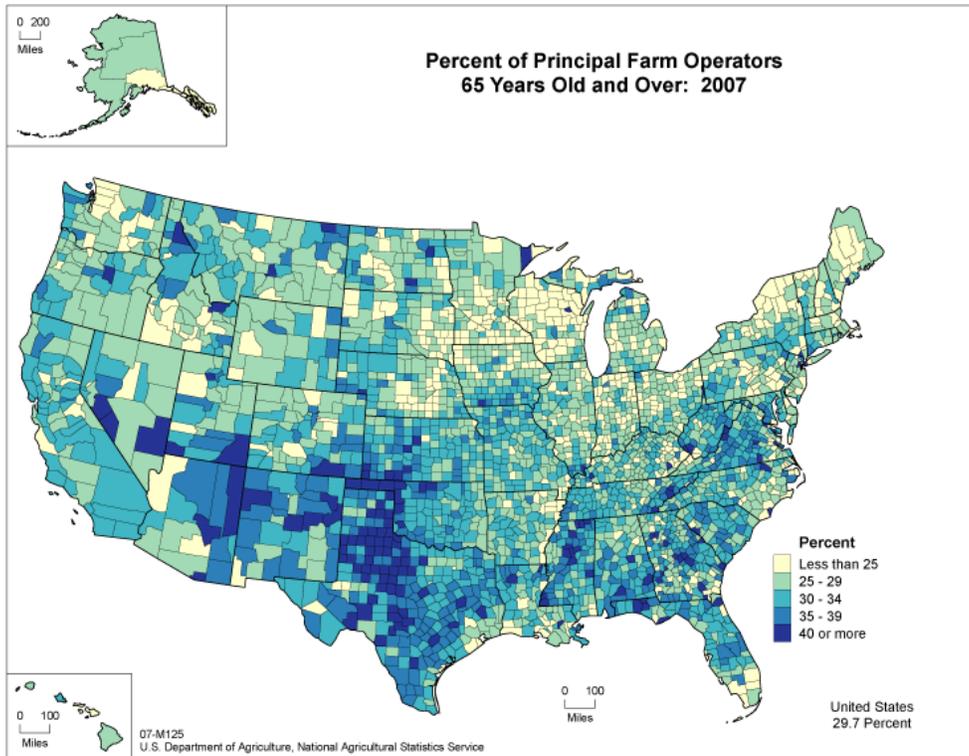


Figure 3.11-5. Percent of Principal Operators 65 Years and Older. (NASS 2009a, c)

Beginning Farmers and Ranchers

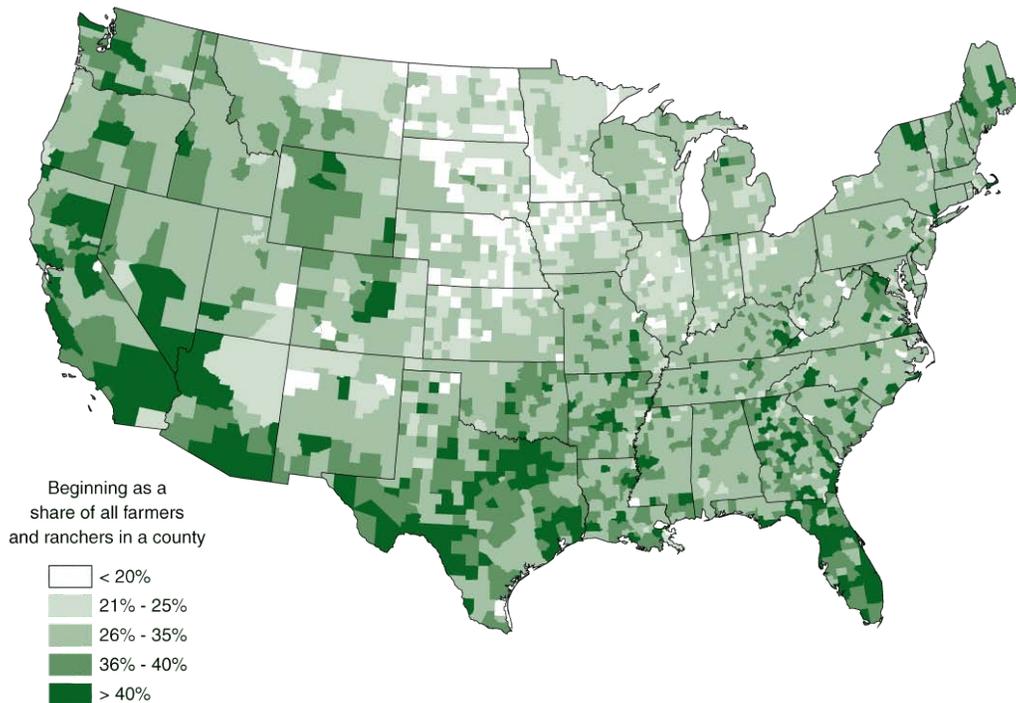
The USDA defines a beginning farmer or rancher as an operator with less than 10 years of experience operating a farm or ranch as either the sole operator or with others who have operated a farm or ranch for less than 10 years (Ahearn and Newton 2009). Additionally, less-experienced farmers were identified as those with less than 10 years experience on established farms with operators with greater than 10 years of experience. Table 3.11-5 illustrates the number of beginning farmers identified in the Agricultural Resource Management Survey (ARMS) 2007 data. Figure 3.11-6 illustrates the share of beginning farmers by county in the U.S. in 2007. Ahearn and Newton (2009) found that approximately 32 percent of beginning farms reported no production in comparison to the 20 percent of established farms that had no reported production. Beginning farms tend to be smaller, participate less in Government programs, and have lower net worth, while having a greater percentage of ownership and a higher debt load than established farms.

Table 3.11-5. Beginning Farmer Information, ARMS 2007 Data

Category	Value
Number of Beginning Farms	449,506
Percent of Farms Designated as Beginning	22
Percent of Total Value of Production on Beginning Farms	10
Number of Beginning Farmers on Beginning Farms	650,318
Number of Less-Experienced Farmers on Established Farms	101,253
Average Size of Beginning Farms (acres)	174
Percent Participation in Any Government Farm Programs – Beginning Farms	25
Percent Participation in Any Government Farm Programs – Established Farms	42
Percent Participation in Conservation Programs – Beginning Farm	13
Percent Participation in Conservation Programs – Established Farm	17
Percent Enrollment in CRP – Beginning Farm	12
Percent Enrollment in CRP – Established Farm	15
Average All Government Program Payments (\$) – Beginning Farm	1,353
Average All Government Program Payments (\$) – Established Farm	4,772
Average Conservation Program Payments (\$) – Beginning Farm	593
Average Conservation Program Payments (\$) – Established Farm	1,081

Source: Ahearn and Newton 2009.

The share of beginning farmers varies by county



Source: ERS tabulations based on the 2007 Census of Agriculture (USDA, NASS).

Figure 3.11-6. Share of Beginning Farmers by County (Ahearn and Newton 2009)

Farm Income

The average farm household income in 2007 was \$88,912 (NASS 2009d). This is substantially higher than the average for all U.S. households, \$67,358. The breakdown of income for the average farm household in 2007 includes: farm income, 12.0 percent; wages and salaries, 53.8 percent; off-farm business, 10.2 percent; unearned income, 24.1 percent (*Ibid*). Table 3.11-6 illustrates the farm household income by region for selected farm type categories by region.

In 2007, approximately 86 percent of the average household farm income was generated from off-farm income (NASS 2009d). This number stayed relatively stable from 2002 to 2007, with an average household farm income generated from off-farm income of approximately 88 percent over the five year period (*Ibid*). Off-farm income is produced from sources such as wages and salaries from off-farm employment; the profits of off-farm businesses; or unearned income such as interest, dividends, insurance or annuity payments. The proportion of farm income derived from various sources depends on the size and type of farm. Generally, as farm income and average household income increase, the proportion of income derived from off-farm sources decreases.

Table 3.11-6. 2007 Farm Household Income by Region and Category

Parameter	Region					
	Atlantic	South	Midwest	Plains	West	All Farms
Retirement						
Number of Farm Households	85,220	59,807	119,894	81,065	57,842	403,828
Average Per Farm Total Household Income (\$)	46,471	44,722	61,115	48,689	75,957	55,228
Percent Household Income from Off Farm Sources	113	107	100	105	97	104
Average Per Farm Total Household as a Percentage of Average U.S. Household Income	69	66	90	72	112	82
Percent of Farm Households with Negative Total Household Income	4	11	4	4	4	5
Residential/Lifestyle						
Number of Farm Households	221,603	136,740	266,860	238,164	126,462	989,830
Average Per Farm Total Household Income (\$)	96,864	102,267	83,200	124,870	104,782	101,677
Percent Household Income from Off Farm Sources	104	106	105	107	108	106
Average Per Farm Total Household as a Percentage of Average U.S. Household Income	143	151	123	185	155	150
Percent of Farm Households with Negative Total Household Income	1	4	2	4	2	3
Farming Occupation - Lower Sales						
Number of Farm Households	91,818	54,925	107,118	102,500	78,241	434,599
Average Per Farm Total Household Income (\$)	42,738	53,174	44,602	39,713	46,546	44,488
Percent Household Income from Off Farm Sources	116	113	103	111	117	111
Average Per Farm Total Household as a Percentage of Average U.S. Household Income	63	79	66	59	69	66
Percent of Farm Households with Negative Total Household Income	13	15	9	14	19	13
Farming Occupation - Higher Sales						
Number of Farm Households	16,844	6,483	45,722	25,818	16,522	111,389
Average Per Farm Total Household Income (\$)	59,905	134,426	71,994	66,908	96,063	76,191
Percent Household Income from Off Farm Sources	54	87	58	75	48	62
Average Per Farm Total Household as a Percentage of Average U.S. Household Income	89	199	106	99	142	113
Percent of Farm Households with Negative Total Household Income	11	25	9	20	14	14
Large Farms						
Number of Farm Households	12,374	7,319	39,192	22,547	12,170	93,601
Average Per Farm Total Household Income (\$)	90,698	79,184	114,132	105,799	139,862	109,639
Percent Household Income from Off Farm Sources	33	58	36	54	45	43
Average Per Farm Total Household as a Percentage of Average U.S. Household Income	134	117	169	156	207	162
Percent of Farm Households with Negative Total Household Income	13	21	8	21	9	13

Table 3.11-6. 2007 Farm Household Income by Region and Category
(cont'd)

Parameter	Region					
	Atlantic	South	Midwest	Plains	West	All Farms
Very Large Farms						
Number of Farm Households	14,779	16,813	38,860	23,888	15,812	110,152
Average Per Farm Total Household Income (\$)	206,089	181,528	229,239	281,967	493,546	268,227
Percent Household Income from Off Farm Sources	22	24	15	16	10	16
Average Per Farm Total Household as a Percentage of Average U.S. Household Income	305	269	339	417	730	397
Percent of Farm Households with Negative Total Household Income	10	16	10	19	19	14

Note: Household income can be negative if the loss from farming is larger than income from off-farm sources. Alternatively, farming and off-farm activities may both result in a loss, or off-farm activities may result in a loss that is larger than farm earning (NASS 2009d).

Source: NASS 2009d

Federal Farm Subsidy Payments

Government payments in the form of subsidies represent another form of income to U.S. farms and farm households. According to the 2007 Census of Agriculture, approximately 38 percent of all farms received government payments (NASS 2009a, c). Government payments totaled 10.7 percent of the total farm household income for the year. When ARMS data from 2007 is analyzed, the average characteristics of government payment to farms can be estimated. Table 3.11-7 illustrates, by farm typology the average government payment for those farms receiving government payments and then each government program's contribution to that average payment. Government payment dollars are concentrated on larger sale family farms (farming occupation/higher sales, large farms, and very large farms; 65.0 percent of government payments), while the percentage of farms receiving payments is concentrated on small, lower sale family farms (70.2 percent of farms receiving payments).

Across all farms receiving government payments, direct payments accounted for an average of 49.1 percent of the total government payments, followed by conservation program payments at 23.5 percent; however, the average masks the propensity for smaller farms to have a greater percentage of payments from conservation program activities than from other type of government payments. For example, retirement farms conservation payments account for 72.7 percent of the total payment with direct payments attributing only 10.2 percent. Figure 3.11-7 illustrates the average CRP payment per farm across the U.S.

Table 3.11-7. 2007 Average Government Payment to Those Farms that Receive Government Payments

Item	Farm Category							
	All	Retirement	Residential /lifestyle	Farming occupation / lower-sales	Farming occupation / higher-sales	Large	Very large	Nonfamily
Percent of All Farms Receiving Government Payments	100.0	18.1	31.4	20.7	11.6	8.7	6.8	2.7
Percent of All Farms by Typology	40.3	39.4	27.6	42.4	77.2	81.1	72.5	58.7
Percent of Government Payments	100.0	8.7	11.3	9.6	11.7	18.5	34.8	5.4
Average government payments	\$9,792.23	\$4,716.73	\$3,532.22	\$4,539.69	\$9,867.25	\$20,773.76	\$50,117.28	\$19,520.21
Direct payments	\$4,810.50	\$479.30	\$1,104.90	\$1,664.29	\$5,730.95	\$12,087.53	\$30,538.47	\$8,775.77
Counter-cyclical payments	\$1,225.02	\$231.12	\$231.26	\$301.25	\$793.72	\$2,386.48	\$9,230.06	\$4,467.07
Loan deficiency payments	\$100.55	----*	----*	\$64.35	\$21.06	\$253.66	\$771.17	\$238.62
Milk income loss contract payments	\$86.65	----*	----*	\$33.82	\$113.37	\$307.29	\$504.22	\$161.05
Disaster and emergency assistance payments	\$432.52	\$116.11	\$83.06	\$260.80	\$543.48	\$1,094.79	\$1,916.36	\$1,585.83
Conservation Program payments	\$2,304.83	\$3,427.98	\$1,702.91	\$1,745.08	\$1,432.38	\$2,922.64	\$3,990.44	\$3,590.27
Tobacco Transition Program payments	\$354.03	\$126.06	\$320.30	\$252.80	\$307.01	\$746.10	\$1,068.02	\$186.45
Other Federal program payments	\$256.35	\$55.45	\$41.51	\$104.71	\$521.27	\$640.92	\$1,222.63	\$449.03
State and local program payments	\$221.80	\$257.61	\$46.07	\$112.61	\$404.04	\$334.36	\$875.91	\$66.11

Note: ----* = could not be disclosed for privacy purposes

Source: NASS 2009d

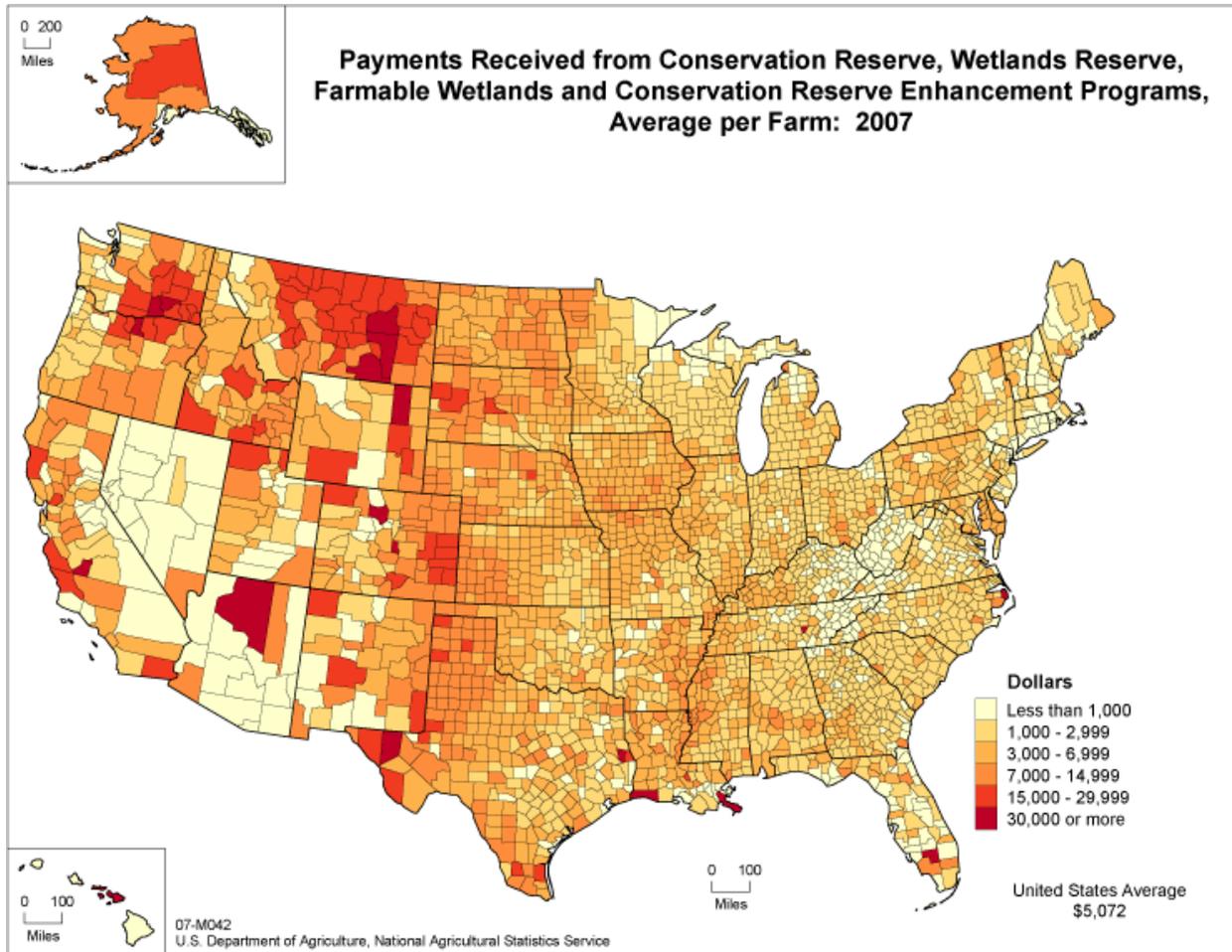
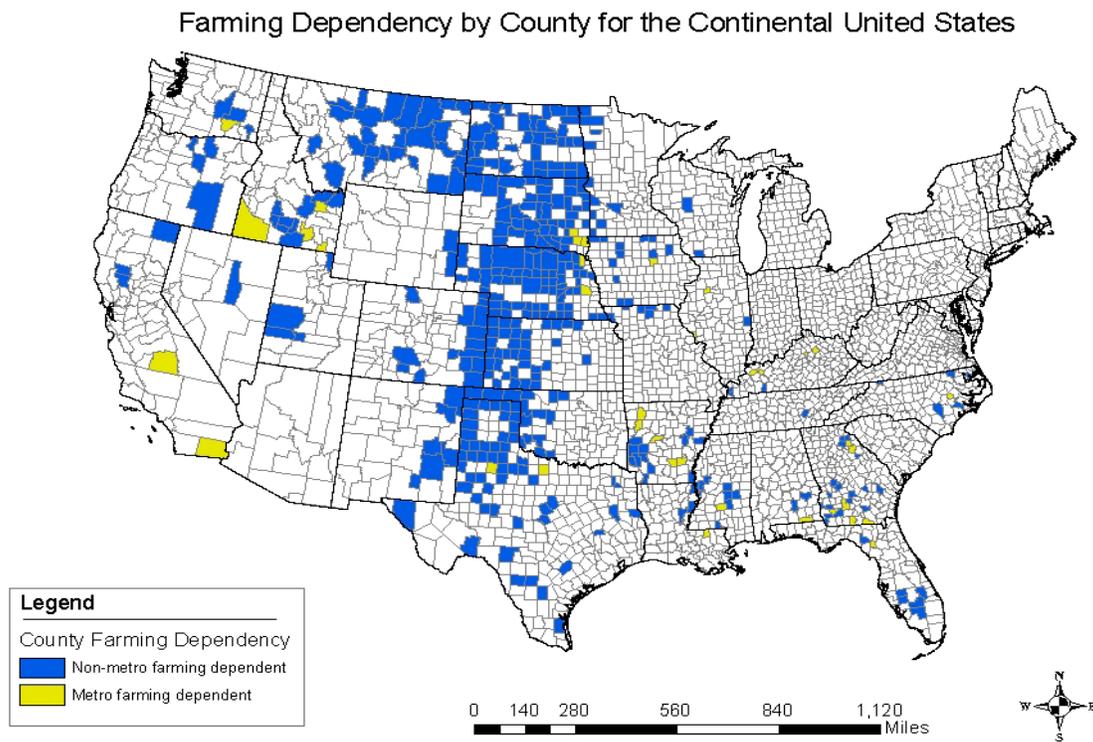


Figure 3.11-7. CRP Payments Average per Farm across the U.S. (NASS 2009a, c)

3.11.2.2 Characteristics of Agricultural Communities

Farming Dependency

Of the 1,090 non-metropolitan counties in the United States, ERS typology identified 404 which were farming-dependent, where either 15 percent or more of average annual labor and proprietors' earnings were derived from farming during 1998-2000 or 15 percent or more of employed residents worked in farm occupations in 2000 (Parker 2005). Figure 3.11-8 illustrates the farming dependent counties in the U.S. by non-metropolitan and metropolitan areas. The number of farming dependent non-metropolitan counties has declined by approximately 27 percent.



Source: USDA Economic Research Service 2004 County Typology released in 2009

Figure 3.11-8. Farming Dependent Counties in the U.S., 2005 (NASS 2009a, c)

Farms, Total Land in Farms, and Farm Size

Nationally, the total number of farms has decreased by 0.5 percent over the previous decade, from 2,215,876 in 1997 to 2,204,792 in 2007 (NASS 2009a, c). This decline slowed in the latter half of the decade which the number actually increased. The total land in farms has also decreased from 954 million in 1997 to 922 million acres in 2007. This was a steady decline of 3.4 percent from 1997 to 2007. The average farm size has decreased from 431 acres in 1997 to 418 acres in 2007, approximately 3.0 percent. Figure 3.11-9 provides an illustration of the average farm size by county in the U.S. based on the 2007 Agricultural Census.

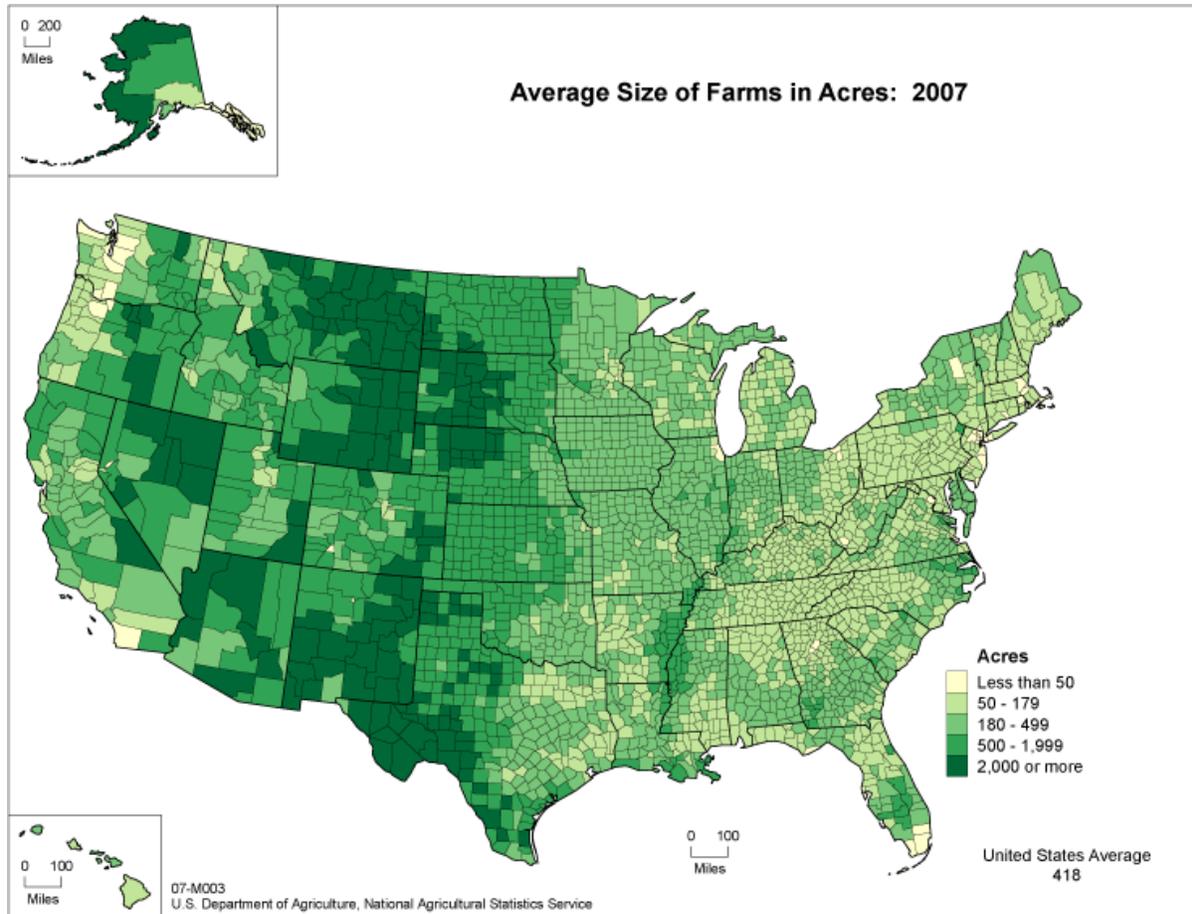


Figure 3.11-9. Average Farm Size by County in the U.S., 2007 (NASS 2009a, c)

Table 3.11-8, illustrates the general land use for land in farms as described in the 2007 Agricultural Census. In 2007, land in farms was comprised of 44.1 percent cropland; 8.1 percent woodland; 44.3 percent permanent pasture or rangeland; and 3.4 percent farmsteads, livestock facilities, and other non-production lands. In Table 3.11-8, total pastureland includes all pastureland even those acres that are considered cropland and woodland, being pastured.

3.11.2.3 Rural Economy and CRP

Employment in the Agricultural Sector of the Economy

Farm employment in the U.S. decreased from approximately 3.1 million positions in 2001 to approximately 2.8 million in 2007 (Bureau of Economic Analysis [BEA] 2009a). Table 3.11-9 illustrates the farm and non-farm employment from 2001 to 2007. Although this is based on a national level, all of the USDA Regions also exhibited a decline in farm employment. The West region showed the greatest decline in farm employment with 10.5 percent, followed by the Atlantic region at 9.4 percent decline. Non-farm employment positions increased by 8.6 percent in the U.S. All of the USDA Regions also saw an increase in non-farm employment; the South achieved the greatest increase at 12.8, followed by the Plains and the West. The smallest increase in non-farm employment was in the Mid West.

Table 3.11-8. Land Use for Land in Farms, 2007

Region	Farms (Number)	2007 Acres						
		Land in Farms	Total Cropland	Total Woodland	Total Pastureland	Farmsteads, buildings, livestock facilities, ponds, roads, wasteland, etc	Land enrolled in CRP, WRP, FWP, CREP	Land enrolled in crop insurance programs
Atlantic	446,788	67,562,671	35,499,736	16,768,606	19,440,048	3,655,205	1,392,720	10,402,990
Midwest	629,809	167,419,543	129,846,960	15,509,223	23,373,948	7,894,847	8,264,645	77,966,725
Plains	510,384	340,653,196	142,998,382	11,263,441	200,610,409	8,463,559	15,031,695	87,897,915
South	291,340	66,744,063	31,380,075	18,284,436	21,324,786	4,061,271	3,389,309	14,197,659
West	318,264	277,713,453	66,435,892	13,152,158	206,636,977	7,523,036	10,438,043	31,754,983
Forty eight Contiguous States	2,196,585	920,092,926	406,161,045	74,977,864	471,386,168	31,597,918	38,516,412	222,220,272
United States	2,204,792	922,095,840	406,424,909	75,098,603	473,212,960	31,740,212	38,547,450	222,267,817

Source: NASS 2009a, c

Table 3.11-9. Farm and Non-Farm Employment Change 2001 to 2007 by Production Region

Region	2001 Total Employment Positions	2007 Total Employment Positions	Change by Regions (%)	Average Change by Year (%)
Farm Employment				
West	642,925	575,650	-10.5	-0.90
Plains	610,641	577,891	-5.4	-0.59
South	399,887	372,903	-6.7	-1.28
Mid West	775,986	746,522	-3.8	-0.11
Atlantic	613,550	555,724	-9.4	-1.80
Non-Farm Employment				
West	35,914,143	40,116,006	11.7	2.3
Plains	17,701,202	19,891,686	12.4	1.4
South	23,655,620	26,684,248	12.8	1.6
Mid West	34,685,124	35,729,960	3.0	0.8
Atlantic	50,086,889	53,561,288	6.9	1.1

Source: BEA 2009b.

Invasive Species

In 1999, President Clinton signed into effect EO 13112 – Invasive Species, “to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.” Over the past 200 years, more than 50,000 non-native plant and animal species have become established in the U.S. About one in seven non-native species have become invasive with damages and control costs estimated to be more than \$138 billion each year in the U.S. (Pimentel *et al.* 1999); however, a majority of commercially important species in the U.S., such as crops, are non-native species that have not become invasive under normal agricultural production activities.

Invasive species cause threats to the ecosystems, natural diversity, and wildlife. The introduction of invasive species to an environment is argued to be the second most important cause of biodiversity loss worldwide (Horan *et al.* 2002). Without the presence of their natural predators, invasive species have little to control their population growth, which in turn causes the loss of native species diversity to an area. Impacts of invasive species to the landscape include the spread of the disease, reduced wildlife habitat quality, and reduce soil stabilization. According to a study done by North Dakota State University the leafy spurge (*Euphorbia esula*) (an invasive species to North Dakota, South Dakota, Montana and Wyoming) reduces soil and water conservation benefits by increasing erosion and water run-off (Bangsund and Leistritz 2003). Also, the salt cedar (*Tamarix ramossima*) found in southwestern U.S. consumes more water than the native riparian species (Pejchar and Mooney 2009). These invasive species along with thousands of others are causing significant ecological losses throughout the U.S.

After the Asian longhorn beetles was first discovered in Chicago and New York in the 1990’s, the state and local governments invested more than \$30 million to eradicate the non-native species and to protect 6.7 million trees in region (Evans 2003). Invasive species can increase flood risk by narrowing stream channels and decreasing holding capacity. Florida estimates that it spends \$10 million annually to avoid floods by removing aquatic invasive species from lakes and waterways (Pejchar and Mooney 2009).

There are also considerable effects on agriculture associated with invasive species. Many invasive species will be avoided by livestock. In California, the yellow star thistle (*Centaurea solstitialis*) is unpalatable to cows and has cost the state \$7.65 million annually in lost livestock forage (Pejchar and Mooney 2009). Invasive species also affect the rangeland diversity. In North Dakota, cattle will not eat leafy spurge; as a result large areas have been lost to grazing operations. The average impact cost is \$105 per acre of leafy spurge on rangeland (Bangsund and Leistritz 2003). These invasive species have caused the reduction of agricultural production in the U.S., resulting in the loss of capital.

These numbers are the direct costs that have been spent on invasive species control, maintenance, and mitigation. It is also important to take into account the environmental service flows such as shifts in consumer’s demands, changes in agricultural employment and income, revenue and economic output that are also impacted by invasive species. There are also trades barriers created to reduce the spread of invasive species that can increase social costs, prevented commercial opportunities, and reduce competition and economic growth (Evans

2003). All of these indirect economic impacts should be considered when evaluating the total costs of invasive species.

Pollinators

Insect orders that are pollinators include Hymenoptera (bees, wasps), Coleoptera (beetles), Diptera (flies), and Lepidoptera (moths, butterflies). Recorded mammalian pollinators include bats and some opossums in more tropical regions and avian pollinators include hummingbirds (National Research Council [NRC] 2007). Honey bees (*Apis mellifera*) are the most preferred species of insect pollinators due to their extended range (14 km from nest), sophisticated communication, and floral constancy, all of which aid higher productivity. What contributes to the economic importance of honey bees is that apiculture is a disciplined practice with domestic bee-keeping (*Apis mellifera*) equipment widely available. Though sustainable populations can be managed by humans, the honey bees have seen a significant decline in the last half century (*ibid*).

Direct and indirect threats to insect pollinator populations include habitat degradation and pesticide use. Habitat degradation is primarily caused by the introduction of invasive species, which disturb native habitat regimes and choke native flower plant populations, and land management practices which lean toward a more homogenized landscape with little debris for nesting, lower plant diversity, and mowed grassland areas, thus limiting wild, flowering plant species. Because of the degradation, the habitat areas remain at the earliest stages of succession instead of becoming transition areas (Shepard *et al.* 2003).

The NRC (2007) reported that the economic impacts of pollinator declines can be difficult to assess due to limited data outside the realm of honey bees. Wild pollinator species serve many different pollinating functions, but the diversity lends to the complexity of direct and indirect consequences. Major crops in the U.S. that require pollination include apples (\$1.8 billion value of production), cultivated blueberries (\$0.2 billion), wild blueberries (\$0.03 billion), cranberries (\$0.2 billion), sweet cherries (\$0.3 billion), fresh cucumbers (\$0.2 billion), cantaloupes (\$0.4 billion), watermelons (\$0.3 billion), almonds (\$1.6 billion), peaches (\$0.5 billion), pears (\$0.3 billion) and all squash (\$0.2 billion). Gallai, *et al.* (2008) calculated that 39 percent of the world production value of food used for human consumption was dependent on insect pollinators (approximately €625 billion [\$908.3 billion]). In North America, the total economic production value of crops was estimated to be €125.7 billion (\$182.7 billion) with an insect pollination economic value of €14.4 billion (\$20.9 billion) with a rate of vulnerability of approximately 11 percent (Gallai *et al.* 2008).

Agricultural areas that have been enrolled in CRP and allowed to naturalize generally create larger, more expansive habitat areas for pollinators to nest and propagate while remaining within areas of agricultural dependence. This allows for successful pollinator populations to emerge outside CRP acreage to other croplands where disturbances are more frequent, as are encounters with pesticides, herbicides, and insecticides.

3.11.2.4 Agricultural Services Sector and CRP

Total farms in the U.S. with production expenses have increased approximately 3.6 percent from 2002 to 2007 (NASS 2009a, c), while lands in conservation programs have increased 17.8

percent over that period (Table 3.11-10). Production expenditures for agricultural practices have continued to increase over the entire length of the CRP. It has been indicated that much of the rise in production expenses during the period can be traced to the rise in commodity prices between 2002 and 2007, particularly corn and soybeans, which are used primarily as feed grains. Land rents and fertilizers prices also rose with commodity price increases. The Western states had the highest average production expenses per farm in both 2002 and 2007. The Midwest states saw the greatest percentage increase in average farm production expenses from 2002 to 2007.

Table 3.11-10. Farm Production Expenses and Acres of CRP, WRP, FWP, and CREP

Region	Total Farms	Total Production Expenses (\$000s)	Average Per Farm	Acres of CRP, WRP, FWP, & CREP
Atlantic	446,788	\$31,970,871	\$71,557	1,392,720
Midwest	629,809	\$64,220,487	\$101,968	8,264,645
Plains	510,384	\$58,365,368	\$114,356	15,031,695
South	291,340	\$30,222,022	\$103,735	3,389,309
West	318,264	\$55,797,722	\$175,319	10,438,043
United States	2,204,792	\$241,113,666	\$109,359	38,547,450
2002				
Atlantic	444,583	\$23,141,419	\$52,052	1,434,663
Midwest	619,685	\$44,606,979	\$71,983	7,233,727
Plains	488,204	\$41,315,001	\$84,627	12,525,528
South	280,087	\$20,763,643	\$74,133	2,485,282
West	290,133	\$42,882,109	\$147,802	9,015,349
United States	2,128,739	\$173,199,216	\$81,362	32,723,967
Atlantic	0.5%	38.2%	37.5%	-2.9%
Midwest	1.6%	44.0%	41.7%	14.3%
Plains	4.5%	41.3%	35.1%	20.0%
South	4.0%	45.6%	39.9%	36.4%
West	9.7%	30.1%	18.6%	15.8%
United States	3.6%	39.2%	34.4%	17.8%

Source: NASS 2009a, c

The labor categories accounted for approximately 12.7 percent of total farm production expenses at the national level in 2007 (Table 3.11-11). In the Atlantic states and the Western states, labor categories accounted for approximately 17.8 percent and 17.9 percent, respectively. In all regions, except the Plains states, feed purchased was the single greatest contributor to farm production expenses. If the labor expenses are analyzed, it can be seen that across all labor categories, the number of farms using paid labor or custom work declined from 2002 to 2007 (Table 3.11-12).

Table 3.11-11. Percent of Total Farm Production Expenses

Region	FLSC	Chemicals	SPVT	LP	Feed	GFO	Utilities	SRM	HFL	CL	CCH	LBG	MEV	Interest	PTP	All Other
Atlantic	5.1	2.6	5.0	7.7	22.6	5.7	2.7	8.6	15.2	1.5	1.3	2.7	0.5	4.2	4.8	9.9
Midwest	11.1	5.0	7.5	10.3	17.0	5.9	2.0	7.2	7.0	0.5	1.5	8.8	0.6	5.8	3.1	6.8
Plains	8.5	4.3	4.8	26.1	16.3	6.0	1.8	6.2	4.2	0.6	1.7	6.5	0.5	4.7	2.4	5.4
South	7.0	5.1	4.4	10.6	29.8	5.6	2.2	6.2	8.5	2.1	1.3	3.4	0.6	3.4	1.8	7.9
West	5.4	3.4	3.2	12.6	20.2	5.9	3.8	7.5	13.7	2.1	2.1	4.6	0.7	4.9	2.5	7.5
United States	7.5	4.2	4.9	15.8	20.4	5.4	2.5	6.6	9.1	1.9	1.7	5.5	0.6	4.5	2.6	7.1

Source: NASS 2009a, c

Note

FLSC: Fertilize, lime, soil conditioners

SPVT: Seeds, plants, vines, and trees

LP: Livestock and poultry

GFO: Gasoline, fuels, oils

SRM: Supplies, repairs, and maintenance

HFL: Hired farm labor

CL: Contract labor

CCH: Custom work and custom hauling (labor)

LBG: Land, buildings, and grazing fees

MEV: Machinery, equipment, and vehicles

PTP: Property taxes paid

Table 3.11-12. Labor and Custom work Expenses¹

Region	Contract Labor		Custom work/Hauling		Hired Labor	
	Total Farms	Expenses	Total Farms	Expenses	Total Farms	Expenses
2007						
Atlantic	30,108	424,130	56,243	375,176	94,708	3,560,457
Midwest	31,144	287,525	132,090	957,047	131,757	3,947,746
Plains	49,713	371,855	92,749	915,217	107,293	2,601,722
South	24,771	757,162	29,593	418,058	59,141	2,625,508
West	45,903	2,657,416	51,359	1,423,390	87,284	8,947,273
United States	182,701	4,514,166	362,475	4,091,038	482,186	21,877,661
2002						
Atlantic	40,256	312,860	72,299	313,017	113,138	2,942,878
Midwest	39,451	231,218	161,308	740,800	155,071	3,226,963
Plains	62,211	293,726	113,543	658,677	120,516	2,186,973
South	32,278	587,350	39,011	423,883	67,010	2,443,273
West	53,577	2,017,952	63,125	1,167,977	96,932	7,577,238
United States	228,692	3,451,190	449,633	3,313,737	554,434	18,568,446
Percent Change						
Atlantic	-25.2%	35.6%	-22.2%	19.9%	-16.3%	21.0%
Midwest	-21.1%	24.4%	-18.1%	29.2%	-15.0%	22.3%
Plains	-20.1%	26.6%	-18.3%	38.9%	-11.0%	19.0%
South	-23.3%	28.9%	-24.1%	-1.4%	-11.7%	7.5%
West	-14.3%	31.7%	-18.6%	21.9%	-10.0%	18.1%
United States	-20.1%	30.8%	-19.4%	23.5%	-13.0%	17.8%

Source: NASS 2009a, c

¹ Expenses are in thousands (\$000s)

In general, the Atlantic Region experienced the greatest percentage declines across all labor categories, though the Atlantic Region accounted for only 14.3 percent of the total farm labor expenses in the U.S. The West Region showed the least decline in two of the three labor categories, though each was still 10.0 percent or greater. The West Region accounted for approximately 42.7 percent of the total labor expenses in the U.S.

3.11.2.5 CRP and Land Allocation

Incentives to Enroll in CRP

The first step in evaluating socioeconomic implications of CRP involves consideration of how USDA elicits conservation proposals from farmers, decides which proposals to accept, how much to pay participating farmers, and the terms of contracts between USDA and farmers and landowners, including the amounts they compensated, length of the contract, how conservation activities are verified, and penalties for violation of terms. These incentives influence which landowners and which lands are ultimately enrolled, the cover practices on enrolled land, and which farmers and landowners gain financially from the program and how much they gain. They also influence the government expenditures associated with the program. Taken together, these details influence how well these programs achieve environmental goals and the distribution of benefits across farmers, landowners and to society as a whole (see review article by Latacz-Lohman and Schilizzi, 2005).

(a) General signups:

A landowner will choose to offer a parcel of land for enrollment in CRP if it qualifies for enrollment and CRP meets the landowner's management objectives and the maximum rental rate exceeds the landowner's opportunity costs of the land, including transactions costs of submitting an offer. Offers are ranked by FSA based on an EBI that includes environmental and cost components. The environmental components are tied to erosion reduction, water quality, air quality, and the associated wildlife benefits. The cost component depends on rent requested and whether or not the landowner requests the Farm Service Agency to share costs of establishing the proposed cover practice. The EBI will decline as the requested rent grows and if the landowner requests cost sharing. Rents requested are constrained by a maximum equal to the soil-specific rental rate, which is based on an estimate of the average dryland rental rate in the county, adjusted for soil-specific productivity of soils on the offered parcel.

Maximum rental rates have several effects on CRP. Most obviously the caps limit how much any individual landowner might gain from the program. But the caps may also inhibit the extent to which CRP achieves environmental goals in a cost-effective manner, because owners of land with high-EBI parcels will not submit bids if they normally earn more than the cap from their usual farming activities. The caps can also limit EBI-improving cover practices on parcels offered and accepted into the program (Kirwan *et al.* 2005). This happens because some landowners requesting the maximum rate may be nearly certain of their acceptance even without an EBI-improving cover practice. If there were no rent cap, the landowner could compensate a more costly, EBI-enhancing cover practice with a higher requested rent. By limiting participation in CRP, maximum rental rates (similar to possible county-level acreage

caps) may also limit the extent to which CRP affects the supply of land offered for CRP enrollment, limiting possible distortion of land rental markets.

The incentive effects of rent caps in the CRP might be especially strong because caps are nominally set at a rate *equal to* the market rate for the land. The approximation of the market rent is likely imperfect, so some eligible parcels have market rental rates above the cap while other parcels have market rates below the cap. It is important to note that this national program is implemented at the local (county) level based on EBI scores and county-established average market rental rates. That is, enrollment is based on relative values measured against local competition, not comparison with national norms. As a result, in a county with a market rate of \$20 per acre, a parcel of land with a high EBI score and a market rate of \$21 per-acre will likely not make an offer and is effectively excluded from CRP, while in a different county with a market rate of \$95 per acre, a parcel of land with a lower EBI score and a market rate of \$90, per acre might be enrolled. While this particular scenario is fictional, the scenario is not implausible.

(b) Targeted signups (CREP and continuous)

Enrollment in CREP and continuous signups does not involve competitive bidding. Different from the auction-like general signups, in these signups owners of specifically targeted lands are offered rental rates that normally exceed the soil-specific rental rate used in general signups (typically by 20 percent, sometimes much greater under CREP). Depending on the accuracy of the soil-specific rates in comparison to landowners' opportunity costs, the premiums are likely high enough to entice targeted landowners to enroll. The take-it-or-leave-it enrollment mechanism for enrolling CREP and continuous signups are more cost effective from the vantage point of government expenditures, and less potentially profitable to participants, if parcel-specific appraisals are accurate. The more accurate the appraisal of the sellers' opportunity costs, the smaller the premium above the soil-specific rate need be for targeted landowners to choose to enroll. As uncertainty about farmers' opportunity costs rise, the greater premiums above soil-specific rental rates need be to elicit full participation.

(c) Other factors affecting participation

Lambert *et al.* (2006) found that conservation compatible practices require a large investment of time and money to successfully achieve. This finding indicates why larger scale farming operations are successfully entering into working lands programs in addition to land retirement programs such as CRP. Lambert *et al.* (2006) found that land retirement programs were primarily used on retired and residential/lifestyle farms where farming was not the primary occupation; however, small farms, though not the primary producers of commodities, still control large portions of agricultural land. Partial farm participants of CRP were likely to use the program to diversify their income stream, while actively farming other parts of their lands. They found that approximately half of all CRP participants still produce commodities. These participants are more likely to take part in working lands programs with cost share to defray some of the initial costs associated with altered farming practices.

Lambert *et al.* (2006) indicates that the decision to place whole fields into conservation practices could be partially dependent on (1) having marginal lands that cannot be profitably farmed as a going concern; (2) owning pasture(s) not intended for crop production; (3) or having a goal other than maximizing crop yields. Some of these other goals could be (1) operator age with an

inclination toward retirement and a stable additional source of income (e.g., CRP annual rental rate income with reduced risk); (2) diversification opportunities on those lands to be enrolled in CRP, such as hunting leases or other environmentally related aspect (e.g., wind farms), or (3) outside interests, which reduce the time available for crop production (e.g., off-farm primary employment).

Other factors affecting enrollment decisions and offered rents are the length of contract combined with uncertainty about future returns from farming. CRP contracts typically last for 10-15 years. Some landowners may prefer the constant stream of revenue over the uncertain stream of returns that might be earned from farming. But the long-term contract also implies landowners give up an option to farm in the event commodity prices rise sharply and land rents increase. Since CRP soil-specific rental rates are tied to current rents, and are not adjusted mid-contract for changes in rents over time, some landowners may choose not to enroll for fear of losing greater profit opportunities in the long run (Schatzki 2003).

Cropland Acreage

According to the 2007 Agricultural Census there were 406.4 million acres of total cropland with approximately 76.2 percent of that being harvested (309.6 million acres). In 2002, the amount of total cropland in the U.S. was 434.2 million, illustrating a 6.4 percent decline from 2002 to 2007. During the period, as a result of an increase in the statutory maximum acreage for CRP in the 2002 Farm Bill, land enrolled in conservation practices (CRP, WRP, FWP, and CREP) increased from 32.7 million in 2002 to 36.8 million, an increase of 17.7 percent.

Table 3.11-13 illustrates the historic land in farms and total cropland in the U.S. from 1964 to 2007 based on the Agricultural Census. Only the 2002 Agricultural Census measured an increase of land in farms from the previous Census, while total cropland increased in 2002, 1978, and 1969.

Historic land in farms is agricultural lands contained with farms and ranches during the period, which may include lands with buildings, homesteads, etc., cropland, pastureland, rangeland, and woodlands. Total cropland as illustrated in Table 3.11-13, includes all land designated as cropland, whether it produced a crop or not during that particular period.

Table 3.11-13. Land in Farms and Total Cropland, 1964-2007

Agricultural Census Year	Total Land in Farms		Total Cropland	
	(millions of acres)	Percent Change	(millions of acres)	Percent Change
2007	922.1	-1.73%	406.4	-6.40%
2002	938.3	0.70%	434.2	0.72%
1997	931.8	-1.45%	431.1	-0.99%
1992	945.5	-1.97%	435.4	-1.78%
1987	964.5	-2.26%	443.3	-0.47%
1982	986.8	-2.76%	445.4	-1.87%
1978	1,014.8	-0.22%	453.9	3.16%
1974	1,017.0	-4.32%	440.0	-4.14%
1969	1,062.9	-4.26%	459.0	5.71%
1964	1,110.2		434.2	

Source: NASS 2009a, c

Table 3.11-14 illustrates a comparison of cropland planted acres by region and period and the number of acres enrolled in CRP during that period. Table 3.11-14 illustrates the average area of CRP and planted cropland in the U.S. from 1985 to 2007, averaged by decade by region.

Table 3.11-14. Planted Cropland and CRP Acreage, 1985 to 2007

Region	1985	1986-1989		1990-1999		2000-2007	
	Cropland Planted	Avg. CRP	Avg. Cropland	Avg. CRP	Avg. Cropland	Avg. CRP	Avg. Cropland
Atlantic	33,106,000	719,638	29,720,000	1,169,578	33,435,400	1,081,405	28,687,625
Midwest	126,333,000	4,076,234	118,575,500	7,551,237	118,928,600	7,583,266	118,749,250
Plains	110,366,000	6,623,006	101,918,250	13,762,232	113,098,100	13,830,244	114,399,000
South	31,612,000	1,397,612	26,924,000	2,566,807	26,795,900	2,405,240	24,691,250
West	40,721,000	4,671,992	37,054,750	8,123,836	37,549,500	9,505,978	35,413,250
United States	342,224,000	17,505,879	314,276,750	33,199,596	326,105,900	34,435,806	322,824,000

Source: NASS No Date, FSA 2008c

Haying and Grazing Acreage

On average from 2004 to 2008, approximately 0.8 million acres of applicable CRP CPs were hayed under a managed haying contract; 0.3 million acres were grazed under a managed grazing contract; 0.3 million acres were used for emergency hay; and 0.3 million acres were used for emergency grazing (Table 3.11-15). As of 31 August 2009, there were approximately 23.0 million acres enrolled in CPs 1, 2, 4, and 10. Based on the 1.7 million acres per year average managed and emergency haying and grazing activities, those activities occurred on approximately 7.0 percent of the applicable CPs.

Table 3.11-15. Haying and Grazing Activities Occurring on CRP acreage, 2004 - 2008

	2004	2005	2006	2007	2008
Total CRP Contracts	531,270	523,739	607,317	677,944	739,160
Total CRP Acres	34,707,287.0	34,902,300.0	36,003,300.0	36,770,984.0	33,573,342.0
Managed Haying Contracts	17,659	13,164	12,086	18,757	18,998
Managed Haying Acres	1,037,591.9	612,118.7	511,898.8	930,995.3	871,899.5
Percent of CRP Acres	2.99%	1.75%	1.42%	2.53%	2.60%
Managed Grazing Contracts	3,952	2,772	3,879	3,012	1,672
Managed Grazing Acres	382,447.1	256,187.7	304,038.7	207,639.4	146,059.4
Percent of CRP Acres	1.10%	0.73%	0.84%	0.56%	0.44%
Emergency Haying Contracts	1,985	863	17,108	1,819	5,078
Emergency Haying Acres	135,946.4	15,717.1	875,404.3	49,794.3	249,655.6
Percent of CRP Acres	0.39%	0.05%	2.43%	0.14%	0.74%
Emergency Grazing Contracts	1,641	142	7,209	882	2,492
Emergency Grazing Acres	282,289.8	9,992.4	876,578.5	140,549.6	245,729.4
Percent of CRP Acres	0.81%	0.03%	2.43%	0.38%	0.73%

Source: FSA 2009c

Total land areas potentially available for grazing activities total approximately 786 million acres, composed of 531 million acres of private grazing land and 255 million acres of publicly owned grazing land (NRCS 2007). In comparison, the amount of managed and emergency grazing activities under CRP accounts for only 0.1 percent of private grazing lands and 0.08 percent of total grazing lands.

Using the Mississippi River as the dividing line, the eastern United States was estimated to have approximately 58.5 million acres of private grazing lands. This area had approximately 3,273 acres of managed and emergency grazing activities in 2008 (0.2 percent of total applicable CPs in the region). Managed and emergency grazing acreage accounted for approximately 0.006 percent. In the western U.S., there was approximately 388,516 acres of managed and emergency grazing activity (1.8 percent of the regional applicable CPs acreage of 21.1 million). Grazing lands in the western U.S. are both public (255 million acres) and private (472.9 million acres). The managed and emergency grazing activities took place on only 0.08 percent of private grazing lands and 0.05 percent of the combined total grazing lands available in the western U.S. No individual state had managed and emergency grazing activities totaling approximately 1.0 percent of the total available private grazing land.

The total acreage in managed and emergency haying would account for only 1.9 percent of the total area in hay production in 2008. When the eastern and western U.S. are separately analyzed, the estimated managed and emergency haying acreage would account for approximately 0.2 percent of the total hay acreage of 19.3 million acres east of the Mississippi River and 2.6 percent of the total hay acreage of 40.7 million acres west of the Mississippi River. At the individual state level, Iowa (6.0 percent), Montana (8.4 percent) and North Dakota (12.0 percent) are the states that in 2008 had acreage in managed and emergency haying activities that would account for more than 5.0 percent of their individual total acreage in hay production. Additionally, the restrictions on frequency, length of activity, and harvest timing in relation to the state specific PNS reduced the quality and/or quantity of forage available for either grazing or hay production, which further reduces the overall potential for production from CRP acres.

Targeted Land Retirement Programs

Hansen and Hellerstein (2006) describe targeting for meeting conservation goals as using information on costs, operators, and resource characteristics to choose those that best meet program goals. Further, targeting can be used to meet multiple program goals by establishing a set of selection criteria that rank offers based on rating for each of the multiple goals or offerings. According to Hansen and Hellerstein (2006), targeting using ranking mechanisms requires data and models in which to use that data. CRP enrollment based on targeted goals (e.g., water quality) can result in more cost effective selections. The ERS found that targeting based on EBI, instead of only soil erosion, has benefited society with an additional \$459 million to \$829 million in CRP benefits (Feather *et al.* 1999). Additionally, ERS also found that by targeting based on benefits relative to costs, CRP benefits were 20 to 50 percent higher than only emphasizing soil erosion (Classen *et al.* 2001).

Targeting has been used as a part of the CRP enrollment process since 1990 with the introduction of EBI. Technological advances and greater access to data at multiple levels can

further refine the process to achieve a higher benefit to cost ratio, creating additional environmental benefits from the program at a more cost-effective level. Hansen and Hellerstein (2006) provide three areas where CRP targeting can be refined (1) through a new index formulation that incorporates a benefit to cost ratio along with the environmental components; (2) accounting for variations in biophysical response and public preference across regions and environmental impacts; and (3) more accurate biophysical and socioeconomic information. Hansen and Hellerstein (2006) suggest that local opinions could shift the distribution of CRP acreage into areas with moderate water quality or habitat responses, but closer to a greater population density area, which could result in greater broad-scale environmental response (i.e., a greater number of people would be receiving the benefit).

Cattaneo *et al.* (2006) found that small changes in the EBI would create relatively small changes in benefits and costs derived from the CRP, but the size of the change was dependent upon the parameter changed. It also noted that relatively large changes in the EBI could affect program outcomes. Additionally, Cattaneo *et al.* (2006) determined the elasticities of total cost relative to the average potential benefits. This indicated that for every 1.0 percent change in the average potential benefits there was an increase in costs of 1.4 percent for wildlife, 2.0 percent for water quality, 1.9 percent for erosion reduction, 0.5 percent for enduring benefits, and 1.5 percent for air quality. So a 10 percent increase in the enduring benefits created by CRP would cost an additional five percent, while a 10 percent increase in water quality benefits would cost an additional 20 percent. This could indicate that through further refinement of the CRP targeting mechanism, locally preferred conservation goals could use cost-effective regional strategies to meet the multiple conservation goals associated with CRP; instead of using a broad-scale national adjustment, which could be less cost-effective. Currently, the CRP creates additional CPs under Continuous Sign-Up, Non-CREP and CREPs, as a mechanism to address multiple conservation objectives at state and regional levels.

Indirect Economic Effects of CRP

There can be indirect economic effects from CRP and the way the program is implemented. Indirect effects pertain to the economic consequences incurred by those not participating in the program or affected by government expenditures associated with the program. Indirect effects may be positive or negative, and can influence the economy through a number of different channels. These effects are divided into (a) agricultural market effects, (b) recreation market effects, (c) local economy effects, and (d) environmental effects besides recreation benefits. (d) is covered by other sections of the SEIS.

(a) Agricultural Market Effects

Retirement of cropland causes a reduction in the supply of agricultural crops that were previously cultivated on the land, a rise in the prices of agricultural commodities. This is consistent with one of the goals of CRP, to stabilize commodity prices. Higher commodity prices increase profits and land values of farmers not enrolled in CRP, but cause a slightly larger loss those who buy agricultural commodities. These higher prices may also cause farmers to expand crop production onto land that would not have otherwise been cultivated, a phenomenon called “slippage,” which can offset some of the environmental benefits of CRP. Such expansion of

cropland also mitigates the rise in commodity prices and the associated benefits and costs. In theory, price and slippage effects are tied to the elasticities of supply and demand for cropland.

Evidence of agricultural market effects from CRP is limited and inconclusive. Wu (2000) found evidence of local slippage (not tied to commodity prices) but this evidence of local slippage was shown to be largely spurious (Roberts and Bucholtz, 2005). Earlier studies of aggregate data were inconclusive. There are no estimates of slippage derived from demand and supply elasticities, probably because estimates of supply and demand tend to be localized and extremely imprecise. Recent worldwide demand and supply estimates by Roberts and Schlenker (2009) indicate the supply elasticity (0.10) is about twice that of demand (0.05), which suggest slippage could be substantial: for every three acres of cropland placed into CRP two new acres would be planted elsewhere. This approximation should be viewed with caution because, while the U.S. is the world's largest producer of the staple commodities considered (including those influenced by CRP), it is not clear how well these estimated elasticities reflect those of the United States.

This demand and supply based calculation also appears to contradict historical relationship between land retirement and cropland harvested, which shows harvested cropland falling almost commensurately with acreage retired (Figure 3.11-10). Since land retirement programs like CRP have historically expanded during times of low commodity prices and contracted in times of high commodity prices (presumably a result of price stabilization goals of land retirement programs), slippage effects could be obscured by land use changes that would have taken place even in the absence of land retirement programs.

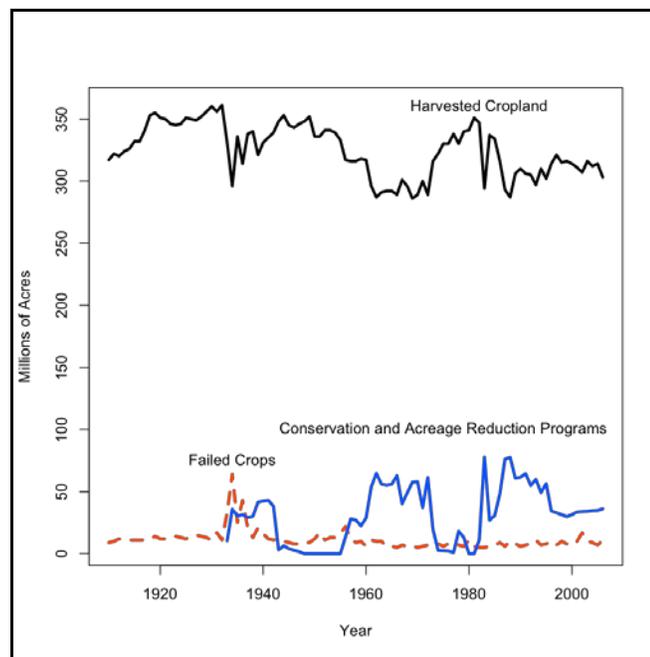


Figure 3.11-10. Cropland Harvested, Cropland Failed, and Land in Acreage Retirement, (Lubowski *et al.* 2006)

Finally, the highly inelastic estimated elasticities of supply and demand suggest significant positive commodity price effects of CRP. These price effects imply benefits to agricultural producers not participating in CRP and losses to domestic and foreign buyers of agricultural commodities.

(b) Recreation Market Effects

Where CRP reduces the supply of agricultural activities, it increases the supply of recreational opportunities such as bird watching and hunting. This change creates benefits for those participating in those activities and possibly additional benefits to landowners enrolled in CRP who may charge for recreation amenities. There may also be positive spillover effects to landowners near CRP parcels who may charge for recreation amenities. Feather *et al.* (1999) found evidence of significant increased recreation values. Brimlow (2009) found evidence of large positive spillover effects on land values in counties with CRP enrollments.

(c) Local Economy Effects

Landowners receiving rental payments from CRP may spend the income in their local economy and thereby stimulate local economic activity, causing positive employment and welfare effects for people not participating in CRP but who reside in the same communities as CRP landowners. Moreover, increases in recreational activities might also increase demand for services to recreationists, like retailers of recreational equipment, food, and lodging. On the other hand, the CRP-induced reduction in agricultural production may reduce demand for agricultural labor, inputs and services of local market intermediaries, like grain elevators. These may reduce employment and general economic activity in economies with large amounts of acreage enrolled in CRP. Of course, local economies differ and the impacts of changed income to CRP participants will also differ between communities and there may be larger local economy effects in some areas as compared to others; however, the general conclusion is that on average there is a zero net effect to local economies. In addition, past research has shown the net effect of CRP on local economies—the sum of all positive and negative effects—was small in areas where CRP enrollment has been greatest (Sullivan *et al.* 2004). More specifically, Sullivan *et al.* found that counties with high CRP enrollment, when compared to a similar “control” county with low CRP enrollment, had slightly “dampened job growth in counties with small agricultural centers (more isolated rural counties); however, those effects were primarily in the short term. It was indicated that there appeared to be short-term reductions in demand for businesses in small agricultural centers, which may have indicated that high-CRP regions may have experienced disproportionate loss of local businesses and employment in farm-related industries; however, further analysis by Sullivan *et al.* indicated that these economics adapted over the longer term to the reduced croplands within these communities showing few measurable effects at the county level.

3.12 ENVIRONMENTAL JUSTICE

3.12.1 Definition of the Resource

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations requires Federal Agencies to consider as a part of

their action, any disproportionately high and adverse human health or environmental effects to minority and low-income populations. Agencies are required to ensure these potential effects are identified and addressed.

FSA defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” (FSA 2009e). In this context, fair treatment means that no group of people should bear a disproportionate share of negative environmental consequences resulting from a Federal action.

Consideration of the potential consequences of the proposed action for environmental justice requires three main components:

- A demographic assessment of the affected community to identify the presence of minority or low income populations that may be potentially affected;
- An integrated assessment of all potential impacts identified to determine if any result in a disproportionately high and adverse impact to these groups; and
- Involvement of the affected communities in the decision-making process and the formation of any mitigation strategies.

FSA’s guidance issued in 1-EQ (FSA 2009e) defines a minority population by race, ethnicity, or a combination of these two classifications such that a minority population can be described as being composed of the following population groups, singly or in combination, exceeding 50 percent of the population in an area:

- American Indian or Alaskan Native
- Asian or Pacific Islander
- Black
- Hispanic

Each year the U.S. Census Bureau defines the national poverty thresholds, which are measured in terms of household income dependent upon the number of persons within a household. Individuals falling below the poverty threshold are considered low-income individuals. The U.S. Census Bureau census tracts where at least 20 percent of the residents are considered poor are known as poverty areas. When the percentage of residents considered poor is greater than 40 percent, the census tract is considered an extreme poverty area.

3.12.2 Existing Conditions

The USDA ERS found that by 2006 non-metropolitan counties in the U.S. accounted for a population of approximately 50.2 million persons (approximately 16.8 percent of the total United States population (ERS 2008,). The general trend in these counties was a decline in the population with over 51 percent of the non-metropolitan counties experiencing population declines of approximately 0.5 percent per year from 2000 to 2006. Table 3.12-1 illustrates the general characteristics of population, agricultural dependency, and CRP participation. The majority of counties in three states are agriculturally dependent. These states and their

Table 3.12-1. State Level Summary of Population, Agriculture Dependent Counties, and CRP Participation

State	Total Population 2007 est.	Percent Minority	Percent Poverty	Median Household Income	Total Counties	Agriculture Dependent Counties (1)	Total Farms	Land in Farms (acres)	CRP Counties	Farms with CRP or WRP Land	CRP or WRP Land (acres)
Alabama	4,627,851	31.4	16.9	\$40,554	67	3	48,753	9,033,537	67	7,914	492,548
Alaska	683,478	34.0	8.9	\$64,333	17	0	686	881,585	3	48	29,766
Arizona	6,338,755	41.2	14.2	\$49,889	15	0	15,637	26,117,899	Withheld	Withheld	Withheld
Arkansas	2,834,797	24.1	17.9	\$38,134	75	17	49,346	13,872,862	55	3,081	237,861
California	36,553,215	57.5	12.4	\$59,948	58	5	81,033	25,364,695	18	460	148,899
Colorado	4,861,515	28.8	12.0	\$55,212	64	15	34,054	31,604,911	38	6,667	2,472,094
Connecticut	3,502,309	26.0	7.9	\$65,967	8	0	4,916	405,616	4	24	318
Delaware	864,764	31.5	10.5	\$54,610	3	0	2,546	510,253	3	399	7,906
Florida	18,251,243	39.4	12.1	\$47,804	67	7	47,463	9,231,570	21	1,561	82,606
Georgia	9,544,750	41.7	14.3	\$49,136	159	23	47,846	10,150,539	125	6,482	312,505
Hawaii	1,283,388	75.4	8.0	\$63,746	5	0	7,521	1,121,329	Withheld	Withheld	Withheld
Idaho	1,499,402	14.5	12.1	\$46,253	44	13	25,349	11,497,383	40	3,598	824,102
Illinois	12,852,548	35.1	11.9	\$54,124	102	3	76,860	26,775,100	100	43,945	1,086,695
Indiana	6,345,289	16.6	12.3	\$47,448	92	0	60,938	14,773,184	91	21,457	316,599
Iowa	2,988,046	9.5	11.0	\$47,292	99	13	92,856	30,747,550	99	54,409	1,970,486
Kansas	2,775,997	19.4	11.2	\$47,451	105	34	65,531	46,345,827	104	29,599	3,258,989
Kentucky	4,241,474	12.0	17.3	\$40,267	120	7	85,260	13,993,121	89	9,607	358,351
Louisiana	4,293,204	37.8	18.6	\$40,926	64	4	30,103	8,109,975	39	3,061	309,848
Maine	1,317,207	5.5	12.0	\$45,888	16	0	8,136	1,347,566	8	600	23,574
Maryland	5,618,344	42.1	8.3	\$68,080	24	0	12,834	2,051,753	23	3,571	85,651
Massachusetts	6,449,755	20.9	9.9	\$62,365	14	0	7,691	517,879	2	11	74
Michigan	10,071,822	22.5	14.0	\$47,950	83	0	56,014	10,031,807	67	9,846	276,151
Minnesota	5,197,621	14.4	9.5	\$55,802	87	10	80,992	26,917,962	84	33,693	1,829,428
Mississippi	2,918,785	41.2	20.6	\$36,338	82	9	41,959	11,456,241	82	14,150	955,119
Missouri	5,878,415	17.8	13.0	\$45,114	115	6	107,825	29,026,573	108	23,038	1,592,913
Montana	957,861	11.8	14.1	\$43,531	56	26	29,524	61,388,462	50	6,877	3,480,851

Table 3.12-1. State Level Summary of Population, Agriculture Dependent Counties, and CRP Participation
(cont'd)

State	Total Population 2007 est.	Percent Minority	Percent Poverty	Median Household Income	Total Counties	Agriculture Dependent Counties (1)	Total Farms	Land in Farms (acres)	CRP Counties	Farms with CRP or WRP Land	CRP or WRP Land (acres)
Nebraska	1,774,571	15.3	11.2	\$47,085	93	63	47,712	45,480,358	92	17,009	1,341,217
Nevada	2,565,382	42.1	10.7	\$55,062	17	1	3,131	5,865,392	1	Withheld	146
New Hampshire	1,315,828	6.8	7.1	\$62,369	10	0	4,166	471,911	2	13	167
New Jersey	8,685,920	38.1	8.6	\$67,035	21	0	10,327	733,450	8	138	2,639
New Mexico	1,969,915	57.9	18.1	\$41,452	33	5	20,930	43,238,049	16	1,674	590,399
New York	19,297,729	40.0	13.7	\$53,514	58	0	36,352	7,174,743	49	2,297	66,544
North Carolina	9,061,032	32.6	14.3	\$44,670	100	6	52,913	8,474,671	85	5,938	137,628
North Dakota	639,715	10.1	12.1	\$43,753	53	37	31,970	39,674,586	53	18,438	3,388,474
Ohio	11,466,917	17.4	13.1	\$46,597	88	0	75,861	13,956,563	83	20,128	362,311
Oklahoma	3,617,316	28.3	15.9	\$41,567	77	15	86,565	35,087,269	63	6,516	1,074,041
Oregon	3,747,455	19.7	12.9	\$48,730	36	4	38,553	16,399,647	30	2,156	567,565
Pennsylvania	12,432,792	18.4	11.6	\$48,576	67	0	63,163	7,809,244	62	7,272	230,219
Rhode Island	1,057,832	21.2	12.0	\$53,568	5	0	1,219	67,819	Withheld	Withheld	28
South Carolina	4,407,709	34.8	15.0	\$43,329	46	0	25,867	4,889,339	45	5,456	210,994
South Dakota	796,214	13.5	13.1	\$43,424	66	45	31,169	43,666,403	66	14,817	1,559,343
Tennessee	6,156,719	22.9	15.9	\$42,367	95	1	79,280	10,969,798	78	6,330	278,030
Texas	23,904,380	52.3	16.3	\$47,548	254	56	247,437	130,398,753	167	18,691	4,074,070
Utah	2,645,330	17.8	9.7	\$55,109	29	4	16,700	11,094,700	12	656	208,664
Vermont	621,254	4.8	10.1	\$49,907	14	0	6,984	1,233,313	9	180	1,981
Virginia	7,712,091	32.9	9.9	\$59,562	96	0	47,383	8,103,925	89	4,068	69,707
Washington	6,468,424	24.1	11.4	\$55,591	39	4	39,284	14,972,789	33	5,091	1,557,212
West Virginia	1,812,035	6.4	16.9	\$37,060	55	0	23,618	3,697,606	17	243	4,263
Wisconsin	5,601,640	14.7	10.8	\$50,578	72	2	78,463	15,190,804	65	20,350	606,755
Wyoming	522,830	12.5	8.7	\$51,731	23	2	11,069	30,169,526	18	779	284,287
United States	301,621,157	34.2	13.0	\$50,740	3,066	440	2,204,792	922,095,840	2,460	442,359	36,770,984

Source: USCB 2002, 2009; NASS 2009a, c

percentages of agriculturally dependent counties are North Dakota (69.8 percent), South Dakota (68.2 percent), and Nebraska (67.7 percent). Mississippi, with 20.6 percent in poverty, is the only state that would be characterized as a poverty area.

Minority Farm Operator Populations

The 2007 Agricultural Census provided demographic information on up to three farm operators per farm. Table 3.12-2 illustrates the total number of operators by designation and the percent minority within each designation. Overall, in 2007, 6.6 percent of the total operators in the U.S. were minority. The greatest overall concentration of minority operators was in the Western states. Table 3.12-3 illustrates the states with the highest minority operator percentage. Table 3.12-4 provides the racial and ethnic profile of all operators in the U.S. in 2007. The largest minority category is Hispanic, which accounts for approximately 2.5 percent of all operators, followed by American Indian or Native Alaskan at 1.6 percent. The distribution of minority owned farms is illustrated in Figure 3.12-1, while the distribution of Hispanic owned farms are illustrated in Figure 3.12-2.

Table 3.12-2. Percent Minority Operators by Region and by Operator Type

Region	Total Operators			Percent Minority		
	Principal Operator	Operator 2	Operator 3	Principal Operator	Operator 2	Operator 3
Atlantic	446,788	183,708	29,370	2.8%	3.2%	3.6%
Midwest	629,809	258,136	40,813	1.2%	2.1%	2.2%
Plains	510,384	212,864	30,729	8.7%	8.7%	10.8%
South	291,340	114,844	17,517	9.1%	8.6%	12.3%
West	292,915	146,192	24,307	15.8%	14.3%	19.9%
United States	2,204,792	931,670	145,072	6.5%	6.7%	8.7%

Source: NASS 2009a

Table 3.12-3. Highest Percent Minority Operator States

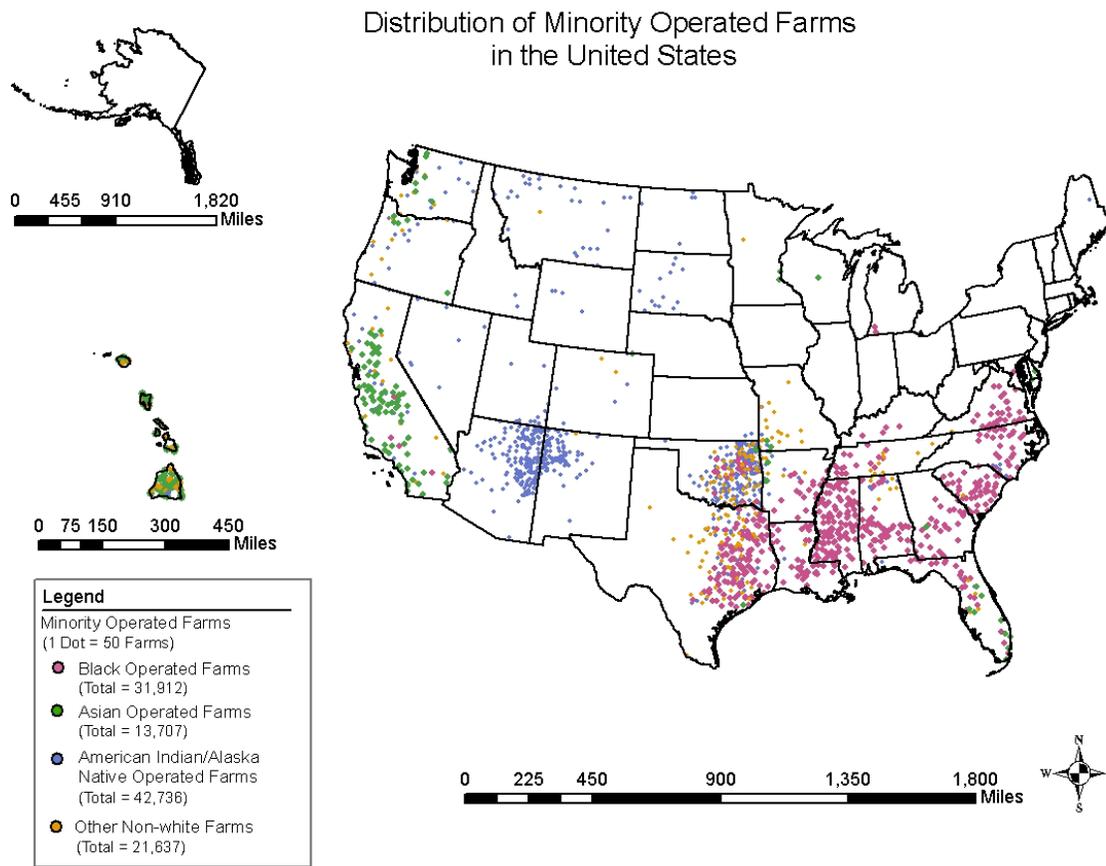
State	Percent Minority		
	Principal Operators	Operator 2	Operator 3
Arizona	59.2%	58.0%	68.1%
Hawaii	54.4%	52.4%	59.5%
New Mexico	52.1%	43.3%	45.8%

Source: NASS 2009a

Table 3.12-4. Race or Ethnicity of All Operators in the U.S., 2007

Operator Type	Race or Ethnicity of All Operators								Total Operators
	American Indian or Alaska Native	Asian	Black or African American	Native Hawaiian or Other Pacific Islander	White	More than one race reported	Hispanic, White	Hispanic, not White	
Principal	33,009	10,610	30,002	1,152	2,062,456	11,993	51,869	3,701	2,204,792
	1.5%	0.5%	1.4%	0.1%	93.5%	0.5%	2.4%	0.2%	
Operator 2	16,587	5,732	7,162	757	869,360	10,138	20,114	1,820	931,670
	1.8%	0.6%	0.8%	0.1%	93.3%	1.1%	2.2%	0.2%	
Operator 3	3,527	941	1,727	133	132,463	1,323	3,317	1,641	145,072
	2.4%	0.6%	1.2%	0.1%	91.3%	0.9%	2.3%	1.1%	
Total Operators	53,123	17,283	38,891	2,042	3,064,279	23,454	75,300	7,162	3,281,534
	1.6%	0.5%	1.2%	0.1%	93.4%	0.7%	2.3%	0.2%	

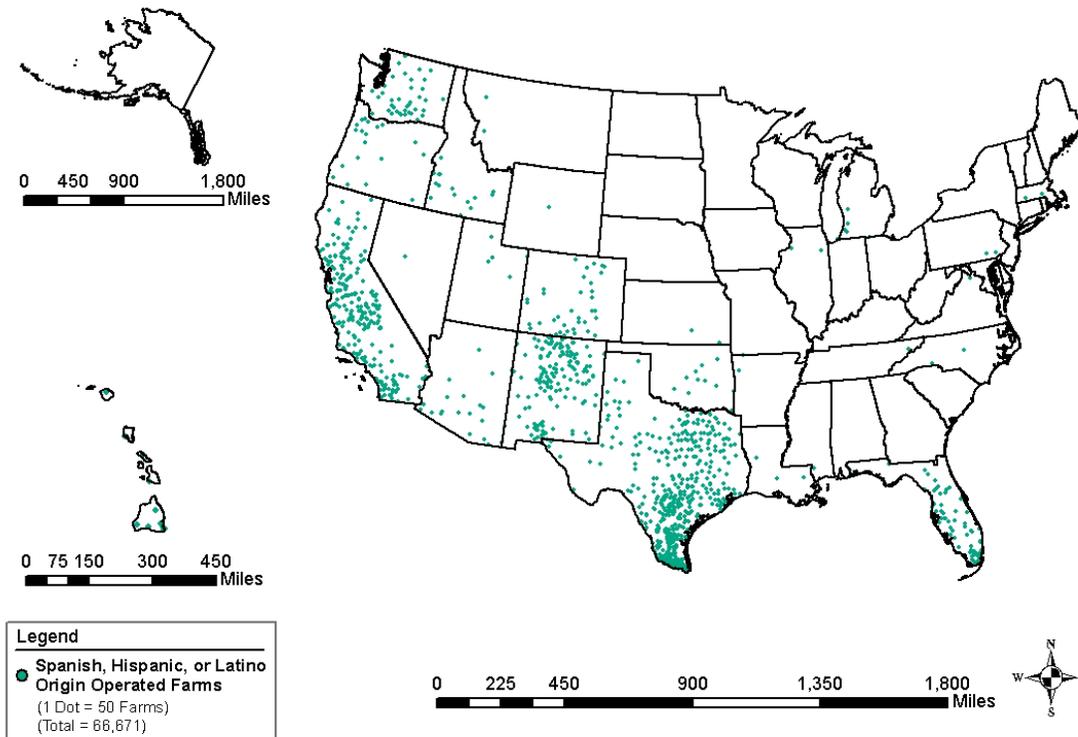
Source: NASS 2009a



Source: USDA 2007 Census of Agriculture

Figure 3.12-1. Distribution of Minority Operated Farms in the U.S.

Distribution of Spanish, Hispanic, or Latino Origin Operated Farms in the United States



Source: USDA 2007 Census of Agriculture

Figure 3.12-2. Distribution of Spanish, Hispanic, or Latino Operated Farms in the U.S.

Poverty in Agriculturally Dependent Counties

An analysis was performed to determine the average poverty rate within the agriculturally dependent counties in relation to non-agriculturally dependent counties within the same state and within the USDA regions. The 2000 Decennial Census information was used to provide the most detailed analysis of poverty rates at the county level. The average national rate for agriculturally dependent counties was 14.8 percent, while the average in non-agriculturally dependent counties was 14.1 percent (Table 3.12-5). The average poverty rate within the agriculturally dependent counties in five states would be considered poverty areas. Within those five states, three of the states also have an average poverty rate in the non-agriculturally dependent counties that would be considered poverty areas. One additional state has an average poverty rate within the agriculturally dependent counties that is within one percentage point of being considered a poverty area, while three additional states have an average within the non-agriculturally dependent counties that is within one percentage point of a poverty area.

Table 3.12-5. Poverty Rates in Agriculturally Dependent and Non-Dependent Counties by State

		Agriculture Dependant Counties	Average Poverty Rate of Agriculturally Dependent Counties	Average Poverty Rate of Non-Agriculturally Dependent Counties
	U.S.	14.35%	14.8	14.09
West	Arizona	0.00%	-	19.07
	California	8.62%	20.43	13.94
	Colorado	23.44%	12.01	11.83
	Idaho	29.55%	14.91	12.89
	Montana	46.43%	15.75	17.43
	Nevada	5.88%	9.72	10.89
	New Mexico	15.15%	21.27	20.34
	Oregon	11.11%	11.87	12.81
	Utah	13.79%	7.62	12.08
	Washington	10.26%	15.79	13.75
	Wyoming	8.70%	11.69	13.59
Plains	Kansas	32.38%	10.71	11.15
	Nebraska	67.74%	11.81	11.20
	North Dakota	69.81%	14.44	12.95
	Oklahoma	19.48%	16.79	16.37
	South Dakota	68.18%	17.19	18.60
	Texas	22.05%	16.87	17.35
South	Alabama	4.48%	25.07	19.03
	Arkansas	22.67%	19.68	13.13
	Florida	10.45%	15.32	14.17
	Georgia	14.47%	16.12	17.18
	Louisiana	6.25%	22.33	21.72
	Mississippi	10.98%	22.93	22.82
	South Carolina	0.00%	-	16.91
Midwest	Illinois	2.94%	9.45	10.55
	Indiana	0.00%	-	8.75
	Iowa	13.13%	8.84	9.19
	Michigan	0.00%	-	10.63
	Minnesota	11.49%	8.11	9.43
	Ohio	0.00%	-	10.49
	Wisconsin	2.78%	7.66	8.87

Table 3.12-5. Poverty Rates in Agriculturally Dependent and Non-Dependent Counties by State (cont'd)

		Agriculture Dependant Counties	Average Poverty Rate of Agriculturally Dependent Counties	Average Poverty Rate of Non-Agriculturally Dependent Counties
	U.S.	14.35%	14.8	14.09
Atlantic	Connecticut	0.00%	-	7.38
	Delaware	0.00%	-	13.05
	Kentucky	5.83%	18.12	19.20
	Maine	0.00%	-	12.39
	Maryland	0.00%	-	8.93
	Massachusetts	0.00%	-	9.68
	New Hampshire	0.00%	-	7.93
	New Jersey	0.00%	-	8.24
	New York	0.00%	-	12.09
	North Carolina	6.00%	14.44	14.33
	Pennsylvania	0.00%	-	10.91
	Rhode Island	0.00%	-	10.03
	Tennessee	1.05%	9.73	15.02
	Vermont	0.00%	-	10.59
	Virginia	0.00%	-	12.15
West Virginia	0.00%	-	18.86	

Source: USCB 2002.

3.13 RECREATION

3.13.1 Definition of the Resource

Recreational resources are those activities or settings either natural or manmade that are designated or available for recreational use by the public. In this analysis, recreational resources include lands and waters utilized by the public for hunting and viewing wildlife, fishing, hiking, birding, boating, and other water-related activities. CRP participants may allow public recreational use of lands enrolled in the program, as long as such use does not defeat the purpose of the conservation practice established.

3.13.2 Existing Conditions

Outdoor Recreation Trends

Cordell, Betz, and Green (2008) have indicated a growing trend in outdoor recreation activities from 1994 to 2008. Their analysis of the National Survey on Recreation and the Environment indicates that approximately 62.8 million participants were viewing wildlife during 1994/1995 and

that during 2005/2008 that number had increased to 114.8 million participants (82.8 percent increase). The days spent on wildlife viewing activities increased from 2.3 billion days in 1994/1995 to 5.3 billion days by 2005/2008 (130.4 percent increase). With a general increasing trend for outdoor recreational activities, there could be sufficient opportunities for recreational activities to be conducted on private lands in rural areas, including those lands enrolled in CRP practices.

In 2008, the U.S. Fish and Wildlife Service published the 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (USFWS 2006). The surveys were conducted on state and national levels. The 2006 survey found that more than 87 million individuals greater than or equal to 16 years of age participated in fishing, hunting, and/or wildlife-watching activities within one year prior to the survey, nationally (Table 13.3-1).

Table 3.13-1. Total Wildlife-Associated Recreation Participants by Region

Region Where Activity Occurred	Total		Sportspersons		Wildlife-watching	
	Participants (000s)					
	Number	Percent	Number	Percent	Number	Percent
United States	87,465	100	33,916	39	71,132	81
Atlantic	32,077	100	11,046	34	26,325	82
Midwest	24,414	100	10,068	41	18,909	77
Plains	10,109	100	4,868	48	7,221	71
South	15,809	100	8,193	52	10,983	69
West	21,325	100	6,611	31	17,683	83

Source: USFWS 2006.

The largest percentage of hunting in the U.S. was for big game (85 percent), then small game (38 percent), migratory birds (18 percent), and other animals (9 percent). The data suggests that a portion of the hunting population participated in more than one class of game hunting during the year. Table 3.13-2 provides an illustration on the number of days hunting, while Table 3.13-3 provides the number of anglers and days fishing in freshwater (except Great Lakes).

Table 3.13-2. Total Days Hunting by Region

Regions	Days of hunting in state (000s)			Days of hunting by state residents (000s)		
	Total Days, Residents and nonresidents	Days by state residents	Days by nonresidents ¹	Total days, in states of residence and other states	Days in state of residence	Days in other states ¹
United States	219,925	203,319	18,023	219,925	203,319	18,023
Atlantic	64,537	59,393	4,815	65,837	59,393	6,090
Midwest	62,148	59,399	2,536	62,271	59,399	2,850
Plains	27,275	25,143	2,079	26,171	25,143	514
South	45,660	41,100	4,426	46,443	41,100	5,344
West	20,461	17,108	3,208	19,338	17,108	1,989

Source: USFWS 2006.

¹ State data include estimates from small sample sizes; some states counted as zero because sample size was too small to report reliably, which is why the United States total does not equal the total of all regions.

² United States totals also include participation by residents of the District of Columbia.

Table 3.13-3. Total Anglers and Days Fishing (Freshwater except Great Lakes)

Region	Anglers (000s)			Days of fishing by state residents (000s)		
	Total anglers, residents and nonresidents	State Residents	Nonresidents ¹	Total days, of residence and other states	Days by state residents	Days by nonresidents ¹
United States	25,035	23,266	4,604	419,942	382,512	37,869
Atlantic	6,955	5,460	1,459	105,497	94,357	10,712
Midwest	7,776	6,439	1,337	119,465	109,462	10,004
Plains	3,314	2,901	395	48,714	45,578	3,088
South	5,480	4,454	1,028	90,453	83,986	6,470
West	4,944	3,892	1,051	54,277	47,672	6,603

Source: USFWS 2006.

¹ Numbers include estimates from small sample sizes; some states counted as zero because sample size was too small to report reliably.

² United States totals also include participation by residents of the District of Columbia

The total amount spend on these activities, including trip-related, equipment and miscellaneous expenditures, was over \$122 billion within that same time period. The average total expenditures in 2006 were \$1,229 per angler with an average trip expenditure of \$80 per day. The average total expenditures in the same year were \$1,447 per hunter with an average per trip expenditure of \$170 per day. The total of expenditures in 2006 per wildlife-watching participant averaged \$216 per person. Table 3.13-4 illustrates the wildlife-recreation related expenditures by region.

Rural Tourism

Reeder and Brown (2005) found that rural areas that focused on recreational development and rural tourism aspects experienced greater socioeconomic well-being than rural areas that had not focused on these types of development. They found that these areas had generally higher employment growth rates and had a greater percentage of working age residents employed. Earnings and income levels were generally higher; however, cost of living also increased in these areas, resulting in higher housing prices. The cost of living increases were generally not enough to fully offset the income gains attributable to rural tourism and recreational development.

Brown and Reeder (2007) estimated that approximately 52,000 farms (2.5 percent of total farms) in the U.S. in 2004 had income derived from farm-based recreation activities, such as hunting, fishing, horseback riding, etc. Barry and Hellerstein (2004) indicated that on-farm recreational income provides farmers approximately \$800 million per year with the highest annual per farm income being in the Fruitful Rim (\$1,127) and the highest percentage of farms with recreational income being in the Heartland (7 percent) (Figure 3.13-1).

Carpio, Wohlgenant, and Boonsaeng (2008) noted that approximately 62 million Americans visited farms at least one time in 2000 (approximately 30 percent of the population). They estimated that the average number of trips per year to farms was 10.3 with a generated consumer surplus of \$174.82 per trip with \$33.50 per trip being specifically generated by the rural landscape. The total consumer surplus due to the rural landscape was estimated to be

Table 3.13-4. Wildlife-Recreation Associated Expenditures by Region (\$000)

Region Where Spending Occurred	Total, wildlife-associated expenditures				Fishing and hunting expenditures				Wildlife-watching expenditures			
	Total	Trip-Related	Equipment	Other	Total	Trip-related	Equipment	Other	Total	Trip-related	Equipment	Other
United States	122,304,987	37,432,326	64,137,178	20,735,483	76,650,027	24,557,174	40,963,125	11,129,728	45,654,960	12,875,152	23,174,053	9,605,755
Atlantic	27,947,442	8,452,035	16,389,337	3,106,071	17,237,929	5,474,991	10,186,725	1,576,208	10,709,515	2,977,043	6,202,610	1,529,861
Midwest	25,514,143	6,966,786	13,504,334	5,043,023	18,005,482	5,264,752	9,267,235	3,473,495	7,508,659	1,702,034	4,237,098	1,569,528
Plains	12,889,842	4,287,517	6,659,068	1,943,256	9,117,852	3,518,052	4,438,731	1,161,069	3,771,990	769,466	2,220,337	782,187
South	21,489,749	6,921,046	11,373,992	3,194,713	14,696,808	5,293,625	7,268,557	2,134,625	6,792,942	1,627,421	4,105,433	1,060,087
West	24,215,665	9,574,054	12,302,347	2,339,264	13,270,763	4,473,423	7,625,829	1,171,511	10,944,901	5,100,628	4,676,515	1,167,754

Source: USFWS 2006.

\$21.4 billion, which was approximately equal to half the U.S. net total farm income average. Carpio, Wohlgenant, and Boonsaeng (2008) surmise that there is a potential trend indicating an increasing regard to the visitors' economic valuation of farm amenities.

Recreation Effects from CRP

Wilson and Thilmany (2005) analyzed ARMS data to determine the recreational effects from CRP and WRP investments in the West. They found that the data indicated that CRP and WRP investments proved to have a negative impact on recreational income when indexed to land values and total sales; however, they surmised that if investments from the CRP and WRP were sufficiently large, there was a positive relationship with recreational income. They estimated that in areas with high CRP and WRP enrollment there would be generated spill-over effects to recreational income from the ecological and environmental quality improvement on the lands enrolled. Wilson and Thilmany (2005) suggest that for areas with high CRP and WRP enrollment there could exist a comparative advantage for generating recreational income, which could offset losses associated with removing those lands from crop production.

In 2003, A National Survey of CRP Participants on Environmental Effects, Wildlife Issues, and Vegetation Management on Program Lands (Allen and Vandever 2003) was published. The survey's results indicated that landowners saw direct ecological and economical benefits of the conversion of agricultural lands to CRP land. Seventy-three percent of respondents noticed an increase in wildlife populations within lands enrolled in the program. Thirty-eight percent of the respondents found more opportunities to hunt and 12 percent found the increase in wildlife to also increase opportunities to lease land for hunting. Wildlife observation was found to be a positive impact on the lands enrolled for nearly sixty percent of all respondents. Nearly 17 percent of those enrolled perceived a potential increase in future income from the implementation of the CRP.

Southwick Associates, Inc. and D.J. Case & Associates (2008) undertook a survey of 4,000 CRP randomly selected participants throughout the United States to understand how CRP acreage was being used for recreational purposes. A response rate of 74 percent was recorded for these surveys. Southwick and Case (2008) found that 57 percent of the respondents allowed some portion of their CRP acreage to be used for recreational purposes. Within those that allowed their CRP acreage to be used for recreational purposes, the most common uses were hunting (89 percent), wildlife viewing (44 percent), hiking (23 percent), fishing (7 percent), and various other recreational uses. Ten percent of the affirmative CRP participants received income from the recreational use of their CRP acreage. Southwick and Case (2008) found that CRP enrollment has an indirect effect in determining whether to lease property for recreational purposes. Southwick and Case (2008) found that on average CRP participants received \$1.90 per acre before enrollment. After enrollment that average increased to \$6.13 per acre. Southwick and Case (2008) extrapolated this result to indicate that if all CRP acreage was used to generate recreational income, the approximately 36.0 million acres would generate \$28.9 million. Without CRP, Southwick and Case (2008) estimates that value to be approximately \$7.6 million, approximately \$21 million less than the CRP enrollment.

Wildlife benefits from CRP vary based on the plant forms and management practices that the land is enrolled in. Areas that are enrolled as pine plantings, such as those found in the Southeast Region the of the U.S., do not require management that would make these areas more beneficial for wildlife but raise management costs, with applications such as herbicide and prescribed burning (Burger 2005). These areas only encompass a relatively small percentage of the cover type in most USDA regions (eight percent tree cover, nationally), and always a minority portion. The greatest percent cover type of CRP land is enrolled as a grass cover type (Sullivan *et al.* 2004).

Sullivan *et al.* (2004) indicated that CRP wildlife related practices in the North Plains was estimated to generate approximately \$63 million in nonmarket benefits to wildlife at an average benefit of \$7.00 per acre. This was built on the general idea that CRP practices associated with permanent and temporary wildlife habitat factors generated a more favorable environment for both game and non-game species. The study also indicated that the Northern Plains contained approximately 26.2 percent of the total CRP acreage, but 44.5 percent of the CRP acreage enrolled in wildlife practices. It was estimated that wildlife benefits included approximately \$33 million per year for wildlife viewing and \$30 million per year in pheasant hunting.

Hansen (2007) updated the environmental benefit calculation generated through on-going use of the CRP. He determined that the wildlife-related benefits associated with CRP activities generated approximately \$737 million per year. Following the methodology established in Feather, Hellerstein, and Hansen (1999) and in Sullivan *et al.* (2004), the analysis was based on wildlife viewing and pheasant hunting. Table 3.13-5 illustrates the CRP wildlife benefits as identified in both Sullivan *et al.* (2004) and in Hansen (2007).

Table 3.13-5. Comparison of Wildlife Benefits

Farm Production Region	Distribution of CRP Enrollment (Percent of Acres)				Estimate annual nonmarket benefits from: Total wildlife benefits			
	Total CRP ^S	Wildlife CP ^S	Total CRP ^H	Wildlife CP ^H	Overall ^{1S}	Per Acre ^S	Overall ^{1H}	Per Acre ^H
Northeast	0.6	0.5	1.1	1.3	8	45	8.51	47.50
Lake States ²	7.8	16.3	7.5	13.4	132	52	132.18	55.43
Corn Belt ²	14.7	15.6	14.5	22.1	249	52	249.2	55.43
Northern Plains	26.2	44.5	25.7	29.1	63	7	62.99	7.79
Appalachia ³	2.8	1	2.3	2.6	36	41	36.36	42.39
Southeast ³	4.6	1.5	3.0	2.2	60	40	59.93	42.39
Delta ³	3.6	2.5	4.1	5.6	47	40	46.75	42.39
Southern Plains	15.4	1.2	14.2	2.3	135	27	134.71	28.36
Mountain ^{4,5}	19.3	12	21.5	15.8	6	1	5.85	0.58
Pacific ⁵	5.1	4.9	6.0	5.5	1	1	0.91	0.58

¹ Millions of 2000 dollars ^S Sullivan, *et al.* 2004 ^H Hansen 2007

² Hansen 2007 combined the Lake States and Corn Belt states in the per acre calculations

³ Hansen 2007 combined the Appalachia, Southeast, and Delta states in the per acre calculations

⁴ Hansen 2007 estimated the per acre wildlife benefit in Montana to be \$1.77 be acre

⁵ Hansen 2007 combined the Mountain and Pacific regions in the per acre calculations

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 BIOLOGICAL RESOURCES: VEGETATION

4.1.1 Significance Criteria

Impacts to vegetation would be considered significant if implementation of an action or program resulted in removing land with unique vegetation communities, threatening the long term viability of the conservation cover, or an incidental or otherwise take of a Federally protected species or critical habitat.

4.1.2 Provision 1 (National Conservation Initiatives)

4.1.2.1 *Background/Methodology*

Enrollment in CRP ensures establishment of long-term conservation measures designed to improve the quality of ground and surface waters, control soil erosion, and enhance wildlife habitat on environmentally sensitive agricultural land. Enrollment in CRP would provide positive benefits to vegetation by creating or restoring natural vegetation covers.

Potential impacts to vegetation through implementation of the provision alternatives are analyzed qualitatively. In general, any alternative that would remove land from agricultural uses for conservation would be considered a positive impact on vegetation. Long-term benefits to vegetation would be achieved by reducing soil erosion and improving water quality, thereby ensuring long-term viability of the conservation cover. Poor water quality, especially water with high saline content, can reduce water uptake causing vegetation to become stressed. Excess nitrogen in water can cause an overgrowth of aquatic plants and algae, effectively, choking out other desirable vegetation and wildlife in the same water system.

4.1.2.2 *No Action Alternative*

Under the No Action Alternative, National Conservation Priority Areas and payment incentives designed to encourage enrollment in these areas would continue as currently configured. In addition, CREPs and initiatives implemented since the 2002 Farm Bill would also continue unchanged under this alternative. Continuation of these conservation practices and initiatives would restore or create introduced and natural terrestrial vegetation covers and aquatic vegetation. These benefits would be 10 to 15 years in duration or longer if contracts are extended. A large variety of vegetation is restored nationally by enrolling lands in CRP, varying by climate, ecoregion, and conservation practice. CRP benefits vegetation and biological diversity by establishing vegetative stands that preserve native species and uses introduced plant species in selective conditions. As such, all of the alternatives considered to implement Provision 1 provide similar benefits to vegetation; however, the No Action Alternative may be less beneficial than Alternative 1, under which regional conservation concerns can be addressed that could provide greater vegetative diversity. The impacts of the No Action Alternative on vegetation are similar to Alternative 2, but since the latter would reduce the number of acres devoted to the wetland initiative, it would shift potential benefits to terrestrial vegetation as opposed to aquatic; however, this difference would be minor since at most

750,000 acres are currently apportioned to this initiative. No significant negative impacts to vegetation would occur from continuation of the current program.

4.1.2.3 Alternative 1

This alternative would address National CPAs, State, and to a certain extent regional conservation initiatives as currently provided for, but in addition, would offer three new national conservation initiatives: the Water Resource Protection Initiative, Highly Erodible Land Initiative, and Regional Restoration of Critical Wildlife Habitat Initiative, targeted for a combined 1.5 million acres. These initiatives would benefit vegetation through establishment of conservation covers composed of diverse plants. These benefits would be 10 to 15 years in duration or longer if contracts are extended.

As discussed above, the Regional Restoration of Critical Wildlife Habitat Initiative would provide greater vegetative diversity on a regional geographic scale. Also, the Highly Erodible Lands Initiative would retire very sensitive lands from agricultural production that would benefit vegetation by establishing conservation covers in those areas. The Water Resource Protection Initiative would establish diverse riparian buffer and wetland vegetation. This increase in diversity on varying scales is more beneficial than the No Action Alternative, but because of the limited number of acres devoted to the initiatives, the difference is not substantial. Alternative 1 may be more beneficial to aquatic vegetation than terrestrial vegetation in comparison to Alternative 2, which reduces wetland initiative acreage; however, this acreage is relatively small, and the difference is not substantial. Implementation of Alternative 1 would have no significant negative impacts on vegetation.

4.1.2.4 Alternative 2

Under Alternative 2, no changes to existing National CPAs, CREPs, or national conservation initiatives would occur, except the wetlands initiative would be reduced. Establishing wetlands often includes installation of wetland plants. Alternative 2 would shift potential benefits to terrestrial vegetation as opposed to aquatic; however, this difference would be minor since at most 750,000 acres are currently apportioned to this initiative. No significant negative impacts to vegetation are expected from implementation of Alternative 2.

4.1.3 Provision 2 (Maximum Enrollment)

4.1.3.1 Background/Methodology

General Signup practices typically include large parcels of land which upon conversion from agriculture provide larger areas of potential habitat compared to Targeted Signup, which may enroll smaller areas such as habitat buffers around cropland to control erosion and runoff. Conservation Practices under General Signup include establishment of introduced and native grasses and legumes, trees, wildlife corridors, wildlife habitat, wildlife food plots, and rare and declining habitats. Targeted Signups include CREP, SAFE, State and National Initiatives, and Continuous Signup CPs including establishment of field windbreaks, grass waterways, shallow water areas for wildlife, grassed waterway strips, shelterbelts, living snow fences, vegetation cover to reduce salinity, vegetation cover of salt tolerant species, filter strips, riparian buffers, wetlands, wind sediment trap strips, farmable wetlands and buffers, marginal pastureland

buffers, bottomland timber, habitat buffers, longleaf pine forests, and duck nesting habitat. Land use changes from agriculture to CRP in any acreage would provide a positive benefit to vegetation through conservation cover establishment.

All acres enrolled in CRP create conservation cover and therefore benefit vegetation both directly and indirectly. Conservation practices that focus on habitat quality will have the greatest direct benefit to vegetation by restoring or creating new conservation covers. Establishment of native plant species ensures their continued survival and promotes biological diversity. These vegetation benefits would be 10 to 15 years in duration or longer if contracts are extended.

Potential impacts to vegetation through implementation of the provision alternatives are analyzed qualitatively. In general, any provision that would remove land from agricultural uses would be considered a positive impact on vegetation. Long-term benefits provided by CRP to vegetation include increasing vegetative diversity, and promoting the preservation of native plant species.

4.1.3.2 No Action Alternative

The No Action Alternative maintains CRP acreage at the 32 million acre level and allocates 27.5 million acres to General Signup and 4.5 million acres to Targeted (Continuous) Signup. The balance between the General and Continuous sign-ups changes slightly from FY 2009 levels toward Continuous Sign-up priorities, most notably increasing acres for Farmable Wetlands, SAFE, and Initiatives. Regular Continuous practices are scheduled at two million acres. General Signup tends to include whole fields which provide larger areas of conservation cover when compared to Targeted Signup practices. Targeted Signup practices include environmentally desirable lands and are considered high priority practices which may provide greater environmental benefit when enrolled. Enrollment in CRP under either signup type ensures long-term benefits to vegetation through soil erosion reduction, improved water quality, and creation of diverse conservation covers. The benefits of the No Action Alternative and Alternative 1 are therefore equally positive. The No Action Alternative is more beneficial to vegetation than Alternative 2, which would reduce the total CRP program by eight million acres.

4.1.3.3 Alternative 1

Alternative 1 maintains 32 million CRP acres and allocates 24 million acres to General Signup and eight million acres to Targeted Signup. This increase in Targeted Signup acreage provides greater potential for enrollment of environmentally desirable land and high priority practices. Enrollment in CRP ensures long-term benefits to vegetation through soil erosion reduction, improved water quality, and creation of conservation covers. Alternative 1 and the No Action Alternative provide equally positive benefits to vegetation species, and greater benefits compared to Alternative 2. No significant negative impacts to vegetation are expected from implementation of Alternative 1.

4.1.3.4 Alternative 2

Under Alternative 2, the total CRP enrollment acreage would be reduced to 24 million acres with 20 million acres allocated for General Signup and four million acres for Targeted Signup. While the conversion of land from agricultural practices benefits vegetation, the loss of CRP acreage

would result in the net loss of diverse conservation covers, with some lands expected to return to row crop agriculture and monotypic fields. Overall, the reduction of eight million acres proposed by this alternative is negative for vegetation; however, the relative impact of returning these acres to agricultural production on a national scale is small considering there are currently about 406 million acres of active cropland in the lower 48 States (NASS 2009a). Implementation of Alternative 2 could have significantly negative impacts on vegetation at the local level, for example, at the county level, or in States that have a large amount of acreage leaving the program due to contract expirations scheduled to occur from FY 2010 to FY 2012.

4.1.4 Provision 3 (Alfalfa Crop History)

4.1.4.1 Background/Methodology

Alfalfa is a cool season perennial legume and can remain productive from four to 10 years or more, depending on variety and climate (Jennings 2001). The plant grows to a height of up to three feet and has a deep root system, sometimes stretching to 15 feet deep. Alfalfa uses four to six inches more soil moisture than other crops throughout its growth (Kansas Rural Center 1998), and in drier climates, is irrigated. Alfalfa exhibits autotoxicity, a process in which established alfalfa plants produce a chemical or chemicals in the soil that reduce establishment and growth of new alfalfa in the area, reducing competition among individual alfalfa plants. As such, it is difficult to seed existing or killed alfalfa stands due to buildup of these inhibiting chemicals in the soil (Jennings 2001); this is why crop rotation is practiced on alfalfa fields. When the alfalfa stand is rotated (usually with corn), the farmer may have to leave it out of alfalfa only for six months to two years before returning it to alfalfa (Schlegel 2009). Strip farming uses alfalfa as an organic nitrogen fertilizer in grain crops. Alfalfa is grown in strips across the field with annual crops grown between the strips. The alfalfa is harvested and applied directly to the annual crop strips. The location of the alfalfa strips are rotated throughout the field. Alfalfa is also used for grazing by dairy farms which can provide an economic advantage over confined feeding. Alfalfa contains high levels of protein, calcium, and high quality fiber which aids in greater milk production (University of Arkansas 2003). Potential impacts to vegetation through implementation of the alternatives proposed considered to implement this provision are analyzed qualitatively. In general, any alternative that would remove land from agricultural uses and establish resource conserving vegetative covers would be considered a positive impact on vegetation.

4.1.4.2 No Action Alternative

Lands planted in alfalfa in rotation with multi-year grasses and other legumes in any rotation practice would continue to be enrolled in CRP under the No Action Alternative. The rotation must have occurred in the period within 1996 to 2001. Continuation of the program as established would not offer operators or landowners the opportunity to include lands planted in alfalfa alone in rotation with another agricultural commodity. Removal of alfalfa from production and establishing long-term conservation covers positively benefits vegetation by providing biological diversity, ensuring continuation of native species, and reducing irrigation, which depletes soil nutrients and in certain settings increases salts, impacting vegetation. Under the action alternatives, alfalfa alone in rotation with an eligible commodity may qualify for the

program, which could conceivably result in more acres being able to qualify for CRP, but this may be offset by the new provision of having to meet a particular rotation interval rather than any rotation as permitted by current procedures, hence, the No Action Alternative may be slightly more beneficial than the action alternatives. The number of acres enrolled in the program under this provision that also meets the HEL and other land eligibility requirements is not known, but is relatively low. No significant negative impacts to vegetation are expected from continuation of the existing provisions.

4.1.4.3 Alternative 1

Alternative 1 would expand CRP crop history requirements to include lands planted in alfalfa alone in rotation with an agricultural commodity at an eight year rotation interval (six years alfalfa and two years commodity). The rotation must have occurred within 2002 to 2007. This enables additional agricultural lands to be eligible to serve conservation purposes without increasing or decreasing the overall number of acres authorized for enrollment. Inclusion of this land in CRP therefore potentially ensures long-term benefits to vegetation through soil erosion reduction, improved water quality, and establishment of long-term conservation covers. Dairy use and strip cropping of alfalfa would be eligible under this alternative; however, the use of alfalfa in these cropping methods is a supplement to other farming practices and it is unlikely that farmers would convert this land to CRP. As Alternative 1 requires a shorter crop rotation interval than Alternative 2, it may be easier to meet; however, Alternative 1 would potentially qualify less land than the No Action Alternative, which permits any rotation. As such, the provision has negligible impacts on vegetation due to the limited number of acres available to enroll under the authorized 32 million program acres. No significant negative impacts to vegetation would occur from implementation of Alternative 1.

4.1.4.4 Alternative 2

Alternative 2 would expand CRP crop history requirements to include lands planted in alfalfa alone in rotation with an agricultural commodity at a 12-year rotation interval (10 years alfalfa and two years commodity). The rotation must have occurred within 2002 to 2007. This enables additional agricultural lands to be converted to serve conservation purposes without increasing or decreasing the overall number of acres authorized for enrollment. Inclusion of this land in CRP therefore potentially ensures long-term benefits to vegetation through soil erosion reduction, improved water quality, and establishment of conservation covers. Fewer acres would qualify under this alternative that is more difficult to meet in comparison to the No Action Alternative and Alternative 1; however, the impact to vegetation would not be significantly negative due to the small number of acres that could be enrolled under the 32 million acre program cap from FY 2010 to FY 2012.

4.1.5 Provision 4 (County Acreage Limitation Exception)

4.1.5.1 Background/Methodology

Limiting acreages for enrollment ultimately limits the potential vegetation benefits; however, any new CRP enrollment potentially ensures long-term benefits to vegetation through establishing conservation covers, soil erosion reduction, and improved water quality.

Potential impacts to vegetation through implementation of the alternatives considered for this provision are analyzed qualitatively. In general, any alternative that would remove land from agricultural use and establishes long-term conservation covers would be considered a positive impact on vegetation.

4.1.5.2 No Action Alternative

The No Action Alternative sets CRP and WRP County enrollment limits to no more than 25 percent of a county's cropland, except when it is determined there would not be an adverse effect to the local economy and producers were having difficulty complying with highly erodible land conservation plans, and not excepting acreage enrolled under shelterbelt and windbreak practices. Currently there is not an upward limit on acreage in excess; however, the authority to enroll no more than 32 million acres in the program still applies, and any limitations on the allotment of acres for certain CPs or initiatives per State would not be waived. Currently, 24 counties have 25 percent or more of cropland enrolled and none have more than 50 percent. Allowing more lands to be enrolled in the program potentially takes land out of agricultural production and reduces soil erosion while establishing long-term conservation covers, and improves water quality beneficial to vegetation. Implementation of the No Action Alternative benefits vegetation similar to that expected under Alternative 1 since both alternatives do not impose an additional county cropland cap, but would realize more benefits than Alternative 2, which except for additional acreage enrolled under CREP or Continuous Signup, caps additional CRP and WRP combined acreage at no more than 50 percent of a county's cropland. No significant negative impacts to vegetation would occur from continuation of the existing provisions.

4.1.5.3 Alternative 1

Under Alternative 1, a county may exercise its yes/no authority to allow additional acreage enrolled under CREP or Continuous CRP beyond the cap, which stipulates no more than 25 percent of a county's cropland may be enrolled in CRP and WRP combined, with no additional per county acreage limitation. This alternative benefits vegetation by allowing the most land to be enrolled in CRP among the action alternatives, but is more restrictive than the No Action Alternative, which does not limit additional acres only to CREP or Continuous CRP; however, this difference would not be substantial, since the total number of acres authorized for the program is still 32 million acres, and the rate at which existing contracts are expected to expire until FY 2012 would allow only a relatively small amount of additional acreage to be enrolled in the program. Alternative 1 would not likely change substantially the number of counties that would exceed acres beyond the 25 percent cap in comparison to the No Action Alternative. No significantly negative impacts to vegetation would occur under Alternative 1.

4.1.5.4 Alternative 2

Alternative 2 would enable a county to exercise its yes/no authority to exceed the 25 percent cap on county cropland being enrolled in both CRP and WRP at any one time under CREP and Continuous CRP signups, but up to a new limit of no more than 50 percent. Similar to Alternative 1, Alternative 2 would not likely change substantially the number of counties that would exceed acres beyond the 25 percent cap in comparison to the No Action Alternative. This

alternative would be more restrictive than either the No Action Alternative or Alternative 1, and thus would be potentially less beneficial for vegetation, but because of the 32 million acre program limit and the rate of attrition from expected contract expirations, the impacts to vegetation would not be significantly negative.

4.1.6 Provision 5 (Conservation Plan Management)

4.1.6.1 *Background/Methodology*

Mid-contract management activities include prescribed burning, mowing, thinning, disking, interseeding, and herbicide/pesticide application. These activities ensure conservation practices meet their intended purpose through maintaining the vegetative stand, reducing soil erosion, improving water quality, or providing wildlife habitat. Some conservation covers require prescribed burning to allow vegetation to propagate (e.g., grasses and longleaf pine), reduce unwanted vegetation including invasive and noxious weeds, prevent the succession of early stage vegetative stands from progressing (such as grasslands changing into shrubland or woodland), release nutrients in old plant residue, and reduce vegetation that competes with the desired plants for nutrients, light, and space to grow. Mowing and disking encourages plant diversity, and reduces accumulation of excess thatch. The latter impedes growth of desirable plants, makes interseeding and disking difficult, impedes the effective application of herbicides and pesticides where needed, contributes to catastrophic wildfire, and negatively affects habitat for certain wildlife. Thinning reduces competition and thusly increases the viability of tree stands, providing additional open areas for wildlife as well as opening the tree canopy, which allows for understory plants to grow. Interseeding assures continual vegetative cover and provides additional forage for wildlife. Herbicide and pesticide application reduces competition with the conservation cover. Grazing may help control invasives and the use of cloven animals helps turn and break up the soil, embedding seeds, among other benefits. Prescribed haying or mowing removes excess plant materials which can limit or inhibit areas of beneficial wildlife habitat, and sets back the stage of succession in grasslands. Grazing and haying are discussed further in Section 4.2.7. Potential impacts to vegetation through implementation of this provision's alternatives are analyzed qualitatively.

4.1.6.2 *No Action Alternative*

Under the No Action Alternative, management as stipulated in the Conservation Plan is expected to occur. Mid-contract management is required on contracts executed after FY2004 and is voluntary for contracts accepted before that year. Mid-contract management activities are specified by CP and can be exempted by States where the activities are not beneficial to the conservation cover. Many mid-contract management tasks are cost shared at 50 percent.

Some mid-contract management activities, if not conducted appropriately, could negatively impact vegetation, such as disking, prescribed burns, and activities that could threaten the health and viability of the established vegetative cover (e.g., excessively short mowing); however, adherence to NRCS Practice Standards for conducting Prescribed Burns (338), Windbreak and Shelterbelt Renovation (650), Early Successional Habitat Management (647), Forage Harvest Management (511), and Forest Stand Improvement (666) minimize the potential for negative impacts, which are short-term and localized. Some activities that benefit vegetative

stands, such as haying and grazing, may be conducted on authorized CRP lands under managed haying and grazing provisions during the middle years of the contract to achieve the same ends as other MCM techniques (e.g., prescribed burns), but they are not specifically MCM and not cost shared. Prior to enrollment, a site-specific environmental evaluation is conducted that would identify potential impacts to vegetation from these activities, and appropriate avoidance and minimization measures included in the Conservation Plan. These activities are carried out as specified in the Conservation Plan designed for the particular lands enrolled, inclusive of BMPs to minimize impacts on vegetation. Mid-contract management activities are designed to achieve the desired plant community in density and plant species diversity needed by the particular conservation practice, and assure its long-term health and viability is maintained.

Requiring MCM on an individual CP basis as a national standard imposes management that may not be applicable to local conditions, despite the exemptions afforded some States, and is difficult to administer. Since the goal of MCM is to preserve the health and viability of the conservation cover, and this protects vegetation in the long-term, continuation of existing provisions would not be significantly negative for vegetation. As MCM under current provisions is required for all CPs, the No Action Alternative has benefits similar to Alternative 2, but is more potentially beneficial than Alternative 1, where MCM is undertaken only if included in the Conservation Plan.

4.1.6.3 Alternative 1

Alternative 1 requires Conservation Plan management throughout the contract term and MCM tasks to be completed only if included in that plan. Mid-contract management would not be required on an individual CP basis. This alternative would be easier to administer than either the No Action Alternative or Alternative 2, and provides greatest flexibility for only undertaking management tasks as may be applicable to local conditions. Negative impacts to vegetation could occur if appropriate MCM is not included in the plan. As such, this alternative would be potentially less beneficial for vegetation than either the No Action Alternative or Alternative 2, where individual CPs require specific MCM be conducted. No significantly negative impacts to vegetation would occur from implementation of Alternative 1.

4.1.6.4 Alternative 2

Alternative 2 would require MCM on certain CPs as determined by individual State Technical Committees and MCM tasks if specified in the Conservation Plan. This alternative provides flexibility in requiring MCM in the Conservation Plan designed for a particular parcel of land, but also provides States the ability to specify MCM by CP as appropriate to their region. The benefits of Alternative 2 would therefore be similar to the No Action Alternative and Alternative 1. Implementation of Alternative 2 would not be significantly negative for vegetation.

4.1.7 Provision 6 (Harvesting CRP)

4.1.7.1 Background/Methodology

Haying and grazing can provide many benefits to conservation covers. Disturbance rejuvenates grasslands and increases plant health and vigor. The American tall grass prairie evolved under

grazing by wild ungulates (primarily, the American bison) (Holechek *et al.* 1989) and periodic large-scale disturbances (such as wildfire) occurring at a frequency of once every three to five years (Umbanhowar Jr. 1996). This has resulted in native plant physiology that is more resistant to grazing impacts including: higher proportion of stemless shoots, greater delay in elevation of apical buds, sprout more freely from basal buds after defoliation, and higher ratios of vegetative to reproductive stems (Holechek *et al.* 1989). Growth for these plants is actually stimulated by defoliation and will increase the vigor of the plant (*Ibid.*); however, heavy grazing can be detrimental to plants and plant communities. Timing of vegetative removal is important when assessing the response of a plant or plant community to grazing or haying. Most range plants can withstand defoliation during the dormant periods when plants are inactive; at the onset of growth as conditions will continue for growth; and during active growth. A critical time for plants is from floral initiation through the seed development post bloom, generally from mid-June to mid-July, when plants have high energy requirements for seed production (*Ibid.*). Warm season grasses typically grow from the spring warm up to late summer within a temperature range of 75-90°F; however they begin to decline in nutrition around mid-July as they shift from vegetative growth to reproductive growth. Since these plants shift from producing leaves to flowers and seeds, extensive grazing or greater cutting by haying after this shift could cause substantial cover loss that would not recover prior to frost. Cool season grasses initiate growth earlier in the spring compared to warm season grasses, and continue to grow while temperatures are on average between 40-75°F. When temperatures exceed 75°F they become semi-dormant, which typically occurs in the summer months around June. Reproductive growth for cool season grasses occurs prior to the semi-dormant period during the summer, typically around the end of June. If excessive removal of cool season grasses occurs at this time, the long-term health and viability of these plants would be negatively impacted. Cool season grasses will regrow in the fall, usually in September when temperatures decrease (provided there is adequate precipitation), and continue to grow until the first frost. In more arid western environments, significant negative impacts to the vegetative cover may occur from disturbance that is too infrequent, as this would allow sod forming grasses to outcompete native bunch grasses. A key variable in assessing wildlife habitat is vegetation structure. Components of habitat structure such as height, density (stems/unit area), canopy cover (percent ground cover, percent canopy cover, etc.), and diversity (heterogeneity) are important characteristics of habitat quality and functionality. As the number of plant species increase, the compositional and structural diversity increase, although structure can occur without a great deal of diversity. Periodic disturbance to grasslands can increase the structural diversity of vegetation.

If the vigor of a plant stand is reduced through grazing or haying, there is greater potential for desirable plants, identified by the conservation practice, to be replaced by undesirable species, such as woody plants in grasslands. Likewise, in some areas undesirable species encroach upon CRP lands. Haying to manage woody plant encroachment is practical if conducted every three years, or as identified by the Conservation Plan, otherwise they can become too large to allow future haying (Bidwell *et al.* 2002). Grazing alone cannot control woody plant encroachment without overgrazing the native plants (Bidwell *et al.* 2002; Weir *et al.* 2007). The recommended approach for controlling woody plant encroachment in most grasslands involves burning followed by grazing (Bidwell *et al.* 2002; Weir *et al.* 2007). Light to moderate defoliation

as discussed above would improve range plants abilities to compete against undesirable species.

Prescribed grazing has been proven an effective restoration technique for wildlife habitat (USFWS 2009d; Tesauro 2001). Prescribed grazing is the application of livestock grazing to accomplish specific vegetation management goals (Frost and Launchbaugh 2003). Grazing either promotes or reduces weed abundance at a particular site and usually is not successful on its own. When grazing treatments are combined with other control techniques, such as herbicides, severe infestations can be reduced and small infestations may be eliminated. Even very light prescribed grazing can effect positive plant community changes (Rinella and Hielman 2009). Using grazing animals may be particularly useful in areas where herbicides cannot be applied or are unaffordable.

Cattle, goats, and sheep are commonly used in prescribed grazing. Virtually all goat breeds, some sheep breeds, and a few cattle breeds are browsers of both herbaceous and woody vegetation (The Northeast Upland Habitat Technical Committee 2006). Table 4.1-1 provides a list of invasive and undesired rangeland species and the grazing species used to control them.

Table 4.1-1. Rangeland Invasives and Potential Grazing Species

	Cattle	Goats	Sheep
Forbs			
<i>Bull Thistle</i>	•	•	•
<i>Canada Thistle</i>	•	•	•
<i>Diffuse Knapweed</i>	•	•	•
<i>Hoary Cress (or Whitetop)</i>		•	•
<i>Kudzu</i>	•	•	•
<i>Leafy Spurge</i>		•	•
<i>Musk Thistle</i>	•	•	•
<i>Perennial Pepperweed</i>		•	•
<i>Russian Knapweed</i>		•	•
<i>Scotch Thistle</i>		•	•
<i>Sericea</i>	•	•	•
<i>Spotted Knapweed</i>		•	•
<i>Tansy Ragwort</i>	•		•
<i>Yellow Starthistle</i>	•	•	•
Woody Plants			
<i>Blackberries</i>		•	•
<i>Juniper Trees</i>		•	
<i>Multiflora Rose</i>		•	•
<i>Pine</i>		•	•
<i>Tamarisk</i>		•	
Grasses			
<i>Cheatgrass</i>	•	•	•
<i>Medusahead</i>	•	•	•

Source: Wilson *et al.* 2006

Cattle stomachs are well adapted to ferment fibrous material such as dormant grasses. Cattle will graze invasive grasses, can trample inedible weed species, and can incorporate native seeds into soil. Goats have narrow and strong mouths well designed for stripping individual

leaves from woody stems and for chewing branches. Sheep possess a narrow muzzle and a relatively large rumen (first stomach chamber where fibrous material is fermented) compared to their body size. Sheep selectively graze and are able to tolerate high fiber content. Their diets are generally dominated by forbs. Other species that have been used in prescribed grazing include horses, geese, and native ungulates.

Cattle prefer grazing on grasses. They are less selective and tend to graze uniformly. Because of their size, cattle have the potential to cause greater physical impacts to vegetation and soil than smaller browsers (i.e. sheep and goats). Cattle grazing has been found to be successful in eradication of kudzu and is currently utilized by CRP.

Goats prefer grazing on woody plants and forbs. They have been used to control leafy spurge, Russian knapweed, and toadflax (DCNR 2009). Because of their large livers compared to cattle and sheep, goats can more efficiently process plants that contain secondary compounds such as tannins or terpenes (Frost and Launchbaugh 2003) that other grazers cannot digest. Goats can control woody species because they can climb and stand on their hind legs, and will browse on vegetation other animals cannot reach (Walker 1994); however, this ability may impact planted or native trees if not protected. Goats additionally, tend to eat a greater variety of plants than sheep and can aid in the establishment of a planted forest riparian buffer (The Northeast Upland Habitat Technical Committee 2006).

Sheep prefer grazing on forbs and grasses. Sheep have been used successfully for the control of several rangeland weeds including leafy spurge, tall larkspur, tansy ragwort, spotted knapweed, kudzu, and oxeye daisy (Frost and Launchbaugh 2003; Olson and Lacey 1994). Potential impacts to vegetation through implementation of the provision Alternatives are analyzed qualitatively.

4.1.7.2 No Action Alternative

As described in Chapter 1, currently there are several forms of authorized harvest, haying, and grazing on CRP: Managed haying and grazing (including biomass), emergency haying and grazing, incidental grazing (gleaning), permissive grazing, and limited grazing for controlling kudzu. Generally these activities are not authorized during the State's PNS for ground nesting birds (Appendix C). Payment reduction assessments vary per type and are not assessed under certain conditions for limited grazing. Prescribed grazing for the control of invasive species is currently only allowed to control kudzu. Except for emergency haying or grazing, these activities can only occur at most once every three years, varying by State. Haying or grazing may only occur if included in the Conservation Plan. In addition, a site-specific environmental evaluation conducted on those particular lands proposed for enrollment in CRP would be conducted, and the potential impacts of haying and/or grazing on those lands would be assessed at that time and measures would be stipulated in the Conservation Plan to avoid or minimize potentially negative impacts. If haying or grazing of lands already enrolled in CRP are proposed, a resource inventory would be conducted that would identify any sensitive resources and compliance with relevant State or Federal environmental protection laws undertaken at that time.

In 2007, CCC and FSA initiated studying the impacts of changing the frequency of managed haying and grazing under the 2002 Farm Bill provisions in 13 Midwestern and western States. In some cases, changing the dates of the PNS is also being considered. The conclusions of the 13 Environmental Assessments (EAs) find that haying or grazing under both managed or emergency procedures have the potential to significantly negatively impact vegetation if the amount of forage removed is excessive and prolonged, or too many grazing animals compact the soil. In addition, the managed haying and grazing EAs found no significant negative impacts to vegetation occur from increasing the frequency of these activities from once every five or 10 years to once every three years. Rather, potentially significant impacts to vegetation could occur in settings with cool season grasses if haying or grazing occurs too early in midsummer; cutting dormant cool season grasses at this time could diminish the health and vigor of these plants. Warm season grassland plants shift from producing leaves to flowers and seeds in midsummer; extensive grazing or greater cutting by haying after this shift could cause substantial cover loss that would not recover prior to frost. Any action that impacts the health and vigor of the desired conservation cover would be significantly negative. Haying and grazing would not significantly impact vegetation if the established conservation practice provisions, standards, and guidelines are followed, and the Conservation Plan is adapted to resource conditions on the land just prior to engaging in either activity. Harvesting (haying) and routine grazing benefits the health and vigor of the vegetative cover.

The No Action Alternative results in a short-term, localized impact to vegetation by removing forage. Haying and grazing under current provisions would not indirectly increase soil erosion since it maintains vegetative cover and Conservation Practice Standard 511 Forage Harvest Management requires a minimum stubble height be retained to allow vegetation to recover by frost. Providing adequate rest between haying and grazing episodes is attained, NRCS Conservation Practice Standards that address potential negative impacts (e.g., Forage Harvest Management 511 or Prescribed Grazing 528) are implemented and haying or grazing is adjusted in response to resource conditions on the land just prior to undertaking these activities, then the long-term viability of the conservation cover is ensured. More importantly, haying and grazing, if adequately controlled, mimic the historic disturbance regimes that maintain early succession grasslands, resulting in healthier CRP grass stands that will continue in the long-term.

As discussed in Chapter 2, the amount of acreage actually hayed or grazed on CRP since authorization by the 2002 Farm Bill is fairly low. Under the No Action Alternative it would be unlikely that there would be more than minor changes to historical rates of hay production and grazing on CRP acres based on the existing constraints. As discussed in Section 4.11.7.2, current production levels are fairly small when compared to total production levels within the combined counties containing those CRP acres, and total production at the State level. It can be assumed that the potential negative effects to vegetation would remain minor. Currently prescribed grazing is limited to controlling kudzu only, thus continuation of current procedures is potentially less beneficial for vegetation than either of the action alternatives, as this tool would not be available to CRP participants. No significant negative impacts to vegetation are expected from continuation of existing provisions for haying and grazing.

4.1.7.3 *Alternative 1*

Under Alternative 1, haying and grazing would be continued on currently authorized CPs as currently authorized. Any change by States to the established PNS, period (timing) of harvest and routine grazing, length of these activities, and frequency of routine grazing and harvest requires individual analysis under NEPA by those State Technical Committees desiring such changes. Prescribed grazing for control of invasive plant species would not be authorized on CP23, CP23A, non-grass related CP25, CP27, CP31, and CPs 39-41. Additionally, if implemented, prescribed grazing for the control of invasive species would be allowed with no reduction of the annual rental rate when the prescribed control plan is included in the Conservation Plan.

The indirect and direct impacts of Alternative 1 to vegetation would be similar to the No Action Alternative and Alternative 2, except the action alternatives would allow prescribed grazing for control of invasive plants other than kudzu, potentially more beneficial to vegetation. Prescribed grazing for invasives can positively impact vegetation by reducing or removing competition by invasive species on native species. When not properly controlled, however, grazing or other actions of grazing animals, such as trampling, can cause substantial damage to vegetation and soils, and promote the introduction and spread of invasive plants. Overgrazing can reduce native plant cover, disturb soils, weaken native communities, and allow exotic weeds to invade (DCNR 2009). Additionally, livestock can disperse seeds that adhere to their coats as well as through passage through their digestive tract; however, through compliance with NRCS Conservation Practice Standard 528, Prescribed Grazing, these impacts would be avoided or minimized.

In general, the specific weed and desirable native and introduced plants will determine the number and species of animal grazers and the duration and frequency of prescribed grazing. A grazing plan developed within the Conservation Plan would identify situations where prescribed grazing is desirable and be tailored to fit the specifics of the site (DCNR 2009) including grazing schedules, stocking rates, and choice of animals. With development of a grazing plan in conjunction with provisions, standards, and guidelines, impacts to vegetation would be beneficial in the long-term.

Requiring additional State-level NEPA analysis of changes to the PNS, timing, and frequency of harvesting and routine grazing ensures potential negative environmental impacts would be determined and addressed on a local scale. A site-specific environmental evaluation would be conducted for particular lands proposed for enrollment in CRP and the potential impacts from managed harvest and routine grazing would be assessed at that time. No significant negative impacts to vegetation would occur under this alternative if the Conservation Plan is followed and adapted to resource conditions just prior to haying or grazing, the CPs authorized for harvest or routine grazing do not change, and State-level NEPA would be completed for any proposed changes to the PNS, timing, and frequency of these activities prior to implementation.

4.1.7.4 *Alternative 2*

Alternative 2 provisions are the same as Alternative 1, but differ in that changes to CPs authorized for managed harvesting or routine and prescribed grazing would be permitted under Alternative 2; however, the changes to CPs would require additional NEPA analysis by those

State Technical Committees desiring such changes. Impacts to vegetation would not be significant if haying and grazing activities are completed in accordance with existing standards, provisions, and guidelines, and the parameters for conducting these activities are stipulated in the Conservation Plan that is adjusted to resource conditions on the land prior to conducting these activities. State-level NEPA analysis prior to approving changes in which CPs are authorized for harvesting or routine grazing, in addition to any changes in the current PNS, timing, or frequency of harvesting or grazing established for individual States, would ensure potential negative impacts to vegetation would be addressed on a local scale. Prescribed grazing for control of invasive plant species would be implemented the same as described for Alternative 1. With development of a grazing plan in conjunction with provisions, standards, and guidelines, no significant negative impacts to vegetation would occur. Alternative 2 impacts would be very similar to Alternative 1, but slightly more beneficial than the No Action Alternative, which only allows prescribed grazing for the control of kudzu.

4.1.8 Provision 7 (NASS Cash Rental Rates)

4.1.8.1 Background/Methodology

The analysis of the potential impacts to vegetation from implementation of the alternatives considered below is qualitative. CRP payment structure provides incentives or disincentives to enroll in the program. In general, retiring land from agricultural production and establishing vegetative covers benefits vegetation by reducing soil erosion and improving water quality, thereby ensuring long-term viability of the conservation cover.

4.1.8.2 No Action Alternative

Under the No Action Alternative, the existing annual rental payment rules with a soil productivity adjustment as described in Chapter 1 would continue to be implemented. Furthermore, targeted signup incentives (for CREP, non-CREP CCRP, and initiatives) would remain unchanged. In accordance with procedure that became effective October 1, 2009 maintenance incentives remain the same for contracts executed before that date, but for contracts executed after that date, maintenance incentives are reduced to zero for General Signup practices (CRP-644). Under the existing program of 32 million acres, about 85 percent of CRP acres are enrolled under General Signup and 15 percent under Continuous (Targeted) Signups. Enrollment of agricultural lands in CRP under either General or Continuous (Targeted) Signups would be equally beneficial to vegetation. Under the existing program, benefits to vegetation would continue to accrue from FY 2010 to FY 2012, in largely the same places: any geographic shifts in the distribution of enrollments would more likely change in response to scheduled expiring acres. Furthermore, as discussed in Section 4.11.8.4, enrollment goals under both General and Targeted Signups would likely still be met utilizing current rates. The impacts of the No Action Alternative on vegetation would be similar to those of Alternative 1, as the socioeconomic analysis has determined both General and Targeted Signup goals similar to current levels would likely be met under Alternative 1. The No Action Alternative would be more beneficial to vegetation than Alternative 2; the latter would utilize NASS cash rental rates for all signups without additional incentives, which could result in falling short of current Targeted Signup

enrollment goals. No significant negative impacts to vegetation would occur from the selection of the No Action Alternative.

4.1.8.3 Alternative 1

For new General Signup contracts after December 1, 2009, updated NASS market dry-land and irrigated rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) would be increased to ensure program acreage targets are achieved, but current rental rate rules would apply to these signups. Under Alternative 1, for General Signups after December 1, 2009, annual rental payment rates would be determined by the updated NASS market dryland and irrigated cash rental rates with soil productivity adjustments. Incentives for Targeted Signups may be increased to ensure acreage targets would be achieved, but existing CRP rental rates would apply under this signup. Maintenance payments would be reduced to zero for General Signups in accordance with procedures effective October 1, 2009. Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur, but overall participation in the program would not substantially decrease. As determined by the socioeconomic analysis, both General and Targeted Signup goals similar to current levels would likely be met under Alternative 1. The impacts of Alternative 1 on vegetation would thus be similar to the No Action Alternative. Since no additional incentives would be offered under Alternative 2 to facilitate Targeted Signup enrollment goals would be met, Alternative 1 would be slightly more beneficial than Alternative 2. No significant negative impacts to vegetation would occur from the implementation of Alternative 1.

4.1.8.4 Alternative 2

Under Alternative 2, for both General and Targeted Signups after December 1, 2009, annual payment rates would be determined by the updated NASS market dryland and irrigated rental rates with soil productivity adjustments. Incentives for Targeted Signups would remain the same as the current program. Maintenance payments would be reduced to zero for General Signups in accordance with procedures effective October 1, 2009. Similar to Alternative 1, Alternative 2 would be anticipated to result in a geographic shift in the distribution of CRP acres. Since no additional incentives would be offered to assure program acreage goals would still be met, this alternative in comparison to the others considered has more potential negative impacts for vegetation. As detailed in Section 4.11.8.4 Socioeconomic Resources, overall participation in the General or Targeted Signups would not decrease substantially, assuming a 4.5 million acre Targeted Signup goal, which is the existing condition. No significant negative impacts to vegetation would occur from implementation of Alternative 2.

4.1.9 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives)

4.1.9.1 Background/Methodology

The potential impacts to vegetation of the alternatives proposed to address this provision are qualitatively analyzed. Providing incentives to enroll agricultural lands in CRP benefits vegetation through soil erosion reduction, improved water quality, preservation of native species, and increased vegetative diversity.

4.1.9.2 *No Action Alternative*

Section 1244(a) Beginning Farmers and Ranchers currently provides for incentives to be offered to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs. Continuation of the ability to offer incentives stands to benefit vegetation since more participation in the program by the affected populations would take marginal lands out of agricultural production and establish long-term vegetative covers; however, since both the action alternatives also expand to offer incentives to socially disadvantaged farmers and ranchers as well, both of these alternatives would potentially benefit vegetation more than the No Action Alternative. Additionally, as discussed in Chapter 3.12 Environmental Justice, since the pool of farmers and ranchers that meet the definition of socially disadvantaged is relatively small, no significant negative impacts to vegetation would occur from implementation of the program as currently configured.

4.1.9.3 *Alternative 1*

Alternative 1 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for cost share rates at least 25 percent above otherwise applicable rates (up to 90 percent), and advance payments of up to 30 percent of the amount determined for the purchase of materials and services. The USDA budget would require PAYGO offset which could potentially reduce services for other existing or potential participants in CRP. Alternative 1 provides the most incentive for the affected populations to participate in the program, enhancing the potential of reaching the full enrollment of authorized acres in CRP; however, given the relatively small population that would qualify for these incentives, the impact of this alternative on vegetation is not substantially different from the No Action Alternative or Alternative 2. No significant negative impacts to vegetation would occur under Alternative 1.

4.1.9.4 *Alternative 2*

Alternative 2 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for Signup Incentives, most likely for CPs that currently are eligible for SIPs. Under this alternative, the USDA budget would require a PAYGO offset, which could potentially reduce services for other existing or potential participants in CRP. This alternative would not provide as much incentive to enroll as Alternative 1, but is more beneficial than the No Action Alternative, which does not extend benefits to socially disadvantaged farmers and ranchers; however, as discussed above, the size of the affected population and potential associated acreage would be relatively small; thus, no significantly negative impacts to vegetation would occur from implementation of Alternative 2.

4.1.10 Provision 9 (Pollinator Conservation)

4.1.10.1 *Background/Methodology*

Pollinator species include but are not limited to butterflies, moths, bees and wasps, beetles and flies, bats, hummingbirds, and mice. Pollinators include generalists that forage from a range of plants and specialists that are limited in their sources for nectar and pollen. Pollinators have two basic habitat needs: a diversity of flowering plants across the spring, summer, and fall seasons and egg-laying or nesting sites (NRCS 2009c).

Pollinator habitat is maximized on sites greater than one-half acre in size with a diversity of plants and greater than 45 percent forb cover (NRCS 2009d). The Iowa NRCS suggests establishing pollinator habitat with a minimum of 11 species including at least three flowering species from each of the three bloom periods (spring, summer, and fall); this will provide nectar and pollen food resources for pollinators throughout the season (*Ibid.*). Early spring-flowering plants provide an important food source for bees emerging from winter hibernation, and late fall-flowering plants help bees build up their energy reserves before entering winter dormancy (Xerces Society for Invertebrate Conservation [Xerces] 2009). Pollinator habitat should receive little to no disturbance, including the turning of machinery or driving within pollinator habitat (NRCS 2009d). Pesticide and herbicide use on or near a pollinator planting can have significant negative effects on pollinator populations (*Ibid.*).

Management techniques, such as grazing, mowing, prescribed fire and insecticides may be used to maintain diversity within pollinator habitat (NRCS 2009d); however, these techniques can be both beneficial and detrimental to pollinators, and no single management technique benefits all pollinators (Black *et al.* 2007). It is suggested by Xerces that prior to any implementation of management techniques a biological inventory be conducted to identify important plant resources and pollinator habitat for generalist and specialized pollinator species (*Ibid.*). To avoid negative impacts from management techniques, no more than one-third to one-half of the stand should be mown, hayed, or burned in a given year, with such management not occurring more frequently than every three to six years (NRCS 2009d). Management techniques should be performed during invertebrate dormant season (November - March) to promote forb diversity and to reduce risks to pollinators and their nests (*Ibid.*). Furthermore, disturbance of portions of a site in multi-year cycles provides a source from which pollinators can spread (Black *et al.* 2007).

Many agricultural producers may already have an abundance of habitat for native pollinators (NRCS 2009c). Marginal lands such as field borders, hedge rows, sub-irrigated areas, and drainage ditches offer both nesting and foraging sites. Wood lots, conservation easements, farm roads, and other untilled areas can also provide habitat. Many times poor quality soils, unfit for crop production, may be useful as pollinator habitat (*Ibid.*).

Potential impacts to vegetation through implementation of the provision alternatives are analyzed qualitatively. In general, any provision that would convert land from agricultural to conservation uses would be considered a positive impact on vegetation. Long-term benefits to vegetation would be achieved by reducing soil erosion and improving water quality, establishing native plants resulting in increased biological diversity, and ensuring long-term viability of the conservation cover.

4.1.10.2 No Action Alternative

Currently only general methods to reduce impacts to pollinators are offered in NRCS practice standards and technical guides (e.g., spot treatment of herbicides and pesticides, not harvesting at peak flowering). In addition, SAFE projects that target benefiting pollinators may also be implemented. Many methods to benefit pollinators have beneficial impacts on vegetation, such as spot application of herbicides and pesticides, diverse plantings, and successive flowering over the entire season; however, management activities to maintain the health and vigor of

certain types of vegetative stands that ultimately benefit pollinators have the potential to negatively impact vegetation if not carefully applied. Adherence to NRCS practice standards for this type of management, and tailoring the Conservation Plan to the individual lands enrolled, should adequately protect vegetation. No significant negative impacts to vegetation are expected from current procedures concerning pollinators.

4.1.10.3 Alternative 1

Under Alternative 1 a new Pollinator Habitat Conservation Practice would be created with a goal of up to five percent of enrolled acres into new pollinator friendly habitat. In addition, existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators by including plant species beneficial for pollinators at specified composition rates, and other such practices. These practices would provide a variety of plant species which would lead to an increase in vegetation diversity. No significant negative impacts to vegetation would occur under Alternative 1.

4.1.10.4 Alternative 2

Under this alternative only the existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators. As such, the impacts of this alternative to vegetation would be similar to those of the No Action Alternative. Alternative 2 would be potentially less beneficial than Alternative 1, which would enroll up to 1.6 million acres in a new CP that otherwise might be enrolled in practices that do not substantially establish vegetation; however, as discussed above, the degree of this impact to vegetation would not be substantially different than either the No Action Alternative or Alternative 1. No significant negative impacts to vegetation would occur from implementation of Alternative 2.

4.2 BIOLOGICAL RESOURCES: WILDLIFE

4.2.1 Significance Criteria

Impacts to wildlife resources would be considered significant if implementation of an action or program resulted in reducing wildlife populations to a level of concern.

4.2.2 Provision 1 (National Conservation Initiatives)

4.2.2.1 Background/Methodology

Potential impacts to wildlife through implementation of the provision alternatives are analyzed qualitatively. In general, any action that would convert land from agricultural to conservation uses would be considered a positive impact on wildlife. Enrollment in CRP potentially ensures long-term benefits to wildlife and their habitat through soil erosion reduction, improved water quality, and creation of terrestrial and aquatic habitat that maximizes their survival. Long-term benefits to wildlife would be achieved by providing a diverse conservation cover which would provide food, shelter, or breeding and nesting habitat.

4.2.2.2 *No Action Alternative*

National Conservation Priority Areas and payment incentives designed to encourage enrollment in these areas would continue as currently configured under the No Action Alternative. In addition, CREPs and initiatives implemented since the 2002 Farm Bill would also continue unchanged under this alternative. All Initiatives help improve wildlife habitat and therefore benefit wildlife both directly and indirectly. Initiatives that focus on wildlife will have the greatest direct benefit to wildlife by restoring or creating habitat. These wildlife benefits would be 10 to 15 years in duration or longer if contracts are extended.

Continuation of the current program would maintain benefits to wildlife; however, these benefits would likely be less than those achievable under Alternative 1, which includes an initiative addressing critical wildlife habitat on a regional basis. The benefits of this alternative are also not very different from those attained by Alternative 2, which continues current procedures, but includes a reduction in wetland initiatives.

4.2.2.3 *Alternative 1*

This alternative would address National CPAs, State, and to a certain extent regional conservation initiatives as currently implemented, but in addition, would offer three new national conservation initiatives under Continuous Signup: the Water Resource Protection Initiative, Highly Erodible Land Initiative, and Regional Restoration of Critical Wildlife Habitat Initiative. Implementation of the new initiatives requires PAYGO offset in the USDA budget. Of these new national conservation initiatives proposed for this alternative, only the Regional Restoration of Critical Wildlife Habitat Initiative is likely to have a substantial impact on wildlife. Restoration of up to 250,000 acres of critical habitat on a regional scale has the potential to substantially address negative impacts to a particular species at the population level, potentially leading to recovery that keeps it from listing on State or Federal threatened and endangered registers. The Water Resource Protection Initiative protects municipal water resources and would result in direct and indirect benefits to wildlife by reducing water use by municipal and agricultural acreage, which in turn would reduce downstream pollutants that may harm fish and other water and land dwelling animals and habitat. The Highly Erodible Land Initiative would reduce agricultural uses of HEL with an EI greater than 50. Removing highly erodible land from agricultural production would result in direct and indirect beneficial impacts to wildlife including establishing new habitat, and a reduction of soil erosion and sedimentation which can cause loss of aquatic habitat and suffocation of aquatic wildlife. Since the costs of these initiatives would require offset in the USDA budget under PAYGO, total gains may be tempered if other program services would be reduced. Alternative 1 would be more beneficial for wildlife than the No Action Alternative or Alternative 2, but given the small amount of acreage set aside for this initiative, not substantially so. No significant negative impacts to wildlife would occur from implementation of Alternative 1.

4.2.2.4 *Alternative 2*

Under Alternative 2, no changes to existing National CPAs, CREPs, or national conservation initiatives would occur, except the wetlands initiative would be reduced. Establishing floodplain wetlands can reduce soil erosion along water banks, as wetlands reduce the velocity of and

store excess runoff, diminishing downstream flooding. This alternative would reduce aquatic wildlife habitat but could increase terrestrial wildlife habitat by shifting acreage to other practices benefiting wildlife. The impacts of Alternative 2 on wildlife would be similar to the No Action Alternative, but less beneficial than Alternative 1, which would restore critical habitat on a regional scale; however, the difference would not be substantial, since the amount of targeted acreage under Alternative 1 would be relatively small, and the acreage devoted to wetland initiatives is relatively small. Implementation of Alternative 2 would have no significant negative impacts to wildlife.

4.2.3 Provision 2 (Maximum Enrollment)

4.2.3.1 *Background/Methodology*

All acres enrolled in CRP help improve wildlife habitat and therefore benefit wildlife both directly and indirectly. Conservation Practices that focus on wildlife will have the greatest direct benefit by restoring or creating habitat, while CPs such as CP21 (Filter Strips) indirectly benefit wildlife through an increase in habitat quality. Abundance of many grassland birds is associated with higher amounts of CRP in the landscape (Riffell *et al.* 2008). Additionally, population trends of several species of conservation concern (e.g., Henslow's sparrow, grasshopper sparrow) are more positive in landscapes with higher amounts of CRP (Herkert 1998, 2007a, b). Henslow's sparrow habitat is characterized by tall, dense grass with a well-developed litter layer and a relatively high coverage of standing dead vegetation, a condition more likely to occur on mature CRP with no management that sets back succession. Habitat area is considered a limiting factor for Henslow's sparrow; only large grasslands support persistent populations (USFWS 1996). The biggest threat facing Henslow's sparrows in Wisconsin is the loss of CRP grasslands (Cooper 2007). Henslow's sparrows are classified as a state threatened or endangered species in 16 states. Recent population increases through CRP have prompted some states (Illinois and Minnesota) to consider downlisting their status (*Ibid.*). The large benefit of CRP to grasshopper sparrows is related to its use of grassland with moderate grass heights, a limited habitat type in the shortgrass prairie. This makes CRP, as currently administered and managed, an important source of habitat for the species. Enrollment of acres in practices with substantive wildlife habitat creation is beneficial, whereas any reduction in acres enrolled in the program could have negative impacts on wildlife, as lands would potentially remain in agricultural production.

4.2.3.2 *No Action Alternative*

This alternative apportions 27.5 million acres to CRP General Signup and Targeted Signups (Continuous) acreage to 4.5 million acres of the total 32 million acres authorized by the 2008 Farm Bill in FY 2010. Under the No Action Alternative, the balance between the General and Continuous sign-ups changes slightly from FY 2009 levels toward Continuous Sign-up priorities, most notably increasing acres for Farmable Wetlands, SAFE, and Initiatives. Regular Continuous practices are scheduled at two million acres. General Signup includes larger overall land areas which may provide more continuous habitat compared to certain strip Targeted Signup practices; however, Targeted Signup includes highly environmentally sensitive lands and includes high priority practices which may provide greater environmental benefit when enrolled. For example, since 1992, net increases of about two million additional ducks per year

were produced in the prairie pothole region (PPR) of North Dakota, South Dakota, and northeastern Montana. This represents an estimated 30 percent increase in duck production compared to the same area without the CRP cover on the landscape (Reynolds *et al.* 2007). Further research into wildlife benefits may identify areas where targeted implementation would be of the greatest benefit to wildlife species (Haufler and Ganguli 2007). No significant negative impacts to wildlife would occur from the No Action Alternative; however, Alternative 1 would provide more acreage under Targeted Signup and thus potentially greater benefits to wildlife. The No Action Alternative is more beneficial to wildlife than Alternative 2, which would reduce the CRP to 24 million acres.

4.2.3.3 *Alternative 1*

Alternative 1 would allocate 24 million acres to General Signup and eight million acres to Targeted Signup. Acres devoted to SAFE and Initiatives that directly provide wildlife habitat would be proportionately increased under this alternative for a combined total of 1.75 million acres. The overall increase in Targeted Signup acreage would provide greater potential for enrollment of environmentally desirable land and high priority practices which may provide greater wildlife benefits when enrolled. Alternative 1 would be potentially more beneficial for wildlife than the No Action Alternative, since more CPs directly benefiting targeted wildlife species would be eligible for enrollment. Alternative 1 would be more beneficial to wildlife than Alternative 2, which would reduce CRP by eight million acres and would allot a greater percentage to General Signup than Targeted Signup.

4.2.3.4 *Alternative 2*

This alternative would implement an across the board reduction in CRP acres from present levels to no more than 24 million acres in the program, with 20 million acres apportioned to General Signup and four million acres apportioned to Targeted Signups. This would be eight million acres less than either the No Action Alternative or Alternative 1. The apportionment of the acres among General Signup and Targeted Signups would be similar to that of the No Action Alternative. While any conversion of land from crop production would benefit wildlife species, the loss of CRP acreage would result in the net loss of potential wildlife habitat. In some regions, CRP is making a substantial contribution to population goals for grassland birds and waterfowl (McLachlan *et al.* 2009; Reynolds *et al.* 2007) and the conversion of eight million acres back to agricultural lands would result in negative impacts to grassland species. Overall, the reduction of eight million acres proposed by this alternative would be negative for wildlife; however, the relative impact of returning these acres to agricultural production on a national scale would be small, considering there are currently about 406 million acres of active cropland in the lower 48 States (NASS 2009a). Implementation of Alternative 2 could have significantly negative impacts on wildlife at the local level, for example, at the county level, or in States that have a large amount of acreage leaving the program due to contract expirations scheduled to occur from FY 2010 to FY 2012. Alternative 2 would be less beneficial for wildlife than the other alternatives that maintain program acreage at the authorized 32 million acre level.

4.2.4 Provision 3 (Alfalfa Crop History)

4.2.4.1 *Background/Methodology*

Benefits to wildlife from enrolling in CRP would be achieved by providing habitat that otherwise would not exist, or by improving such habitat. Alfalfa is a cool season perennial legume and can remain productive from four to 10 years or more depending on variety and climate (Jennings 2001). The plant grows to a height of up to three feet and has a deep root system sometimes stretching to 15 feet deep. Alfalfa uses four to six inches more soil moisture than other crops throughout its growth (Kansas Rural Center 1998). Alfalfa exhibits autotoxicity, a process in which established alfalfa plants produce chemicals in the soil which reduce establishment and growth of new alfalfa in the area, to reduce competition. As such, it is difficult to seed existing or killed stands of alfalfa due to buildup of toxins in soil (Jennings 2001); this is why crop rotation is practiced on alfalfa fields. When the alfalfa stand is rotated (usually with corn), the farmers may only leave it out of alfalfa for six months to two years before returning it to alfalfa (Schlegel 2009). Lands planted to alfalfa or multiyear grasses are habitat for grassland birds and can be part of a conservation plan for these species, depending on how the pastures are managed (Sample and Mossman 1997). In contrast, alfalfa hay fields are considered ecological traps because intensive agricultural management during the breeding season results in extremely low reproductive success (Frawley 1989; Bollinger *et al.* 1990; Frawley and Best 1991; Best *et al.* 1997; Perlut *et al.* 2006). Enrollment of alfalfa fields in CRP potentially ensures long-term benefits to wildlife and their habitat through soil erosion reduction, improved water quality, and creation of terrestrial and aquatic habitat that maximizes their survival.

4.2.4.2 *No Action Alternative*

Lands planted in alfalfa in rotation with multi-year grasses and other legumes in any rotation practice would continue to be enrolled in CRP under the No Action Alternative. Continuation of the program as established would not offer operators or owners the opportunity to include lands planted in alfalfa alone in rotation with another agricultural commodity during the period of 1996 to 2001. Removal of alfalfa from production and enrollment in conservation covers positively benefits wildlife by both providing more natural habitat and reducing demand on local water supplies if the fields are irrigated. The No Action Alternative would positively benefit wildlife by allowing enrollment of new lands to take place. Under the action alternatives, alfalfa alone in rotation with an eligible commodity may qualify for the program, which could conceivably result in more acres being able to qualify for CRP, but this may be offset by the new provision of having to meet a particular rotation interval rather than any rotation as permitted by current procedures. The number of acres enrolled in the program under this provision that also meets the HEL and other land eligibility requirements is not known, but is relatively low. No significant negative impacts to wildlife would occur from continuation of the existing provisions.

4.2.4.3 *Alternative 1*

Alternative 1 would expand CRP crop history requirements to include lands planted in alfalfa alone in rotation with an agricultural commodity at an eight year rotation interval (six years alfalfa and two years eligible commodity). The rotation must have occurred within 2002 to 2007. This would enable additional agricultural lands to be eligible to serve conservation purposes

without increasing or decreasing the overall number of acres authorized for enrollment. Inclusion of this land in CRP therefore potentially ensures long-term benefits to wildlife through providing new habitat. Alternative 1 would require a shorter rotation interval than Alternative 2, which would be easier for operators to meet. On the one hand, Alternative 1 would potentially qualify less land than the No Action Alternative, which permits any rotation, but may also qualify more land than the No Action Alternative, since it would allow alfalfa alone in rotation with an eligible commodity to meet crop history requirements. As such, the provision would have negligible impacts on wildlife due to the limited number of acres available to enroll under the 32 million acre cap from now until FY 2012. No significant negative impacts to wildlife would occur from implementation of Alternative 1.

4.2.4.4 *Alternative 2*

Alternative 2 would expand CRP crop history requirements to include lands planted in alfalfa alone in rotation with an agricultural commodity at a 12 year rotation interval (10 years alfalfa and two years commodity). The rotation must have occurred within 2002 to 2007. This would enable additional agricultural lands to be converted to serve conservation purposes without increasing or decreasing the overall number of acres authorized for enrollment. Inclusion of this land in CRP therefore potentially ensures long-term benefits to wildlife through increased habitat creation. While Alternative 2 would provide benefits to wildlife similar to the other alternatives considered this alternative requires a longer rotation interval which would be more difficult to meet; however, the impact to wildlife would not be significantly negative due to the small number of acres available to enroll under the program acreage cap.

4.2.5 Provision 4 (County Acreage Limitation Exception)

4.2.5.1 *Background/Methodology*

Limiting acreages for enrollment ultimately limits wildlife benefits; however, any new CRP enrollment potentially ensures long-term benefits to wildlife and their habitat through soil erosion reduction, improved water quality, and creation of terrestrial and aquatic habitat that maximizes their survival.

Potential impacts to wildlife through implementation of the alternatives considered for this provision are analyzed qualitatively. In general, any alternative that would remove land from agricultural use and establishes long-term conservation covers would be considered a positive impact on wildlife. Studies have shown areas with high amounts of CRP can be substantially beneficial to certain species of wildlife. For example, Sharp-tailed grouse (*Tympanuchus phasianellus*) utilize agricultural fields and feed on waste grain and associated insects; however, their main habitat consists of high mountain shrub-grassland community and associated edges which include shrubs and small trees. Conservation Reserve Program lands support sharp-tailed grouse habitat and provided thousands of hectares of nesting and brood-rearing habitat resulting in increased populations during the late 1980s and early 1990s (Connelly *et al.* 1998).

4.2.5.2 *No Action Alternative*

Currently, no more than 25 percent of a county's cropland may be enrolled in CRP and WRP, except when it is determined there would not be an adverse effect to the local economy and

operators are having difficulty complying with soil conservation measures for actively worked lands, and excepting shelterbelt and windbreak practice acres. Currently there is not an upward limit on acreage in excess; however, the authority to enroll no more than 32 million acres in the program still applies, and any limitations on the allotment of acres for certain CPs or initiatives per State would not be waived. Currently, 24 counties have 25 percent or more of cropland enrolled and none have more than 50 percent. Allowing more lands to be enrolled in the program potentially takes land out of agricultural production and would benefit wildlife. Implementation of the No Action Alternative benefits wildlife similar to that expected under Alternative 1, but would realize more benefits than Alternative 2, which except for additional acreage enrolled under CREP or Continuous Signup, would cap additional CRP and WRP combined acreage at no more than 50 percent of a county's cropland. No significant negative impacts to wildlife would occur from continuation of the existing provision.

4.2.5.3 Alternative 1

Under Alternative 1, a county may exercise its yes/no authority to allow additional acreage enrolled under CREP or Continuous CRP beyond the cap, which stipulates no more than 25 percent of a county's cropland may be enrolled in CRP and WRP combined, with no additional per county acreage limitation. This alternative would benefit wildlife by allowing the most land to be enrolled in CRP among the action alternatives, but is more restrictive than the No Action Alternative, which does not limit additional acres only to CREP or Continuous CRP; however, this difference would not be substantial, since the total number of acres authorized for the program is still 32 million acres, and the rate at which existing contracts are expected to expire until 2012 would allow only a relatively small amount of additional acreage to be enrolled in the program. Alternative 1 would not likely change substantially the number of counties that would except acres beyond the 25 percent cap in comparison to the No Action Alternative. No significantly negative impact to wildlife would occur under Alternative 1. Compared to the 50 percent Alternative 2 cap, Alternative 1 would provide greater potential benefit to wildlife.

4.2.5.4 Alternative 2

Alternative 2 would enable a county to exercise its yes/no authority to exceed the 25 percent cap on county cropland being enrolled in both CRP and WRP at any one time under CREP and Continuous CRP signups, but up to a new limit of no more than 50 percent. Similar to Alternative 1, Alternative 2 would not likely change substantially the number of counties that would except acres beyond the 25 percent cap in comparison to the No Action Alternative. This alternative would be more restrictive than either the No Action Alternative or Alternative 1, and would be potentially less beneficial for wildlife, but because of the 32 million acre program limit and the rate of attrition from expected contract expirations, the impacts to wildlife would not be significantly negative. For example, even in areas where additional excepted acres have currently contributed to Sharp-tailed grouse habitat and increased population numbers operating under current procedures that have no additional cap, no counties have excepted more than an additional 50 percent of a given county's cropland acreage. No significant negative impacts to wildlife would occur under Alternative 2.

4.2.6 Provision 5 (Conservation Plan Management)

4.2.6.1 *Background/Methodology*

Mid-contract management (MCM) activities include prescribed burning, mowing, thinning, disking, interseeding, and herbicide/pesticide application. Without disturbance, as CRP fields age, grasslands become sod bound and are of less value to wildlife for nesting and brood rearing cover (Iowa State 2009). A study by Iowa State found that use by grassland birds increases for the first three to four years after vegetation is established; however, after year five, the value of the vegetation for nesting and brood cover by these grassland birds and other wildlife steadily decreases (*Ibid.*) whereby the habitat becomes more beneficial for other species (e.g., Brewer's sparrow and sage grouse) (Schroeder and Vander Haegen 2006). Management of plant communities is especially beneficial for species with small home ranges; the smaller the home range the more important it is to provide all life cycle habitat requirements in a small area (NRCS 2009b).

Some conservation covers require prescribed burning to allow vegetation to propagate (e.g., grasses and longleaf pine), reduce unwanted vegetation, release nutrients in old plant residue, and provide open areas required by some wildlife species as well as allow room for forbs and/or planted legumes and wildflowers to grow. Mowing and disking encourages plant diversity and provide habitat and food resources for wildlife. Thinning reduces competition which increases the viability of tree stands and provides additional open areas for wildlife in addition to opening the tree canopy which allows for understory plants to grow. Interseeding provides additional forage for wildlife. Herbicide and pesticide application reduces competition with the conservation cover which in turn benefits wildlife. While not authorized specifically as mid-contract management activities, prescribed grazing may help control invasive plants with a lesser amount of herbicides which may harm wildlife through ingestion. Mowing or haying removes excess plant materials which can limit or inhibit areas of beneficial wildlife habitat. Prescribed grazing and haying are discussed further in Section 4.2.7.

4.2.6.2 *No Action Alternative*

Under the No Action Alternative, management as stipulated in the Conservation Plan is expected to occur. Mid-contract management is required on all CPs for contracts executed after FY 2004 and is voluntary for contracts accepted before that year; it is currently cost shared at 50 percent. Mid-contract management activities can be exempted by States where the activities are found to be not beneficial to the conservation cover. This Alternative requires MCM under National level supervision. Before lands are enrolled, a site-specific environmental evaluation will be completed that identifies environmental resources that may be affected by the proposed CP including MCM activities to improve resources on the CRP lands, and steps taken to avoid, minimize, or mitigate potentially negative effects.

Wildlife species react differently to mid-contract management activities. For example grassland bird species may require different heights of grass as their optimal habitat (e.g., killdeer prefer very short vegetation height and sedge wren require tall grass heights). Some mid-contract management activities can potentially cause short-term impacts to wildlife, such as disking, prescribed burns, and activities that could threaten the health and viability of the established

vegetative cover (e.g., excessively short mowing); however, adherence to NRCS Practice Standards for conducting Prescribed Burns (338), Windbreak and Shelterbelt Renovation (650), Early Successional Habitat Management (647), Forage Harvest Management (511), and Forest Stand Improvement (666) minimize the potential for these short-term, localized negative impacts. Mid-contract management activities are designed to achieve the desired plant community in density and plant species diversity needed by the targeted wildlife species. Mid-contract management activities are generally prohibited during the PNS (Appendix C) and may be restricted to only part of the CRP field habitat (e.g., allowing disking on no more than 50 percent of parcel) to provide a variety of vegetation heights and intact habitat within the field at any particular point in time.

Requiring mid-contract management on an individual CP basis as a national standard imposes management that may not be applicable to local conditions, despite the exemptions afforded some States, and is difficult to administer. Since the goal of MCM is to preserve the health and viability of the conservation cover, and this maintains wildlife habitat in the long-term, continuation of existing provisions would not be significantly negative for wildlife. As MCM under current provisions is required for all CPs, the No Action Alternative has benefits similar to Alternative 2, but is more potentially beneficial than Alternative 1, where MCM would only be undertaken if included in the Conservation Plan.

4.2.6.3 Alternative 1

Alternative 1 would require Conservation Plan management throughout the contract term and MCM tasks to be completed only if included in that plan. Mid-contract management would not be required on an individual CP basis. This alternative would be easier to administer than either the No Action Alternative or Alternative 2, and would provide the greatest flexibility for only undertaking management tasks as may be applicable to local conditions. Negative impacts to wildlife could occur if appropriate MCM is not included in the plan, but this would be unlikely. As such, this alternative would potentially be less beneficial for wildlife than either the No Action Alternative or Alternative 2, where individual CPs would require specific MCM be conducted. No significantly negative impacts to wildlife would occur under Alternative 1.

4.2.6.4 Alternative 2

Alternative 2 would require MCM on certain CPs as determined by individual State Technical Committees and MCM tasks if specified in the Conservation Plan. This alternative would provide both flexibility in requiring MCM in the Conservation Plan designed for a particular parcel of land, but also would provide States the ability to specify MCM by CP as appropriate to their region. The benefits of Alternative 2 would therefore be similar to the No Action Alternative and Alternative 1. Implementation of Alternative 2 would not be significantly negative for wildlife.

4.2.7 Provision 6 (Harvesting CRP)

4.2.7.1 Background/Methodology

Haying and Grazing

Haying and grazing potentially have direct impacts to wildlife (effects associated with reproductive success and mortality of individuals and populations), indirect impacts (effects associated with alterations to vegetation), and cumulative impacts (effects over time and due to other or foreseeable actions). These impacts can be beneficial or detrimental, and could occur over the short or long term. Changes in vegetation structure relate to changes in cover for wildlife, most importantly, protection from predators, cover associated with reproductive success (nesting and rearing young), and food sources (Klute 1994; Horn and Koford 2000; Hughes *et al.* 2000; Madden *et al.* 2000). As discussed in Chapter 4.1.7.1, benefits of haying and grazing include maintenance of grassland environments by preventing succession to more woody vegetation, and they can be a lower impact method of vegetation control than fire, disking, and herbicide application. Direct impacts to wildlife are related to mortality sustained by individual animals from conflicts with machinery, and the direct impacts of machinery on nesting and rearing of young (Gates 1965; Labisky 1981; Calverley and Sankowski 1995; Renner *et al.* 1995; Reynolds 2000).

Ground-nesting grassland and sagebrush birds are particularly susceptible to direct impacts of haying, and less so to grazing (NRCS 2006c). Very few studies quantify the mortality impacts of haying or grazing on grassland and sagebrush birds, much less present data that can be extrapolated to a statewide population. No quantitative studies of the effects on wildlife of various frequencies of haying and grazing conducted on particular types of vegetative stands have been conducted to date, a need recognized in the literature (Riffell *et al.* 2008). Grazing and haying produce indirect and direct impacts to bird species including altering food abundance (seeds, insects), foraging site conditions (food availability); and cover for protection (thermal), escape, or breeding (courtship, nests) (NRCS 1999b). The manure from grazing animals attracts insects and increases their diversity, which are food sources for grassland and sagebrush birds. Direct impacts from haying or grazing potentially affect the presence of bird species (avoidance) (Grandfors *et al.* 1996; Warner *et al.* 2000), possibly reproductive success with destruction of nests, eggs, or young; (Lokemoen and Beiser 1979; Wooley *et al.* 1982; Grandfors *et al.* 1996); increase in predation (Lokemoen and Beiser 1979; Best *et al.* 1997; Horn and Koford 2000); increase in brood parasites (Grandfors *et al.* 1996), and individual collisions with farm equipment and vehicles (Wooley *et al.* 1982; NRCS 1999b).

Bird species respond to habitat manipulations (e.g., grazing, haying) in a variety of ways (reviews by Saab *et al.* 1995; Ryan *et al.* 1998; Johnson *et al.* 2004) based on many factors (Figure 4.2-1). For example, sedge wren avoid recently mowed CRP fields (preferring idled CRP habitat), but savannah sparrow abundance increases the year after haying (Horn and Koford 2000). Thus, changing haying and grazing frequencies would likely have a variety of impacts on birds that are both positive and negative.

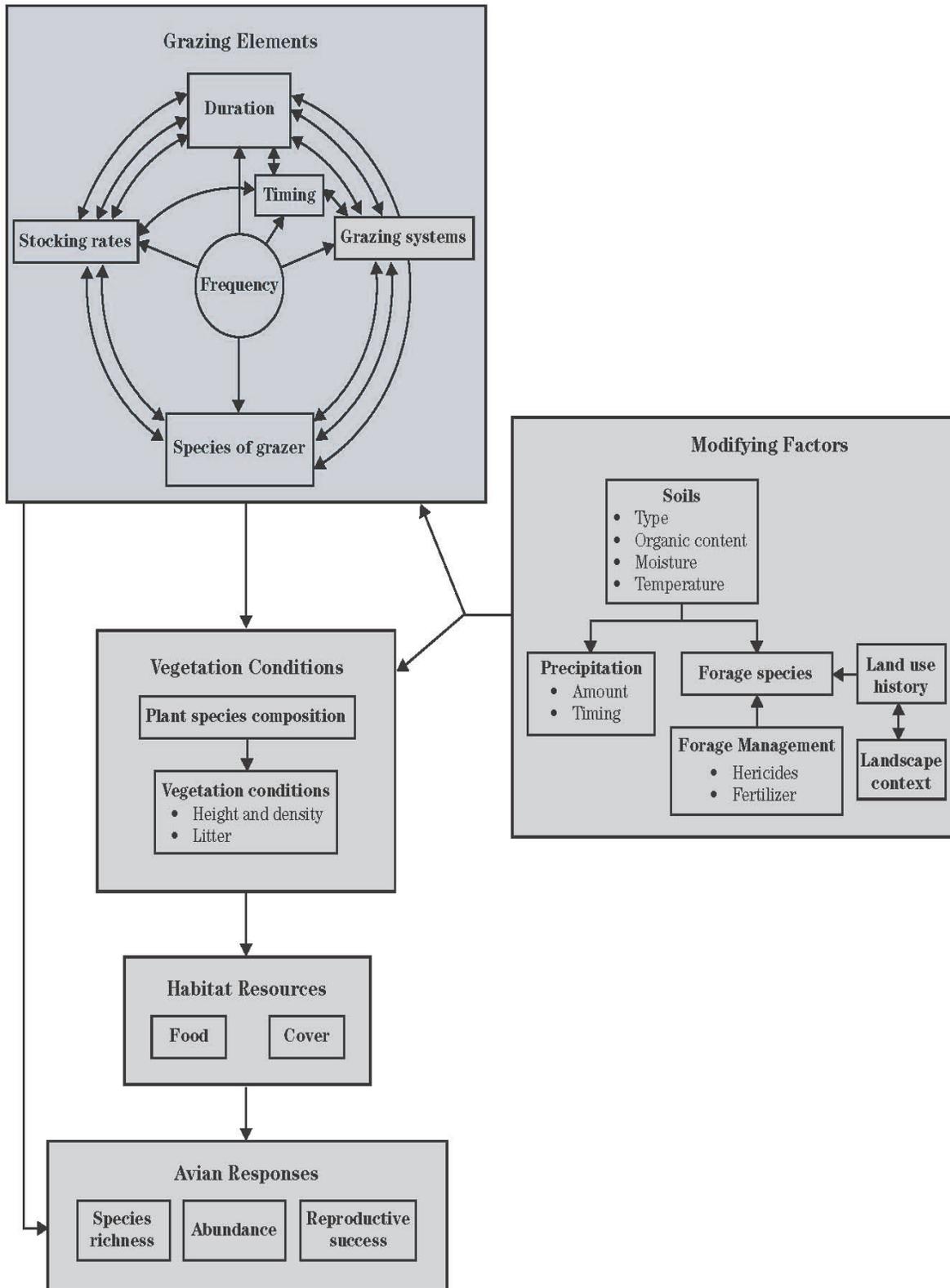


Figure 4.2-1. Grazing Effects on Avian Populations Including Factors That May Modify Avian Responses (Extracted from NRCS 2006c)

Large mammal species may be impacted by haying and grazing most commonly through direct mortality impacts sustained by young and haying machinery, such as fawns; mature large mammals are highly mobile and able to get out of harm's way. Indirect effects of grazing on large mammal species would be negative if wildlife competes with livestock for forage, primarily in the late summer and winter (Coe *et al.* 2001). Mule and white-tailed deer diets shift in the spring from utilizing shrubs to more palatable and succulent herbaceous plants and grasses. In the fall, deer will shift back to utilizing shrubs for a majority of their diet (Olson 1992a, 1992b). Competition with elk is unlikely because in the summer elk seek higher elevation woodland cover with open meadows and grasslands with limited human activity, and thus are less likely to be found in CRP fields during the time cattle would be grazing. Although grazing would potentially result in competition for food with large mammals, haying and grazing would generally improve forage for large mammals by stimulating growth of forbs and removal of old growth of grasses (P.E. Clark *et al.* 1998a).

Small mammals are an important component of grassland ecosystems, including CRP grasslands, primarily due to their intermediate trophic position and high dispersal abilities (Colorado State University [CSU] 2008). Indirect effects of haying and grazing on small mammals that inhabit CRP fields include habitat changes, which in turn can result in a change in abundance, diversity, and composition of small mammal species. Small mammals select habitat at multiple spatial scales, including microhabitats, patches and macrohabitats, and are strongly influenced by habitat structure (Rosenstock 1996). Some species, such as voles, require more cover and litter, others require a mosaic landscape, while others prefer the more open structure provided by haying and grazing (B.K. Clark *et al.* 1998; Yarnell *et al.* 2007). Species that do not favor reduced cover would find refuge in non-hayed areas or populations could decrease, perhaps temporarily. Species, such as deer mice and jackrabbits, prefer reduced cover or mosaic landscapes and populations of these species may increase following grazing or haying (Rickel 2005). Reduced cover would also potentially increase the access of predators to small mammal prey species, but the effects are not entirely clear, since one study evaluating differences between grazed and ungrazed areas did not find a significant effect on small mammals in the grazed area (Torre *et al.* 2007).

Direct effects of haying and grazing on small mammals are associated with reproductive success and mortality of individuals and populations. Generally, rabbit, hares, and jackrabbits produce multiple litters in a year depending on environmental conditions. Typically, the first litter is in the spring with a second litter later in the summer, with potential for four to five litters within a single year (Whitaker Jr. 2001). Chipmunks, ground squirrels, and pocket gophers have the potential to have multiple litters as well with the first occurring in the spring. Most rodents are active year-round; hibernation and inactivity during hot, dry seasons (estivation) are also common. While some hibernators seldom wake, living off of stored fat reserves, other species, such as many chipmunks, are semi-active and will wake to feed from cached food reserves (*Ibid*). Haying and grazing would not likely have impacts at the population level for small mammals.

Reptiles and amphibians (collectively referred to as herpetofauna) associated with grassland and sagebrush habitat would potentially have positive and negative responses to haying and grazing. Lands that have been hayed or grazed may be used more frequently because the

variable habitat structure provides more microsites (i.e., sunning and shading spots) for the herpetofauna (Partners in Amphibian and Reptile Conservation [PARC] 2008). Additionally, some reptiles and amphibians, especially members of the genus *Phrynosoma* (horned lizard), may benefit from grazing due to the reduction of dense vegetation increasing the open areas for foraging (Pianka 1966; Fair and Henke 1997). By increasing the native vegetation the invertebrate population may increase, indirectly increasing the herpetofauna that may forage upon them (PARC 2008). Herpetofauna need various stages of vegetative succession within their habitat, which historically was achieved through natural disturbance regimes (NRCS 2006d).

In cold weather, reptiles become inactive and may hibernate. Similarly, in very hot weather, reptiles will aestivate. Many species of herpetofauna seasonally nest and lay eggs or produce live young. Haying and grazing would be less likely to have direct mortality impacts on herpetofauna during very cold or hot weather, but could impact reproduction by destroying nests or removing habitat needed for courtship and nesting, or increase predation by removing protective cover. The highest potential for mortality due to site management occurs during spring and fall migrations to and from breeding or wintering habitats (NRCS 2006d).

Invertebrate community studies have indicated that the diversity of invertebrates is often related to plant species diversity, structural diversity, patch size, and density (Jonas *et al.* 2002; McIntyre and Thompson 2003). Species richness in invertebrate communities appears to be greatest in mid to late June in temperate regions of the U.S. (Burke and Goulet 1998; Jonas *et al.* 2002). Invertebrate species response to haying and grazing correlates to the life-style and habitat preferences for a species. Haying would create a uniform plant height and remove smaller topographical features, such as grass tussocks (Morris 2000). This would result in a decrease in plant structural diversity within a field and thus a potential decrease in invertebrate diversity based on a species preference for structure; however, long-term abandonment of management in formerly mowed or hayed fields can also lead to insect declines, primarily resulting from floristic changes (Swengel 2001). Grazing would not result in a uniform height of plants but would likely increase the structural diversity and increasing the available niches for invertebrates. Several studies have shown a generally positive relationship between grazing and invertebrates. For example, grazing has been shown to increase insect abundance and diversity (Klute 1994). The manure from grazing animals has been shown to attract beneficial insect invertebrates (Purvis and Curry 1984; Reinecke and Krapu 1986). Mosaic landscapes, such as those created by grazing, are recommended for the maintenance of diverse insect fauna (Swengel 2001). Although these generalizations can be made, there is a lack of cohesive understanding of the tie between insect populations and management practices.

Direct mortality to invertebrates from mowing and grazing is dependent upon the degree to which a species is exposed, specifically if the species is a below ground insect, and to mobility of the species or life stage (Swengel 2001). For example, haying results in insect mortality particularly during the egg or larval stages (DiGiulio *et al.* 2001). Arthropod populations have been documented to decline immediately after mid-summer mowing, but only for a two week period (Bulan and Barrett 1971). Roadside habitats that are maintained by cutting have shown a decline in butterflies (Lepidoptera) after midsummer mowing, but are reoccupied afterward by mobile and non-native species (Munguira and Thomas 1992). Impacts to invertebrates from

grazing include destruction of potential nest sites, existing nests, and contents; direct trampling of invertebrates; and removal of food resources (Sugden 1985). Haying impacts to invertebrates can be reduced if the haying occurs when flowers are not in bloom, haying is conducted in a manner that would produce a mosaic of vegetation patches, and a single area is not hayed more than once a year (DiGiulio *et al.* 2001). Generally, grazing impacts can be mitigated by using moderate to light stocking levels and permitting recovery periods which allow recolonization to occur (Black *et al.* 2007).

Pollinator invertebrate species include butterflies, moths, bees and wasps, beetles and flies and are a critical component of the grassland ecosystem as well as crop production. Pollinators include generalists that forage from a range of plants and specialists that are limited in their sources for nectar and pollen. Two primary habitat needs for all pollinators include a diverse native plant community and egg laying or nesting sites. Management techniques, such as grazing, mowing, prescribed fire and insecticides can be both beneficial and detrimental to pollinators, and no single management plan benefits all pollinators (Black *et al.* 2007). A more detailed discussion of pollinators is provided in Section 4.10.2 below.

Prescribed Grazing

Prescribed grazing has been proven an effective restoration technique for wildlife habitat (USFWS 2009d; Tesauro 2001). This type of grazing to control invasive plant species may impact wildlife differently than other types of grazing. The timing and duration of prescribed grazing is most beneficial when grazing animals will be most likely to damage the invasive species without significantly impacting the desirable native species. Some invasive plants are palatable only during part of the growing season. Removal of vegetation in the spring would remove breeding habitat and nesting materials for many grassland birds. The type of grazing animal used to effect control would be determined by the type of invasive plant (e.g., goats are more adapted to eat leaves and branches of woody plants, cows prefer grasses) and larger grazing stock (e.g., cows or horses) have the potential to disturb certain wildlife more than others (e.g., from trampling); however, as prescribed grazing is often conducted in smaller rotated patches, wildlife are often benefitted through the creation of mosaic habitat and areas of undisturbed habitat. In summary, the impacts of varying the frequency of haying and grazing to shorter or longer intervals on vegetation ultimately benefits some species, but degrades habitat for others. For example, disturbance to grassland covers that is too infrequent allows sagebrush to become established in western environments, benefiting sagebrush obligate species, but not certain grassland species. Whether this is positive or negative depends upon the goals of the CP and the conservation status of the particular species present.

Techniques recommended to minimize direct impacts to wildlife would include initiating mowing at the center of a treatment area, progressively mowing out from the center to allow wildlife to escape and not become trapped to one side, use of a flushing bar mounted on machinery, following the outermost tire track of a previous pass which would reduce animal mortality and soil compaction, containing cattle by fencing using appropriate measures to allow movement of wildlife species, and delaying management practices until most flowering plants have died back and a majority of the pollinators are in diapause (a state of dormancy) or have successfully laid eggs, which typically occurs in late summer or early fall.

4.2.7.2 *No Action Alternative*

Under the No Action Alternative, managed haying and grazing, emergency haying and grazing, incidental grazing, permissive and limited grazing for controlling kudzu would continue. Haying and grazing activities are generally not authorized during the primary nesting and brood rearing season of ground nesting grassland and sagebrush birds. Except for emergency haying or grazing, these activities can only occur at most once every three years, varying by State. Haying or grazing may only occur if included in the Conservation Plan. In addition, a site-specific environmental evaluation conducted on those particular lands proposed for enrollment in CRP would be conducted, and the potential impacts of haying and/or grazing on those lands would be assessed at that time; measures would be stipulated in the Conservation Plan to avoid or minimize potentially negative impacts to wildlife. If haying or grazing of lands already enrolled in CRP are proposed, a resource inventory would be conducted that would identify any sensitive resources and compliance with relevant State or Federal environmental protection laws undertaken at that time.

As described in Section 4.1.7.2, FSA has recently initiated studying the impacts of changing the frequency of managed haying and grazing under the 2002 Farm Bill provisions in 13 Midwestern and western States. In some cases, changing the dates of the PNS is also being considered. The peak breeding season varies by individual bird species, but the PNS period during which no haying or grazing may occur defined by FSA typically is from three to six months long, depending on the State. The PNS period effectively protects not only the nesting and brood rearing season of many ground nesting grassland and sagebrush birds from direct impacts of haying and grazing, but also the fawning periods of large mammals such as deer and antelope, nesting season of many herpetofauna, and the period of greatest invertebrate population florescence. The PNS, however, does not completely capture the peak breeding season of several species of grassland and sagebrush ground nesting birds, exposing some species to potentially more direct mortality impacts from haying machinery. In most of the 13 States evaluated, no significantly negative direct impacts to grassland and sagebrush birds would occur due to the limited amount of acreage that would be managed or emergency hayed or grazed, but in some cases, significant negative mortality impacts to certain birds could occur if managed haying and grazing were followed by emergency haying and grazing on the same land in consecutive years. Further, significantly negative impacts to certain ground nesting birds that prefer tall vegetation for nesting habitat could occur from extended fall or early spring grazing, which would remove this habitat.

As detailed in Section 4.1.7.2, the conclusions of the 13 EAs find that haying or grazing under both managed or emergency procedures have the potential to significantly negatively impact vegetation if the amount of forage removed is excessive and prolonged, or too many grazing animals compact the soil. In addition, the managed haying and grazing EAs found no significant negative impacts to vegetation occur from increasing the frequency of these activities from once every five or 10 years to once every three years. Rather, potentially significant impacts to vegetation could occur in settings with cool season grasses if haying or grazing occurs too early in midsummer; cutting dormant cool season grasses at this time could diminish the health and vigor of these plants. Any action that impacts the health and vigor of the desired conservation cover would be significantly negative as it would result in habitat loss for wildlife. In many states,

this period is protected from haying and grazing by the PNS. In more arid western environments, significant negative impacts to the vegetative cover may occur from disturbance that is too infrequent, as this would allow sod forming grasses to outcompete native bunch grasses. Again, the impacts of varying the frequency of haying and grazing to shorter or longer intervals on vegetation ultimately benefits some species, but degrades habitat for others, and whether this is positive or negative depends upon the goals of the CP and conservation status of the particular species present. In general and on a program scale, haying and grazing would not significantly impact vegetation, and therefore indirectly wildlife, if the established conservation practice provisions, standards, and guidelines are followed, and the Conservation Plan is adapted to resource conditions on the land just prior to engaging in either activity. Harvesting (haying) and routine grazing benefits the health and vigor of the vegetative cover.

As discussed in Chapter 2, the actual acreage of hayed or grazed lands are low and predicted levels of haying or grazing are not expected to increase substantially based on the existing constraints discussed in Section 4.11.7.2. Currently prescribed grazing is limited to controlling kudzu only, thus continuation of current procedures is potentially less beneficial for wildlife than either of the action alternatives, as this tool would not be available to CRP participants. No significant negative impacts to wildlife would occur from continuation of existing provisions for haying and grazing.

4.2.7.3 Alternative 1

Under Alternative 1, managed harvest and routine grazing would be allowed only on currently authorized CPs. Any change by States to the established PNS, period (timing) of harvest and routine grazing, length of these activities, and frequency of routine grazing and harvest requires individual analysis under NEPA by those State Technical Committees desiring such changes. Prescribed grazing for control of invasive plant species would be allowed to control invasive species other than kudzu, but if implemented, would not be authorized on CP23, CP23A, non-grass related CP25, CP27, CP31, and CPs 39-41. Additionally, prescribed grazing for the control of invasive species would be allowed with no reduction of the annual rental rate when the prescribed control plan is included in the Conservation Plan.

Prescribed grazing for invasives can positively impact wildlife habitat by reducing or removing competition by invasive species on native species. When not properly controlled, however, grazing or other actions of grazing animals, such as trampling, can cause significant damage to vegetation and soils, and promote the introduction and spread of invasive plants. Overgrazing can reduce native plant cover, disturb soils, weaken native communities, and allow exotic weeds to invade (DCNR 2009) which would degrade or destroy wildlife habitat. Additionally, livestock can disperse seeds that adhere to their coats as well as through passage through their digestive tract. In general, the specific weed and desirable native plants would determine the number and species of animal grazers and the duration and frequency of grazing for control purposes. A grazing plan developed within the Conservation Plan would identify situations where prescribed grazing is desirable and be tailored to fit the specifics of the site (DCNR 2009) including grazing schedules, densities, and choice of animals. With development of a grazing plan in conjunction with adherence to existing provisions, standards, and guidelines, impacts to wildlife species would not be significant. Requiring additional State-level NEPA analysis of

changes to the PNS, timing, and frequency of harvesting and routine grazing would ensure potential negative environmental impacts would be determined and addressed on a local scale. A site-specific environmental evaluation would be conducted for particular lands proposed for enrollment in CRP and the potential impacts from haying and grazing would be assessed at that time. No significant negative impacts to wildlife would occur under this alternative if the Conservation Plan is followed and adapted to resource conditions just prior to managed harvest or routine grazing, the CPs authorized for managed harvest or routine grazing do not change, and State-level NEPA would be completed for any proposed changes to the PNS, timing, and frequency of these activities prior to implementation. Alternative 1 would be more beneficial to wildlife than the No Action Alternative, as prescribed grazing for invasive species other than kudzu would be permitted, which would improve habitat. Alternative 1 would have similar impacts to Alternative 2, which differs only in that harvested or grazed CPs may change with appropriate NEPA compliance under Alternative 2.

4.2.7.4 Alternative 2

Under Alternative 2, routine grazing or managed harvesting would be permitted on CPs other than those currently allowed upon completion of additional NEPA analysis by those State Technical Committees desiring such changes. The provisions for prescribed grazing would be the same as Alternative 1 and would have similar impacts to wildlife. Impacts to wildlife would not be significant if haying and grazing activities would be completed in accordance with existing standards, provisions and guidelines, and the parameters for conducting these activities are stipulated in the Conservation Plan that is adjusted to resource conditions on the land prior to conducting these activities. State-level NEPA analysis prior to approving changes in which CPs are authorized for harvesting or routine grazing, in addition to any changes in the current PNS, timing, or frequency of harvesting or grazing established for individual States, would ensure potential negative impacts to wildlife would be addressed on a local scale. With development of a harvest or grazing plan for inclusion in the Conservation Plan, in conjunction with adherence to existing provisions, standards, and guidelines, impacts to wildlife species would not be significant. Alternative 2 would be more beneficial than the No Action Alternative because it includes prescribed grazing for control of invasive species other than just kudzu, improving wildlife habitat, but are similar to Alternative 1.

4.2.8 Provision 7 (NASS Cash Rental Rates)

4.2.8.1 Background/Methodology

The analysis of the potential impacts to wildlife from implementation of the alternatives considered below is qualitative. CRP payment structure provides incentives or disincentives to enroll in the program. In general, retiring land from agricultural production and establishing vegetative covers benefits wildlife by creating, enhancing, or restoring habitat.

4.2.8.2 No Action Alternative

Under the No Action Alternative, the existing annual rental payment rules with a soil productivity adjustment as described in Chapter 1 would continue to be implemented. Furthermore, Targeted Signup incentives (for CREP, non-CREP CCRP, and initiatives) would remain

unchanged. In accordance with procedure that became effective October 1, 2009 maintenance incentives remain the same for contracts executed before that date, but for contracts executed after that date, maintenance incentives are reduced to zero for General Signup practices (CRP-644). Under the existing program of 32 million acres, about 85 percent of CRP acres are enrolled under General Signup and 15 percent under Continuous (Targeted) Signups. The benefits to wildlife would continue to accrue from FY 2010 to FY 2012, in largely the same places: any geographic shifts in the distribution of enrollments would more likely change in response to scheduled expiring acres. Furthermore, as discussed in Section 4.11.8.4, enrollment goals under both General and Targeted Signups would likely still be met utilizing current rates. Both the No Action Alternative and Alternative 1 would maintain participation in CRP at similar levels nationally and have similar effects at that scale. In comparison to Alternative 2 which utilizes NASS rental rates for all signup types plus existing Targeted Signup incentives, the No Action Alternative is more beneficial, but not substantially so, as application of Alternative 2 rates would be less likely to meet the current Targeted Signup goal of 4.5 million acres. No significantly negative impacts to wildlife would occur from continuation of the program as currently constituted.

4.2.8.3 Alternative 1

For new General Signup contracts entered into after December 1, 2009, updated NASS market dryland and irrigated rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) may be increased to ensure program acreage targets would be achieved; however, current CRP rental rate rules would apply to this signup. Maintenance incentives are reduced to zero for General Signup practices in accordance with procedure that became effective October 1, 2009 (CRP-644). Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur, but overall participation in the program would not decrease. As determined by the socioeconomic analysis, both General and Targeted Signup enrollment goals similar to current levels would likely be met under Alternative 1. The impacts of this alternative on wildlife would be similar to the No Action Alternative. Alternative 1 would be slightly more beneficial than Alternative 2 since the latter would not be as likely to reach the current Targeted Signup enrollment goal. No significant negative impacts to wildlife would occur under Alternative 1.

4.2.8.4 Alternative 2

Under Alternative 2, for both General and Targeted Signups after December 1, 2009, annual payment rates would be determined by the updated NASS market dryland and irrigated rental rates with soil productivity adjustments. Incentives for Targeted Signups would remain the same as the current program. Maintenance payments would be reduced to zero for General Signups in accordance with procedures effective October 1, 2009. Similar to Alternative 1, Alternative 2 would be anticipated to result in a geographic shift in the distribution of CRP acres. Since no additional incentives would be offered to assure program acreage goals would still be met, this alternative in comparison to the others considered would have more potential negative impacts for wildlife. Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur under Alternative 2. A reduction in Continuous Signup could

occur since no additional incentives would be offered under this alternative. As detailed in Section 4.11.8.4 Socioeconomic Resources, overall participation in the General or Targeted Signups would not decrease substantially, assuming a 4.5 million acre Targeted Signup goal, which is the existing condition. No significant negative impacts to wildlife would occur from implementation of Alternative 2.

4.2.9 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives)

4.2.9.1 Background/Methodology

The potential impacts to wildlife of the alternatives proposed to address this provision are qualitatively analyzed. Providing incentives to enroll agricultural lands in CRP benefits wildlife through creating, enhancing, and restoring habitat that maximizes their survival.

4.2.9.2 No Action Alternative

Section 1244(a) Beginning Farmers and Ranchers currently provides for incentives to be offered to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs. Continuation of the ability to offer incentives stands to benefit wildlife since more participation in the program by the affected populations would take marginal lands out of agricultural production and establish long-term vegetative covers; however, since both the action alternatives also expand to offer incentives to socially disadvantaged farmers and ranchers as well, both of these alternatives would potentially benefit wildlife more than the No Action Alternative. Additionally, as discussed in Chapter 3.12 Environmental Justice, since the pool of farmers and ranchers that meet the definition of socially disadvantaged and associated would be relatively small, no significant negative impacts to wildlife would occur from implementation of the program as currently configured.

4.2.9.3 Alternative 1

Alternative 1 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for cost share rates at least 25 percent above otherwise applicable rates (up to 90 percent), and advance payments of up to 30 percent of the amount determined for the purchase of materials and services. The USDA budget would require PAYGO offset which could potentially reduce services for other existing or potential participants in CRP. Alternative 1 would provide the most incentive for the affected populations to participate in the program, enhancing the potential of reaching the full enrollment of authorized acres in CRP, thereby benefiting wildlife. It would be more beneficial than the No Action Alternative since it extends incentives to socially disadvantaged farmers and ranchers; however, given the relatively small population that would qualify for these incentives and the small number of associated acres, the impact of this alternative on wildlife would not be substantially different from the No Action Alternative or Alternative 2.

4.2.9.4 Alternative 2

Alternative 2 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for Signup Incentives, most likely for CPs that currently are eligible for SIPs. Under this alternative, the USDA budget would require a PAYGO offset, which

could potentially reduce services for other existing or potential participants in CRP. Alternative 2 therefore provides more incentive for enrollments than the No Action Alternative, but is less beneficial than Alternative 1, which provides higher payments; however, the size of the affected population and associated acreage would be relatively small; thus, no significantly negative impacts to wildlife would occur from implementation of Alternative 2.

4.2.10 Provision 9 (Pollinator Conservation)

4.2.10.1 Background/Methodology

Pollinator species are varied, including insects, birds, bats, and even mice. Many pollinator habitat needs have been previously described in Section 4.1.10.1, but again, the most basic needs are a diversity of flowering plants across the spring, summer, and fall seasons and egg-laying or nesting sites (NRCS 2009c).

Nesting and egg laying sites required by pollinators include undisturbed soil, duff, and woody debris (NRCS 2009d). Most of North America's native bee species are ground nesters and require direct access to the soil's surface to excavate and access their nests (Xerces 2009). Pollinator habitat should receive little to no disturbance, including the turning of machinery or driving within pollinator habitat (NRCS 2009d). Pesticide and herbicide use on or near a pollinator planting can have significant negative effects on pollinator populations (*Ibid.*).

As described in Section 4.1.10.1, vegetation management techniques include grazing, mowing, prescribed fire and herbicide use that can be both beneficial and detrimental to pollinators, and no single management technique benefits all pollinators (Black *et al.* 2007). Management should be performed during invertebrate dormant season (November - March) to promote forb diversity and to reduce risks to pollinators and their nests (*Ibid.*). Disturbance of a site in portions and multi-year cycles provides a source from which pollinators can spread (Black *et al.* 2007).

Analysis of the potential impacts of the alternatives considered to implement this provision on wildlife is determined qualitatively. In general, taking lands out of agricultural production and establishing resource conserving covers benefits wildlife through the creation, enhancement, and restoration of habitat.

4.2.10.2 No Action Alternative

Under the No Action Alternative, current general practices to reduce impacts to pollinators would continue to be employed. For example, NRCS Practice Standard Code 327, Conservation Cover, calls for spot treatment for invasive and noxious weed spraying to protect forbs and legumes that benefit native pollinators and other wildlife. Also Practice Standard 511 Forage Harvest Management specifies not haying at peak flowering to avoid impacting pollinators. In addition, SAFE projects that target benefiting pollinators may also be implemented. As described in Sections 4.2.6 and 4.2.7, vegetation management techniques that ensure long-term viability of the conservation cover benefits pollinators, but if not carefully applied, may adversely impact pollinators and other wildlife; however, adherence to existing conservation practice standards, provisions, and guidelines would avoid or minimize adverse impacts. No significant negative impacts to wildlife would occur from current procedures

concerning pollinators. The impacts of existing provisions on wildlife would be similar to Alternative 2 that would only modify existing CPs to benefit pollinators, but would potentially be less beneficial for pollinators than Alternative 1, which devotes up to 1.6 million acres to a new Pollinator Habitat Conservation Practice.

4.2.10.3 Alternative 1

Under Alternative 1, a new Pollinator Habitat Conservation Practice would be created with a goal of up to five percent of enrolled acres into new pollinator friendly habitat. In addition, existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators by including plant species beneficial for pollinators at specified composition rates, and other such practices. These practices would provide a variety of plant species which would also benefit other wildlife as food sources and habitat.

Some requirements for maintaining pollinator habitat may conflict with maintenance that benefits other wildlife species. Pollinator habitat requires minimal disturbance and timed maintenance to be successful. Land management is suggested to occur no more than once every three to six years to avoid impacts to eggs and larvae of insect pollinator species (NRCS 2009d). This delay in disturbance may conflict with the needs of species such as specific grassland birds; however, as the areas of pollinator habitat would be small in comparison to grassland bird habitat, impacts to grassland birds would not be negative. Alternative 1 could be more beneficial to terrestrial wildlife than the No Action Alternative or Alternative 2, since it would create a new CP with an enrollment target of 1.6 million acres (assuming a maximum 32 million acre CRP) that might otherwise be enrolled in practices with less direct benefits to wildlife. No significant negative impacts to wildlife would occur from Alternative 1.

4.2.10.4 Alternative 2

Alternative 2 would modify existing practices to directly benefit pollinators. As such, the impacts of this alternative to wildlife would be similar to those of the No Action Alternative. Alternative 2 would be potentially less beneficial than Alternative 1, which would enroll up to 1.6 million acres in a new CP that otherwise might be enrolled in practices that do not substantially address wildlife; however, as discussed above, the degree of this impact to wildlife would not be substantially different than either the No Action Alternative or Alternative 1. No significant negative impacts to wildlife would occur from implementation of Alternative 2.

4.3 BIOLOGICAL RESOURCES: PROTECTED SPECIES

4.3.1 Significance Criteria

Impacts to protected species would be considered significant if implementation of an action or program resulted in incidental or otherwise take of a Federally protected species or critical habitat.

4.3.2 Provision 1 (National Conservation Initiatives)

4.3.2.1 *Background/Methodology*

Potential impacts to protected species through implementation of the provision alternatives are analyzed qualitatively. In general, any action that would convert land from agricultural to conservation uses would be considered a positive impact on wildlife. Enrollment in CRP potentially ensures long-term benefits to protected species and their habitat through soil erosion reduction, improved water quality, and creation of terrestrial and aquatic habitat that maximizes their survival. Long-term benefits to protected species would be achieved by providing a diverse conservation cover which would provide food, shelter, or breeding and nesting habitat. Long-term benefits from the 2008 Farm Bill on threatened and endangered species and their critical habitat would be achieved by improving existing terrestrial and aquatic habitats or by providing such habitat where it did not previously exist under agriculture.

Conversion of agricultural lands to a conservation purpose would have long-term benefits for threatened and endangered species and their critical habitat through the improvement of existing terrestrial and aquatic habitats, or by providing such habitat where it did not previously exist under agriculture.

4.3.2.2 *No Action Alternative*

National Conservation Priority Areas and payment incentives designed to encourage enrollment in these areas would continue as currently configured under the No Action Alternative. In addition, CREPs and initiatives implemented since the 2002 Farm Bill would also continue unchanged under this alternative. All Initiatives help improve wildlife habitat and therefore directly benefit protected species. Initiatives that focus on wildlife will have the greatest benefit to protected species by restoring or creating habitat that can be used by protected species. These benefits would be 10 to 15 years in duration or longer if contracts are extended. Prior to site development a site specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure. If protected species are identified during the evaluation, consultation with the USFWS would be required to determine potential impacts. If negative impacts to protected species would occur, it is unlikely the proposed activity would be authorized. To avoid impacts to protected species USFWS may require site-specific BMPs during site preparation and management.

Continuation of the current program would maintain benefits to protected species; however, these benefits would likely be less than those achievable under Alternative 1, which includes an initiative addressing critical wildlife habitat on a regional basis. The latter initiative has the potential for effecting benefits on a population level which may recover species sufficiently to keep them from becoming threatened or endangered under the ESA. The impacts of the No Action Alternative on protected species would also not be very different from those attained by Alternative 2, which would continue current procedures, but includes a reduction in wetland initiatives. No significant negative impacts to protected species would occur from the No Action Alternative.

4.3.2.3 *Alternative 1*

This alternative would address National CPAs, State, and to a certain extent regional conservation initiatives as currently implemented, but in addition, would offer three new national conservation initiatives under Continuous Signup: the Water Resource Protection Initiative, Highly Erodible Land Initiative, and Regional Restoration of Critical Wildlife Habitat Initiative. Implementation of the new initiatives would require PAYGO offset in the USDA budget. Of the new national conservation initiatives proposed for this alternative, only the Regional Restoration of Critical Wildlife Habitat Initiative would likely have a substantial impact on wildlife. Restoration of up to 250,000 acres of critical habitat on a regional scale has the potential to significantly address negative impacts to a particular species at the population level, potentially leading to recovery that keeps it from listing on State or Federal threatened and endangered registers. The Water Resource Protection Initiative protects municipal water resources and would result in direct and indirect benefits to wildlife by reducing water use by municipal and agricultural acreage, which in turn would reduce downstream pollutants that may harm fish and other water and land dwelling animals and habitat. The Highly Erodible Land Initiative reduces agricultural uses of HEL with and EI greater than 50. Removing highly erodible land from agricultural production would result in direct and indirect beneficial impacts to wildlife including establishing new habitat, and a reduction of soil erosion and sedimentation which can cause loss of aquatic habitat and suffocation of aquatic wildlife. Since the costs of these initiatives require offset in the USDA budget under PAYGO, total gains may be tempered if other program services are reduced. Alternative 1 would be more beneficial for protected species than the No Action Alternative or Alternative 2, but given the small amount of acreage set aside for this initiative, not substantially so. No significant negative impacts to protected species would occur from implementation of Alternative 1.

4.3.2.4 *Alternative 2*

Under Alternative 2, no changes to existing National CPAs, CREPs, or national conservation initiatives would occur, except the wetlands initiative would be reduced. Establishing wetlands provides habitat for both aquatic and terrestrial wildlife. This alternative would reduce aquatic wildlife habitat but could increase terrestrial wildlife habitat by shifting acreage to other practices benefiting wildlife. The impacts of Alternative 2 on protected species would therefore be similar to the No Action Alternative, but less beneficial than Alternative 1, which would restore critical wildlife habitat on a regional scale. To the extent that protected species are dependent on aquatic critical habitat, Alternative 2 would have more negative impacts than Alternative 1; however, the difference would not be substantial, since the amount of targeted acreage under Alternative 1 would be relatively small. Implementation of Alternative 2 would have no significant negative impacts to protected species.

4.3.3 Provision 2 (Maximum Enrollment)

4.3.3.1 *Background/Methodology*

All acres enrolled in CRP help improve wildlife habitat and therefore directly benefit protected species. Conservation Practices that focus on wildlife will have the greatest benefit to protected species by restoring or creating habitat while CPs such as CP21 (Filter Strips) indirectly benefit

protected species through an increase in habitat quality. Enrollment of acres in practices with substantive wildlife habitat creation is beneficial, whereas any reduction in acres enrolled in the program could have negative impacts on protected species, as lands would potentially remain in agricultural production. Conversion of agricultural lands to a conservation practice would have long-term benefits for threatened and endangered species and their critical habitat through the improvement of existing terrestrial and aquatic habitats, or providing such habitat where it did not previously exist under agriculture.

4.3.3.2 No Action Alternative

This alternative apportions 27.5 million acres to CRP General Signup and Targeted Signups (Continuous) acreage to 4.5 million acres of the total 32 million acres authorized in FY 2010. Under the No Action Alternative, the balance between the General and Continuous sign-ups changes slightly from FY 2009 levels toward Continuous Sign-up priorities, most notably increasing acres for Farmable Wetlands, SAFE, and Initiatives. Regular Continuous practices are scheduled at two million acres. General Signup includes larger overall land areas which may provide more continuous habitat compared to certain strip Targeted Signup practices; however, Targeted Signup includes highly environmentally sensitive desirable lands and includes high priority practices which may provide greater environmental benefit when enrolled. As discussed in Section 4.2.3.2 concerning CRP substantially increasing certain wildlife populations, further research into wildlife benefits may identify areas where targeted implementation would be of the greatest benefit to wildlife species (Haufler 2007) and thus protected species. On the other hand, large continuous tracts of quality habitat have contributed substantially to conserving declining and imperiled species. Prior to site development a site specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure. If protected species are identified during the evaluation, consultation with the USFWS would be required to determine potential impacts. If negative impacts to protected species would occur, it is unlikely the proposed activity would be authorized. To avoid impacts to protected species USFWS may require site-specific BMPs during site preparation and management. The No Action Alternative provides positive benefits to protected species; however, it apportions fewer acres to Targeted Signups than Alternative 1 that potentially benefit protected species the most. The No Action Alternative would be more beneficial to wildlife than Alternative 2, which would reduce the CRP to 24 million acres.

4.3.3.3 Alternative 1

Alternative 1 would allocate 24 million acres to General Signup and eight million acres to Targeted Signup. Acres devoted to SAFE and Initiatives that directly provide wildlife habitat would be proportionately increased under this alternative for a combined total of 1.75 million acres. The overall increase in Targeted Signup acreage provides greater potential for enrollment of environmentally desirable land and high priority practices which may provide greater benefits to protected species when enrolled. Alternative 1 would potentially be more beneficial for protected species than the No Action Alternative, since it increases Targeted Signup acreage with CPs more directly benefiting targeted wildlife species. Alternative 1 would be more beneficial to wildlife than Alternative 2, which would reduce CRP by eight million acres and would have a lower Targeted Signup enrollment goal.

4.3.3.4 *Alternative 2*

This alternative would implement an across the board reduction in CRP acres from present levels to no more than 24 million acres in the program, with 20 million acres apportioned to General Signup and four million acres apportioned to Targeted Signups. This would be eight million acres less than either the No Action Alternative or Alternative 1. The apportionment of the acres among General Signup and Targeted Signups would be similar to that of the No Action Alternative. While any conversion of land from crop production would benefit protected species, the loss of CRP acreage would result in the net loss of potential protected species habitat. In some regions, CRP has made a substantial contribution to population goals for grassland birds and waterfowl (McLachlan *et al.* 2009; Reynolds *et al.* 2007) and the conversion of eight million acres back to agricultural lands would result in negative impacts to these species. Overall, the reduction of eight million acres proposed by this alternative would be negative for protected species; however, the relative impact of returning these acres to agricultural production on a national scale would be small, considering there are currently about 406 million acres of active cropland in the lower 48 States (NASS 2009a). Implementation of Alternative 2 could have significantly negative impacts on protected species at the local level, for example, at the county level, or in States that have a large amount of acreage leaving the program due to contract expirations scheduled to occur from FY 2010 to FY 2012. Alternative 2 would be less beneficial for protected species than the other alternatives that maintain program acreage at the authorized 32 million acre level.

4.3.4 Provision 3 (Alfalfa Crop History)

4.3.4.1 *Background/Methodology*

Benefits to protected species would be achieved by providing habitat that otherwise would not exist, or by improving such habitat. Alfalfa is a cool season perennial legume and can remain productive from four to 10 years or more depending on variety and climate (Jennings 2001). As described in Section 4.1.4 Vegetation, alfalfa exhibits autotoxicity, which is why crop rotation is practiced on alfalfa fields. When the alfalfa stand is rotated (usually with corn), the farmers may only leave it out of alfalfa for six months to two years before returning it to alfalfa (Schlegel 2009).

Conversion of agricultural lands to a conservation purpose would have long-term benefits for threatened and endangered species and their critical habitat through the improvement of existing terrestrial and aquatic habitats, or providing such habitat where it did not previously exist under agriculture.

4.3.4.2 *No Action Alternative*

Lands planted in alfalfa in rotation with multi-year grasses and other legumes in any rotation practice would continue to be enrolled in CRP under the No Action Alternative. Continuation of the program as established would not offer operators or owners the opportunity to include lands planted in alfalfa alone in rotation with another agricultural commodity during the period of 1996 to 2001. Removal of alfalfa from production and enrollment in conservation cover positively benefit protected species by both providing habitat and reducing demand on local water

supplies if the fields are irrigated. The No Action Alternative would positively benefit protected species by allowing enrollment of new lands to take place. Prior to site development a site specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure. If protected species are identified during the evaluation, consultation with the USFWS would be required to determine potential impacts. If negative impacts to protected species would occur, it is unlikely the proposed activity would be authorized. To avoid impacts to protected species USFWS may require site-specific BMPs during site preparation and management.

Under the action alternatives, alfalfa alone in rotation with an eligible commodity may qualify for the program, which could conceivably result in more acres being able to qualify for CRP than the No Action Alternative, but this may be offset by the new provision of having to meet a particular rotation interval rather than any rotation as permitted by current procedures. The number of acres enrolled in the program under this provision that also meets the HEL and other land eligibility requirements is not known, but is relatively low. No significant negative impacts to protected species would occur from continuation of the existing provisions.

4.3.4.3 Alternative 1

Alternative 1 would expand CRP crop history requirements to include lands planted in alfalfa alone in rotation with an agricultural commodity at an eight year rotation interval (six years alfalfa and two years commodity). The rotation must have occurred from 2002 to 2007. This enables additional agricultural lands to be eligible to serve conservation purposes without increasing or decreasing the overall number of acres authorized for enrollment. Inclusion of this land in CRP therefore potentially ensures long-term benefits to protected species through providing new habitat. Alternative 1 would require a shorter rotation interval than Alternative 2, which would be easier for operators to meet; however, Alternative 1 would potentially qualify less land than the No Action Alternative, which permits any rotation. As such, the provision would have negligible impacts on protected species due to the limited number of acres available to enroll under the 32 million acre cap from now until 2012. No significant negative impacts to protected species would occur from implementation of Alternative 1.

4.3.4.4 Alternative 2

Alternative 2 would expand CRP crop history requirements to include lands planted in alfalfa alone in rotation with an agricultural commodity at a 12 year rotation interval (10 years alfalfa and two years commodity). The rotation must have occurred within 2002 to 2007. This would enable additional agricultural lands to be converted to serve conservation purposes without increasing or decreasing the overall number of acres authorized for enrollment. Inclusion of this land in CRP therefore potentially would ensure long-term benefits to protected species through increased habitat creation. While Alternative 2 would provide benefits to protected species similar to the other alternatives considered this alternative requires a longer rotation interval which would be more difficult to meet; however, the impact to protected species would not be significantly negative due to the small number of acres available to enroll under the program acreage cap.

4.3.5 Provision 4 (County Acreage Limitation Exception)

4.3.5.1 *Background/Methodology*

Limiting acreages for enrollment ultimately limits benefits for protected species; however, any new CRP enrollment potentially ensures long-term benefits to protected species and their habitat through soil erosion reduction, improved water quality, and creation of terrestrial and aquatic habitat that maximizes their survival.

Potential impacts to protected species through implementation of the alternatives considered for this provision are analyzed qualitatively. In general, any alternative that would remove land from agricultural use and establishes long-term conservation covers would be considered a positive impact on wildlife. Prior to site development a site specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure. If protected species are identified during the evaluation, consultation with the USFWS may be required to determine potential impacts. If negative impacts to protected species are anticipated, participation in CRP may not be allowed. To avoid impacts to protected species USFWS may require site-specific BMPs during site preparation and management.

4.3.5.2 *No Action Alternative*

Currently, no more than 25 percent of a county's cropland may be enrolled in CRP and WRP, except when it is determined there would not be an adverse effect to the local economy, where operators are having difficulty complying with soil conservation measures for actively worked lands, and excepting shelterbelt and windbreak practice acreage. There is currently not an upward limit on acreage in excess; however, the authority to enroll no more than 32 million acres in the program still applies, and any limitations on the allotment of acres for certain CPs or initiatives per State would not be waived. Currently, 24 counties have 25 percent or more of cropland enrolled and none have more than 50 percent. Allowing more lands to be enrolled in the program potentially takes land out of agricultural production and would benefit protected species. Implementation of the No Action Alternative benefits protected species similar to that expected under Alternative 1, but would realize more benefits than Alternative 2, which except for additional acreage enrolled under CREP or Continuous Signup, would cap additional CRP and WRP combined acreage at no more than 50 percent of a county's cropland. No significant negative impacts to protected species would occur from continuation of the existing provision.

4.3.5.3 *Alternative 1*

Under Alternative 1, a county may exercise its yes/no authority to allow additional acreage enrolled under CREP or Continuous CRP beyond the cap, which stipulates no more than 25 percent of a county's cropland may be enrolled in CRP and WRP combined, with no additional per county acreage limitation. This alternative would benefit protected species by allowing the most land to be enrolled in CRP among the action alternatives, but is more restrictive than the No Action Alternative, which does not limit additional acres only to CREP or Continuous CRP; however, this difference would not be substantial, since the total number of acres authorized for the program is still 32 million acres, and the rate at which existing contracts are expected to expire until 2012 would allow only a relatively small amount of additional acreage to be enrolled

in the program. Alternative 1 would not likely change substantially the number of counties that would exceed acres beyond the 25 percent cap in comparison to the No Action Alternative. No significantly negative impact to protected species would occur under Alternative 1.

4.3.5.4 Alternative 2

Alternative 2 would enable a county to exercise its yes/no authority to exceed the 25 percent cap on county cropland being enrolled in both CRP and WRP at any one time under CREP and Continuous CRP signups, but up to a new limit of no more than 50 percent. Similar to Alternative 1, Alternative 2 would not likely change substantially the number of counties that would exceed acres beyond the 25 percent cap in comparison to the No Action Alternative. This alternative would be more restrictive than either the No Action Alternative or Alternative 1, and would be potentially less beneficial for protected species, but because of the 32 million acre program limit and the rate of attrition from expected contract expirations, the impacts to protected species would not be significantly negative. No significant negative impacts to protected species would occur under Alternative 2.

4.3.6 Provision 5 (Conservation Plan Management)

4.3.6.1 Background/Methodology

Mid-contract management activities include prescribed burning, mowing, thinning, disking, interseeding, and herbicide/pesticide application. These activities are generally undertaken to maintain the long-term health and viability of conservation vegetative covers, enabling them to meet their intended conservation purpose. These activities can benefit some protected species while they can also be detrimental to others.

Some conservation covers require prescribed burning to allow vegetation to propagate (e.g., grasses and longleaf pine), reduce unwanted vegetation, release nutrients in old plant residue, and provide open areas required by some protected species as well as allow room for forbs and/or planted legumes and wildflowers to grow. Mowing and disking encourages plant diversity and provides habitat and food resources for some protected species. Thinning reduces competition which increases the viability of tree stands and provides additional open areas for protected species, in addition to opening the tree canopy which allows for understory plants to grow. Interseeding provides additional forage for protected species. Herbicide and pesticide application reduces competition with the conservation cover which in turn benefits protected species. While not authorized specifically as MCM activities, prescribed grazing may help control invasive plants with a lesser amount of herbicides which may directly harm protected plant species or animal species through ingestion. Mowing or haying removes excess plant materials which can limit or inhibit areas of beneficial wildlife habitat. Prescribed grazing and haying are discussed further in Section 4.2.7.

In summary, the potential benefits or adverse impacts of MCM on protected species are highly dependent upon the purpose of the conservation practice and the resources present on the land where these activities would be undertaken. Prior to site development a site specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure. If protected species are identified during the evaluation,

consultation with the USFWS would be required to determine potential impacts. If negative impacts to protected species would occur, it is unlikely the proposed activity would be authorized. To avoid impacts to protected species USFWS may require site-specific BMPs during site preparation and management.

4.3.6.2 No Action Alternative

Under the No Action Alternative, management as stipulated in the Conservation Plan is expected to occur. Mid-contract management is required on all CPs on contracts executed after FY 2004 and is voluntary for contracts accepted before that year; it is currently cost shared at 50 percent. Mid-contract management activities can be exempted by States where the activities are found to be not beneficial to the conservation cover. Prior to site development a site specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure. If protected species are identified during the evaluation, consultation with the USFWS would be required to determine potential impacts. If negative impacts to protected species would occur, it is unlikely the proposed activity would be authorized. To avoid impacts to protected species USFWS may require site-specific BMPs during site preparation and management, which would be included in the Conservation Plan. Requiring MCM on an individual CP basis as a national standard imposes management that may not be applicable to local conditions, despite the exemptions afforded some States, and is difficult to administer. Since the goal of MCM is to preserve the health and viability of the conservation cover, and providing it is determined in consultation with USFWS that MCM would not negatively impact protected species, continuation of existing provisions would not be significantly negative for protected species. The impacts of the No Action Alternative would be similar to the action alternatives, since the environmental evaluation completed prior to enrollment would identify the presence of protected species, and consultation with USFWS would be undertaken, ensuring no MCM with negative impacts would be authorized or included in the Conservation Plan.

4.3.6.3 Alternative 1

Alternative 1 would require Conservation Plan management throughout the contract term and MCM tasks to be completed only if included in that plan. Mid-contract management would not be required on an individual CP basis. This alternative would be easier to administer than either the No Action Alternative or Alternative 2, and would provide the greatest flexibility for only undertaking management tasks as may be applicable to local conditions. Negative impacts to protected species could occur if appropriate MCM would not be included in the plan; however, the site specific environmental evaluation and consultation with USFWS on potential impacts to any protected species identified on the land proposed for enrollment minimizes this potential. Any activity identified as having adverse impacts to protected species would not be authorized and would be specifically addressed in the Conservation Plan based upon consultation with USFWS. As such, the potential impacts of Alternative 1 on protected species would be similar to the No Action Alternative and Alternative 2. No significantly negative impacts to protected species would occur under Alternative 1.

4.3.6.4 *Alternative 2*

Alternative 2 would require MCM on certain CPs as determined by individual State Technical Committees and MCM tasks if specified in the Conservation Plan. This alternative would provide both flexibility in requiring MCM in the Conservation Plan designed for a particular parcel of land, but also would provide States the ability to specify MCM by CP as appropriate to their region. As in the case of the other alternatives considered, a site specific environmental evaluation prior to enrollment of land in CRP would identify the presence of any protected species. If any such species are identified, consultation with USFWS would determine the potential for any proposed activity to have negative impacts on protected species. If any negative impacts are determined, it is unlikely the activities would be approved, and if measures are identified to avoid impacts to protected species, these would be included in the Conservation Plan. No significant negative impacts to protected species would occur from implementation of Alternative 2.

4.3.7 Provision 6 (Harvesting CRP)

4.3.7.1 *Background/Methodology*

Haying and grazing potentially have direct impacts to protected species (effects associated with reproductive success, mortality of individuals and populations, and trampling), indirect impacts (effects associated with alterations to vegetation), and cumulative impacts (effects over time and due to other or foreseeable actions). These impacts can be beneficial or detrimental, and could occur over the short or long term. Whether haying and grazing is beneficial or adverse to a protected species depends upon the habitat and life cycle needs of the species present. Prior to site development a site specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure. If protected species are identified during the evaluation, consultation with the USFWS would be required to determine potential impacts. If negative impacts to protected species are identified, it is unlikely the proposed activity would be approved. To avoid impacts to protected species USFWS may require site-specific BMPs during site preparation and management.

4.3.7.2 *No Action Alternative*

Under the No Action Alternative, managed haying and grazing, emergency haying and grazing, incidental grazing, permissive and limited grazing for controlling kudzu would continue. Haying and grazing activities are generally not authorized during the primary nesting and brood rearing season of ground nesting grassland and sagebrush birds. Except for emergency haying or grazing, these activities can only occur at most once every three years, varying by State. Haying or grazing may only occur if included in the Conservation Plan. A site specific environmental evaluation prior to enrollment of land in CRP would identify the presence of any protected species. If any such species are identified, consultation with USFWS would determine the potential for any proposed activity to have negative impacts on protected species. If any negative impacts are determined, it is unlikely the harvesting or grazing activities would be approved, and if measures are identified to avoid impacts to protected species, these would be included in the Conservation Plan. As the same environmental evaluation would be required

under both action alternatives, the impacts to protected species of these alternatives would be similar to the No Action Alternative.

4.3.7.3 Alternative 1

Under Alternative 1, haying and grazing would be continued on currently authorized CPs. Any change by States to the established PNS, period (timing) of harvest and routine grazing, length of these activities, and frequency of routine grazing and harvest would require individual analysis under NEPA by those State Technical Committees desiring such changes. Prescribed grazing for control of invasive plant species would be allowed to control invasive species other than kudzu, but if implemented, would not be authorized on CP23, CP23A, non-grass related CP25, CP27, CP31, and CPs 39-41. Additionally, prescribed grazing for the control of invasive species would be allowed with no reduction of the annual rental rate when the prescribed control plan is included in the Conservation Plan.

Requiring additional State-level NEPA analysis of changes to the PNS, timing, and frequency of harvesting and routine grazing ensures potential negative environmental impacts are determined and addressed on a local scale. A site specific environmental evaluation prior to enrollment of land in CRP would identify the presence of any protected species. If any such species are identified, consultation with USFWS would determine the potential for any proposed activity to have negative impacts on protected species. If any negative impacts are determined, it is unlikely the harvesting or grazing activities would be approved, and if measures are identified to avoid impacts to protected species, these would be included in the Conservation Plan. No significantly negative impacts to protected species would occur under Alternative 1. The impacts of Alternative 1 would therefore be similar to the other alternatives considered to implement Provision 6.

4.3.7.4 Alternative 2

Under Alternative 2, routine grazing or harvesting would be permitted on CPs other than those currently allowed upon completion of additional NEPA analysis by those State Technical Committees desiring such changes. The provisions for prescribed grazing would be the same as Alternative 1 and would have similar impacts to protected species. State-level NEPA analysis prior to approving changes in which CPs are authorized for harvesting or routine grazing, in addition to any changes in the current PNS, timing, or frequency of harvesting or grazing established for individual States, ensures potential negative impacts to protected species would be addressed on a local scale. As in the case of the other alternatives considered to implement Provision 6, a site specific environmental evaluation prior to enrollment of land in CRP would identify the presence of any protected species. If any such species are identified, consultation with USFWS would determine the potential for any proposed activity to have negative impacts on protected species. If any negative impacts are determined, it is unlikely managed harvesting or routine grazing activities would be approved, and if measures are identified to avoid impacts to protected species, these would be included in the Conservation Plan. No significantly negative impacts to protected species would occur under Alternative 2.

4.3.8 Provision 7 (NASS Cash Rental Rates)

4.3.8.1 Background/Methodology

The analysis of the potential impacts to wildlife from implementation of the alternatives considered below is qualitative. CRP payment structure provides incentives or disincentives to enroll in the program. In general, retiring land from agricultural production and establishing vegetative covers benefits wildlife by creating, enhancing, or restoring habitat.

4.3.8.2 No Action Alternative

Under the No Action Alternative, the existing annual rental payment rules with a soil productivity adjustment as described in Chapter 1 would continue to be implemented. Furthermore, Targeted Signup incentives (for CREP, non-CREP CCRP, and initiatives) would remain unchanged. In accordance with procedure that became effective October 1, 2009 maintenance incentives remain the same for contracts executed before that date, but for contracts executed after that date, maintenance incentives are reduced to zero for General Signup practices (CRP-644). Under the existing program of 32 million acres, about 85 percent of CRP acres are enrolled under General Signup and 15 percent under Continuous (Targeted) Signups. The benefits to protected species would continue to accrue from FY 2010 to FY 2012, in largely the same places of the country: any geographic shifts in the distribution of enrollments would more likely change in response to scheduled expiring acres. Furthermore, as discussed in Section 4.11.8.4, enrollment goals under both General and Targeted Signups would likely still be met utilizing current rates. Both the No Action Alternative and Alternative 1 would maintain participation in CRP at similar levels nationally and have similar effects at that scale. In comparison to Alternative 2 which utilizes NASS rental rates for all signup types plus existing Targeted Signup incentives, the No Action Alternative is more beneficial, but not substantially so, as application of Alternative 2 rates would be less likely to meet the current Targeted Signup goal of 4.5 million acres. No significantly negative impacts to protected species would occur from continuation of the program as currently constituted.

4.3.8.3 Alternative 1

For new General Signup contracts entered into after December 1, 2009, updated NASS market dryland and irrigated rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) may be increased to ensure program acreage targets would be achieved; however, current CRP rental rate rules would apply to this signup. Maintenance incentives are reduced to zero for General Signup practices in accordance with procedure that became effective October 1, 2009 (CRP-644). Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur, but overall participation in the program would not decrease. As determined by the socioeconomic analysis, both General and Targeted Signup enrollment goals similar to current levels would likely be met under Alternative 1. The impacts of this alternative on protected species would be similar to the No Action Alternative. Alternative 1 would be slightly more beneficial than Alternative 2 since the latter would not be as likely to reach the current Targeted Signup enrollment goal. No significant negative impacts to protected species would occur under Alternative 1.

4.3.8.4 *Alternative 2*

Alternative 2 would use updated NASS market dryland and irrigated rental rates with soil productivity adjustments for all contracts executed after December 1, 2009 while incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) would remain the same as the current program. Maintenance incentives are reduced to zero for General Signup practices in accordance with a procedure that became effective October 1, 2009 (CRP-644). Since no additional incentives would be offered to assure program acreage goals would still be met, this alternative, in comparison to the others considered, has more potential negative impacts for protected species. Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur under Alternative 2. A reduction in Targeted Signup could occur since no additional incentives would be offered under this alternative. As detailed in Section 4.11.8.4 Socioeconomic Resources, overall participation in the General or Targeted Signups would not decrease substantially, assuming a 4.5 million acre Targeted Signup goal, which is the existing condition. No significant negative impacts to protected species would occur from implementation of Alternative 2.

4.3.9 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives)

4.3.9.1 *Background/Methodology*

The potential impacts to protected species of the alternatives proposed to address this provision are qualitatively analyzed. Providing incentives to enroll agricultural lands in CRP benefits protected species through creating, enhancing, and restoring habitat that maximizes their survival.

4.3.9.2 *No Action Alternative*

Section 1244(a) Beginning Farmers and Ranchers currently provides for incentives to be offered to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs. Continuation of the ability to offer incentives stands to benefit protected species since more participation in the program by the affected populations would take marginal lands out of agricultural production and establish long-term vegetative covers that increases habitat; however, since both the action alternatives also expand to offer incentives to socially disadvantaged farmers and ranchers as well, both of these alternatives would potentially benefit protected species more than the No Action Alternative. Additionally, as discussed in Chapter 3.12 Environmental Justice, since the pool of farmers and ranchers that meet the definition of socially disadvantaged and associated acreage is relatively small, no significant negative impacts to protected species would occur from implementation of the program as currently configured.

4.3.9.3 *Alternative 1*

Alternative 1 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for cost share rates at least 25 percent above otherwise applicable rates (up to 90 percent), and advance payments of up to 30 percent of the amount determined for the purchase of materials and services. The USDA budget would require PAYGO offset which could potentially reduce services for other existing or potential participants

in CRP. Alternative 1 would provide the most incentive for the affected populations to participate in the program, enhancing the potential of reaching the full enrollment of authorized acres in CRP, thereby benefiting protected species. It would be more beneficial than the No Action Alternative since it extends incentives to socially disadvantaged farmers and ranchers; however, given the relatively small population that would qualify for these incentives and the small number of associated acres, the impact of this alternative on protected species would not be substantially different from the No Action Alternative or Alternative 2.

4.3.9.4 *Alternative 2*

Alternative 2 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for Signup Incentives, most likely for CPs that currently are eligible for SIPs. Under this alternative, the USDA budget would require a PAYGO offset, which could potentially reduce services for other existing or potential participants in CRP. Alternative 2 therefore provides more incentive for enrollments than the No Action Alternative, but is less beneficial than Alternative 1, which provides higher payments and thus more incentive to enroll; however, the size of the affected population and associated acreage would be relatively small; thus, no significantly negative impacts to protected species would occur from implementation of Alternative 2.

4.3.10 Provision 9 (Pollinator Conservation)

4.3.10.1 *Background/Methodology*

At least three bat, five bird, and 24 butterfly, skipper and moth species, one beetle and one fly species in the U.S. that are Federally listed as endangered under the ESA are pollinators (USFWS 2007). Pollinators have two basic habitat needs: a diversity of flowering plants across the spring, summer, and fall seasons and egg-laying or nesting sites (NRCS 2009c).

As described in Section 4.1.10.1, vegetation management techniques, such as grazing, mowing, prescribed fire and herbicide/insecticides can be both beneficial and detrimental to pollinators and no single management plan benefits all pollinators (Black *et al.* 2007). Pesticide and herbicide use on or near a pollinator planting can have significant negative effects on pollinator populations (NRCS 2009d) and protected species. Management techniques should be performed during invertebrate dormant season (November - March) to promote forb diversity and to reduce risks to pollinators and their nests (*Ibid.*). Disturbance of a site in portions and multi-year cycles provides a source from which pollinators can spread (Black *et al.* 2007).

Analysis of the potential impacts to wildlife of the alternatives considered to implement this provision are determined qualitatively. In general, taking lands out of agricultural production and establishing resource conserving covers benefits protected species through the creation, enhancement, and restoration of habitat.

4.3.10.2 *No Action Alternative*

Under the No Action Alternative, current general practices to reduce impacts to pollinators would continue to be employed. For example, NRCS Practice Standard Code 327, Conservation Cover, calls for spot treatment for invasive and noxious weed spraying to protect

forbs and legumes that benefit native pollinators and other wildlife. Also Practice Standard 511 Forage Harvest Management specifies not haying at peak flowering to avoid impacting pollinators. In addition, SAFE projects that target benefiting pollinators may also be implemented. As described in Sections 4.2.6 and 4.2.7, vegetation management techniques that ensure long-term viability of the conservation cover benefits pollinators and certain protected species. If not carefully applied, these management techniques may adversely impact pollinators, other protected species and wildlife, and vegetation. A site specific environmental evaluation prior to enrollment of land in CRP would identify the presence of any protected species. If any such species are identified, consultation with USFWS would determine the potential for any proposed activity to have negative impacts on protected species. If any negative impacts are determined, it is unlikely it would be approved, and if measures are identified to avoid impacts to protected species, these would be included in the Conservation Plan.

4.3.10.3 Alternative 1

Under Alternative 1, a new Pollinator Habitat Conservation Practice would be created with a goal of up to five percent of enrolled acres into new pollinator friendly habitat. In addition, existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators by including plant species beneficial for pollinators at specified composition rates, and other such practices. These practices would provide a variety of plant species which would also benefit other wildlife as food sources and habitat.

Some requirements for maintaining pollinator habitat may conflict with maintenance that benefits other species. Pollinator habitat requires minimal disturbance and timed maintenance to be successful. Land management is suggested to occur no more than once every three to six years to avoid impacts to eggs and larvae of insect pollinator species (NRCS 2009c). Alternative 1 would be more beneficial to pollinator protected species than the No Action Alternative or Alternative 2, since it would create a new CP with an enrollment target of 1.6 million acres (assuming a maximum 32 million acre CRP); however, this might reduce acreage in practices that benefit other types of protected species. A site specific environmental evaluation prior to enrollment of land in CRP would identify the presence of any protected species. If any such species are identified, consultation with USFWS would determine the potential for any proposed activity to have negative impacts on protected species. If any negative impacts are determined, it is unlikely it would be approved, and if measures are identified to avoid impacts to protected species, these would be included in the Conservation Plan. No significant negative impacts to protected species would occur from Alternative 1.

4.3.10.4 Alternative 2

Alternative 2 would modify existing practices to directly benefit pollinators. As such, the impacts of this alternative to protected species would be similar to those of the No Action Alternative. Alternative 2 would be potentially less beneficial for protected pollinator species than Alternative 1, which would enroll up to 1.6 million acres in a new Pollinator Habitat CP; however, it could increase habitat for other types of protected species, thus would not be substantially different for protected species than Alternative 1. A site specific environmental evaluation prior to enrollment

of land in CRP would identify the presence of any protected species. If any such species are identified, consultation with USFWS would determine the potential for any proposed activity to have negative impacts on protected species. If any negative impacts are determined, it is unlikely it would be approved, and if measures are identified to avoid impacts to protected species, these would be included in the Conservation Plan. No significant negative impacts to protected species would occur from implementation of Alternative 2.

4.4 WATER RESOURCES: FLOODPLAINS

4.4.1 Significance Criteria

Impacts to floodplains could be considered significant if implementation of an action resulted in adverse changes to water quality or quantity, threatened or damaged unique hydrologic characteristics, or violated established laws or regulations.

4.4.2 Provision 1 (National Conservation Initiatives)

4.4.2.1 *Background/Methodology*

Analysis of the potential impact to floodplains posed by the alternatives proposed to implement this Provision is qualitative. Potential impacts to floodplains can occur as a result of activities that impair their functionality, increasing flood potential and the severity of flood events. Taking lands out of agricultural production, establishing long-term vegetative covers, and restoring wetlands on floodplains on those lands benefits floodplains. For example, wetlands on CRP lands have significant potential to intercept and store precipitation that otherwise might contribute to downstream flooding (Gleason *et al.* 2008).

4.4.2.2 *No Action Alternative*

Under the No Action Alternative, CRP acreage will remain relatively unchanged from current acres. Continued enrollment to meet enrollment goals of the SAFE, Longleaf Pine, Wetland Initiative-Floodplains, Bottomland Hardwoods, Upland Bird Habitat Buffers, and Duck Nesting Habitat Prairie Pothole Region would provide positive benefits to floodplains. Specifically, the Wetland Initiative-Floodplains would continue to create and restore wetlands within floodplains, helping to protect floodplains from scour erosion by increasing excess water storage in the wetlands, slowing down runoff. Establishing bottomland hardwoods also serves to increase ground infiltration of precipitation or snowmelt, and slows the velocity of excess runoff that reaches floodplains, reducing floodplain erosion. Other initiatives, for example, riparian buffers included in CREPs establish vegetation that increases soil infiltration, slowing down runoff, resulting in beneficial long-term impacts to floodplains.

Activities associated with enrolling eligible land could potentially result in short-term, adverse impacts to floodplains. For example, site preparation earthmoving activities such as grading, leveling, and filling could temporarily alter the hydrology of floodplains and result in minor short-term adverse effects to floodplain functions. In addition, site preparation could include building structures (e.g., pipes, gates, and outlets) and earthmoving activities to construct dam, levees, and other structures that may be necessary to restore hydrology. These structures and earthmoving activities may temporarily alter floodplain hydrology and result in adverse short-

term effects on floodplain functions. To reduce these potential short-term impacts to floodplains, a site-specific Conservation Plan for each area would be prepared and site-specific BMPs would be used to mitigate any adverse impacts of implementing specific CPs. These impacts would only last until the CP would be permanently established and are considered minor compared to the overall long-term benefits of the CPs. These temporary impacts could be expected to last anywhere between one to three years.

Continuation of the program as currently configured would continue to benefit floodplains at a level slightly less than Alternative 1, but would be more beneficial than Alternative 2, which would reduce the wetland initiative. No significant negative impacts to floodplains would occur from implementation of the No Action Alternative.

4.4.2.3 Alternative 1

This alternative would address National CPAs, State, and to a certain extent regional conservation initiatives as currently provided for, but in addition, would offer three new national conservation initiatives: the Water Resource Protection Initiative, Highly Erodible Land Initiative, and Regional Restoration of Critical Wildlife Habitat Initiative. These new national conservation initiatives would target a combined 1.5 million acres that result in indirect benefits to floodplains. The Water Resource Protection Initiative to protect municipal water resources and water conservation efforts would result in an indirect benefit to floodplains. Through contracts and retirement of water rights, the protection of water resources would decrease potential water use and increase the functionality of floodplains. The Highly Erodible Land Initiative would result in beneficial impacts to floodplains, as a reduction in erodible surfaces and associated sedimentation, would cut down on the amount of sediment that potentially fill floodplains and cover critical habitat. The Regional Restoration of Critical Wildlife Habitat would provide an indirect benefit to floodplains as the growth of natural riparian plant communities and functions would help protect floodplains from scour erosion. Implementation of these initiatives would require PAYGO budget offset, hence, other services offered to participants may be reduced to pay for them.

Adoption of these initiatives could involve establishment activities and have the same short-term impacts as in the No Action Alternative. Mitigation would be the same as for the No Action Alternative, and require development of a site-specific conservation plan for each area and adoption of site-specific BMPs to mitigate any adverse impacts of implementing specific CPs.

Although Alternative 1 does stand to benefit floodplains indirectly, because of the relatively small amount of acreage set aside, the benefits are not substantially greater than those offered by the No Action Alternative. Alternative 1 would be more beneficial for floodplains than Alternative 2, because it would maintain current wetland initiatives at the same level as the No Action Alternative. In addition, PAYGO budget offsets could possibly reduce the number of acres authorized to enroll under practices more directly beneficial to floodplains, such as CP23 – Wetland Restoration on Floodplains, but the acreage set aside for these initiatives would be relatively small. No significant negative impacts to floodplains would occur under Alternative 1.

4.4.2.4 *Alternative 2*

Under Alternative 2, no changes to existing National CPAs, CREPs, or national conservation initiatives would occur, except the wetlands initiative would be reduced. Thus, the impacts of Alternative 2 are similar to those as the No Action Alternative, except wetland initiative acres would be lower. Currently, the wetlands initiative has a goal of 750,000 acres and a cumulative enrollment of 223,250 acres (FSA 2009a). While the current enrollment is much less than the goal, a reduction in the wetland initiative allowance would result in a reduction in the potential maximum benefits to floodplains, as the restored wetlands on floodplains have important functions, including reduction of erosive flood events. Thus, there would be a potential negative impact relative to both the No Action Alternative and Alternative 1 given the relatively low number of acres affected (no more than 750,000); however, the impact under Alternative 2 would be less than significantly negative.

4.4.3 Provision 2 (Maximum Enrollment)

4.4.3.1 *Background/Methodology*

Analysis of the potential impact to floodplains posed by the alternatives proposed to implement this Provision is qualitative. Potential impacts to floodplains can occur as a result of activities that impair their functionality, increasing flood potential and the severity of flood events. Taking lands out of agricultural production, establishing long-term vegetative covers, and restoring wetlands on floodplains on those lands benefits floodplains.

4.4.3.2 *No Action Alternative*

This alternative apportions 27.5 million acres to CRP General Signup and Targeted Signups (Continuous) acreage to 4.5 million acres of the total 32 million program acres authorized in FY 2010. Under the No Action Alternative, the balance between the General and Continuous sign-ups changes slightly from FY2009 levels toward Continuous Sign-up priorities, most notably increasing acres for Farmable Wetlands, SAFE, and Initiatives. Regular Continuous practices are scheduled at two million acres. Practices that most directly and indirectly benefit floodplains are enrolled under Continuous Signup such as CPs minimizing soil erosion (CP15, CP16, and CP24), buffers and filter strips reducing sedimentation (CP21, CP22, CP28, and CP30) and wetland restoration (CP23, CP27, CP31, CP38B, and CP39). As noted in recent investigations, the site-specific targeted application of CRP measures for environmentally sensitive areas can result in significant benefits for an area. For example, on-going CEAP watershed assessment studies are addressing the need to determine the environmental benefits and impacts to society of USDA conservation programs at the watershed scale (JSWC 2008, Richardson *et al.* 2008). As further research and investigations identify critical areas for targeted CRP implementation, the enrollment of these acreages would result in greater benefits due to their targeted nature, as opposed to general, non-targeted measures. The increase in targeted signups would result in benefits to floodplains, most notably a reduction in sediment, nutrient, and pesticide pollution loading potential to floodplains.

The No Action Alternative would not be as beneficial as Alternative 1 because it does not allocate as many acres to Targeted Signups that are more beneficial to floodplains. The No

Action Alternative would be slightly more beneficial than Alternative 2, which would apportion slightly less Targeted Signup acreage. No significant negative impacts to floodplains would occur under the No Action Alternative.

4.4.3.3 Alternative 1

This alternative maintains the maximum acreage limit at 32 million acres, but apportioning only 24 million acres to General Sign-up and eight million acres to Continuous Sign-up. As described above, the practices that benefit floodplains most directly are enrolled under Continuous Sign-up. Alternative 1 would be more beneficial to floodplains than the No Action Alternative if a large portion of the increased Targeted Signup acres target floodplains. If not, then Alternative 1 would be similar Alternative 2 and the No Action Alternative. No significant negative impacts to floodplains would occur under Alternative 1.

4.4.3.4 Alternative 2

Implementation of Alternative 2 would reduce the total CRP acreage to 24 million acres, with 20 million acres apportioned to General Signup and four million acres apportioned to Targeted Signups. This would be eight million acres less than either the No Action Alternative or Alternative 1. The apportionment of the acres of Targeted Signups would be similar to that of the No Action Alternative. This would result in negative impacts to floodplains, as the benefits currently received from General Sign-up CRP acreage would be substantially reduced. Reducing CRP acreage would likely cause an increase in agricultural production for these lands, which would result in a corresponding increase in sediment, nutrient, and pesticide pollution loading potential to floodplains, and could increase the velocity of runoff contributing to erosion of floodplains and the severity of flood events; however, the relative impact of returning these acres to agricultural production on a national scale would be small considering there are currently about 406 million acres of active cropland in the lower 48 States (NASS 2009a). Implementation of Alternative 2 could have significantly negative impacts on floodplains at the local level, at the county level, or in States that have a large amount of acreage leaving the program due to contract expirations scheduled to occur from FY 2010 to FY 2012.

4.4.4 Provision 3 (Alfalfa Crop History)

4.4.4.1 Background/Methodology

Analysis of the potential impact to floodplains posed by the alternatives proposed to implement this provision is qualitative based on the relative potential of allowing more or less acres to qualify for enrollment in CRP.

4.4.4.2 No Action Alternative

Under the No Action Alternative, the crop rotation practice would retain alfalfa in any rotation with multi-year grasses and legumes and/or summer fallow to meet crop history requirements. Currently, the crop rotation must have occurred from 1996 to 2001. No information is available to assess how many acres in CRP currently have qualified for enrollment under this alternative, but as discussed in Chapter 2, it is expected to be fairly small. Continued implementation of this existing provision enables additional types of land to be enrolled in CRP; however, alfalfa is a

perennial crop that provides surface cover year-round and is not tilled except for establishment. Enrollment of these types of acres into CRP does benefit floodplains by reducing sediment, nutrient, and pesticide pollution-loading potential to floodplains. The maintenance of continual alfalfa cover without tilling promotes water infiltration and reduces the velocity of runoff that contributes to floodplain erosion and the severity of flood events. In addition, alfalfa is irrigated with surface and groundwater in drier States. Retiring these lands from production could stabilize water levels in floodplains, reducing bank erosion; however, enrolling lands that have been cropped four out of the previous six years would achieve greater benefits to floodplains, as these lands are used more intensively.

Under the action alternatives, alfalfa alone in rotation with an eligible commodity may qualify for the program, which could conceivably result in more acres being able to qualify for CRP, but this may be offset by the new provision of having to meet a particular rotation interval rather than any rotation as permitted by current procedures. Thus, the No Action Alternative would be slightly more beneficial for floodplains than Alternative 1 or 2. No significant negative impacts to floodplains would occur under the No Action Alternative.

4.4.4.3 Alternative 1

Alternative 1 proposes a rotation interval of eight years comprised of six years of alfalfa and two years other eligible commodity, with the rotation occurring within 2002 to 2007, and may be comprised of alfalfa alone instead of with multiyear grasses, legumes, or summer fallow. More acres would qualify under Alternative 1 as opposed to Alternative 2, but potentially less than the No Action Alternative. As such, the provision would have negligible impacts on floodplains due to the limited number of acres available to enroll under the authorized 32 million program acres. No significant negative impacts to floodplains would occur from implementation of Alternative 1.

4.4.4.4 Alternative 2

Alternative 2 proposes a rotation interval of 12 years, with 10 years of alfalfa and two years other eligible commodity, with the rotation occurring within 2002 to 2007. Fewer acres would qualify under this alternative in comparison to the No Action Alternative and Alternative 1; however, the impact to floodplains would not be significantly negative due to the small number of acres that could be enrolled in under the 32 million acre program cap from FY 2010 to FY 2012.

4.4.5 Provision 4 (County Acreage Limitation Exception)

4.4.5.1 Background/Methodology

The analysis of the potential impacts of the alternatives on floodplains from implementation of the alternatives proposed is qualitative. In general, actions that result in more lands enrolled in CRP potentially benefit floodplains as lands are taken out of agricultural production and resource conserving covers are established; however, activities associated with enrolling and establishing eligible land could potentially result in short-term, adverse impacts to floodplains.

4.4.5.2 *No Action Alternative*

Currently, no more than 25 percent of a county's cropland may be enrolled in CRP and WRP, except when it is determined there would not be an adverse effect to the local economy and if operators in the county are having difficulties complying with highly erodible lands conservation requirements for working cropland, and excepting those acres enrolled under shelterbelt and windbreak practices. There is not currently an upward limit on acreage in excess; however, the authority to enroll no more than 32 million acres in the program still applies, and any limitations on the allotment of acres for certain CPs or initiatives per State would not be waived.

Allowing more acreage to be enrolled would result in benefits to floodplains, especially within the floodplain systems associated and downstream of each affected county. As agricultural land is taken out of production and enrolled in the CRP and WRP, the amount of sediments, nutrients, and pesticides coming off the converted acreage in each county would decrease. As a result, water flowing to floodplains would be of higher quality than runoff from previously cropped land. The restoration of natural riparian plant communities and functions would help protect floodplains from scour erosion, resulting in direct benefits to riparian areas. Furthermore, buffers would reduce scour erosion in floodplains and slow down runoff through increased infiltration and surface detention, resulting in beneficial long-term impacts to floodplains.

In areas where successive properties could enroll in CRP and WRP, the additive effects would likely be greater than the sum of the individual actions, resulting in an enhanced benefit to floodplains. Thus, the higher percentage of land in a county enrolled in CRP and WRP would result in increasingly greater benefits to floodplains. Enrollment and establishment could result in short-term negative impacts to floodplains as a result of increased soil loss, but development and implementation of site specific conservation plans with site specific BMPs would mitigate these impacts.

Implementation of the No Action Alternative benefits floodplains similar to that expected under Alternative 1, but would realize more potential benefits than Alternative 2, which except for additional acreage enrolled under CREP or Continuous Signup, caps additional CRP and WRP combined acreage at no more than 50 percent of a county's cropland. Because there are only 24 counties currently exceeding the cap, Alternatives 1 and 2 would not be appreciably different from current conditions. Thus, there would be no practical difference between the alternatives. No significant negative impacts to floodplains would occur from continuation of the existing provisions under the No Action Alternative.

4.4.5.3 *Alternative 1*

Under Alternative 1, a county may exercise its yes/no authority to allow additional acreage enrolled under CREP or Continuous CRP beyond the 25 percent cap. This alternative benefits floodplains more than Alternative 2 by allowing more land to be enrolled in CRP, but would be more restrictive than the No Action Alternative, which does not limit additional acres only to CREP or Continuous CRP; however, this difference would not be significant, because the total number of acres authorized for the program would still be 32 million acres, and the rate at which existing contracts are expected to expire until 2012 would allow only a relatively small amount of additional acreage to be enrolled in the program. No significantly negative impacts to floodplains would occur under Alternative 1.

4.4.5.4 *Alternative 2*

Implementation of Alternative 2 would allow an exception for CREP or Continuous CRP beyond the 25 percent cap, but with a limit of no more than 50 percent of a county's cropland enrolled in CRP. This alternative would be more restrictive than either the No Action Alternative or Alternative 1, and would be potentially less beneficial for floodplains, but because of the 32 million acre program limit and the rate of attrition from expected contract expirations, the impacts to floodplains are not expected to be appreciably different from Alternative 1 or significantly negative. Therefore, no significantly negative impacts to floodplains would occur under Alternative 2.

4.4.6 Provision 5 (Conservation Plan Management)

4.4.6.1 *Background/Methodology*

Analysis of the potential impacts of the alternatives considered on floodplains under Provision 5 is qualitative. Management actions implemented under CRP slow water movement, enabling sediment to precipitate, and nutrients to leach or be absorbed by plants before they reach surface waters. They further enhance aquatic habitat by moderating water temperatures, stabilizing stream banks, and restoring floodplains.

4.4.6.2 *No Action Alternative*

Currently, management as stipulated in the Conservation Plan is expected to occur and mid-contract management is required on contracts executed after FY 2004, and is voluntary for contracts accepted before that year. Under the No Action Alternative, MCM actions could indirectly impact floodplains negatively if the long-term health and viability of the vegetative cover is reduced, or potentially have short-term and localized impacts, such as temporary removal of ground cover from disking or prescribed burns. Activities such as too much disking, excessively short mowing, or improperly applied prescribed burns could damage vegetative covers, which would increase soil erosion, and potentially increase the amount and velocity of runoff that erodes floodplains. Adherence to current conservation practices, standards, and guidelines for MCM tasks reduces these potential impacts to floodplains.

The requirement for MCM on contracts executed after FY 2004 would result in a phased long-term improvement in floodplains, as more acreage would be subject to MCM in the future. The active management would help ensure the acreage would be managed to maximize the indirect benefits to floodplains; however, requiring MCM on an individual CP basis as a national standard imposes management that may not be applicable to local conditions. As the goal of MCM is to preserve the health and viability of the conservation cover, and this protects floodplains in the long-term, continuation of existing provisions would not be significantly negative for floodplains. Since MCM under current provisions would be required for all CPs, the No Action Alternative would have benefits similar to Alternative 2, but would be more beneficial than Alternative 1, where MCM would be undertaken only if included in the Conservation Plan. No significantly negative impacts would occur under the No Action Alternative.

4.4.6.3 *Alternative 1*

Under Alternative 1, management would be required throughout the contract, with MCM conducted only if stipulated in the Conservation Plan. Mid-contract management would not be required on an individual CP basis. This would provide the greater flexibility for only undertaking management tasks as may be applicable to the particular lands enrolled than either the No Action Alternative or Alternative 2. Negative impacts to floodplains could occur if appropriate MCM is not included in the plan. As such, this alternative would be less beneficial for floodplains than either the No Action Alternative or Alternative 2, where individual CPs require specific MCM be conducted; however, Alternative 1 would not result in significantly negative impacts to floodplains.

4.4.6.4 *Alternative 2*

Alternative 2 includes the flexibility in tailoring MCM to local conditions by requiring it in the Conservation Plan as needed, but in addition, gives States the ability to specify MCM by CP as appropriate to their region. This alternative provides clear guidance to program participants effectively maintaining the health and vigor of the conservation cover, which benefits floodplains. Long-term, beneficial impacts of Alternative 2 would be similar to the No Action Alternative and Alternative 1. Implementation of Alternative 2 would therefore not result in significantly negative impacts to floodplains.

4.4.7 Provision 6 (Harvesting CRP)

4.4.7.1 *Background/Methodology*

Haying and grazing in general has the potential to directly and indirectly affect floodplains. Livestock having access to surface water bodies have the potential to pollute water with nutrients mobilized by damage to stream banks and vegetation from trampling, and the addition of manure, which can in turn negatively affect floodplains. For this qualitative analysis, the potential impacts of haying and grazing on vegetation and soils that may lead to diminished floodplain functionality form the basis for impact assessment. Under haying and grazing activities, impacts to floodplains would most likely result from changes to rates of erosion, sedimentation, and nutrient loading from manure (USDA 2009).

4.4.7.2 *No Action Alternative*

As described in Chapters 1 and 2, currently there are several forms of harvest, haying, and grazing authorized on CRP. Payment reduction assessments vary per type and are not assessed under certain conditions for Limited Grazing. Prescribed grazing for the control of invasive species is currently only allowed to control kudzu. Generally, these activities are not authorized during the PNS for ground nesting birds, and except for emergency haying or grazing, can only occur at most once every three years, varying by State. Haying or grazing may only occur if included in the Conservation Plan. In addition, a site-specific environmental evaluation conducted on those particular lands proposed for enrollment in CRP would be conducted, and the potential impacts of haying and/or grazing on those lands would be assessed at that time.

Based upon the EAs being completed evaluating proposed changes to current managed haying and grazing frequencies in certain states, and in some cases the dates of the PNS, haying and grazing have the potential to adversely affect floodplains if the health and long-term viability of the conservation cover are threatened by excessive and prolonged vegetation removal from these activities. In addition, the managed haying and grazing EAs found no significant negative impacts to the health of vegetative covers, and therefore floodplains, occur from increasing the frequency of these activities from once every five or 10 years to once every three years, if properly applied. Rather, potentially significant impacts to vegetative covers could occur from harvest during key vegetation growth or dormancy states, or by periodic disturbance conducted too infrequently, which could diminish the health and vigor of grassland plants. Any action that removes soil cover has the potential to increase soil erosion, reduces infiltration of moisture into soils, and increases the quantity and potentially the velocity of runoff. These impacts could contribute to erosion of floodplains and the severity of flood events.

The No Action Alternative would not indirectly contribute to failure of the conservation cover because Conservation Practice Standard 511 Forage Harvest Management requires a minimum stubble height be retained to allow vegetation to recover by frost. Providing adequate rest between haying and grazing episodes would be attained, NRCS Conservation Practice Standards that address potential negative impacts (e.g., Forage Harvest Management 511 or Prescribed Grazing 528) are implemented, and haying or grazing would be adjusted in response to resource conditions on the land just prior to undertaking these activities, then the long-term viability of the conservation cover would be ensured, and floodplains are protected. More importantly, haying and grazing, if adequately controlled, mimic the historic disturbance regimes that maintain early succession grasslands, resulting in healthier CRP grass stands that will continue to benefit floodplains.

Under current provisions for managed haying and grazing, no more than 75 percent of the NRCS stocking rate for grazing is allowed, grazing can only occur in areas that are fenced, and neither activity can take place within 120 ft of surface water bodies. Further, NRCS practice standards require the Conservation Plan to include measures that disperses grazing animals, limiting the potential for concentrations of animal offal that could impact the quality of waters flowing to floodplains.

As discussed in Chapter 2, the amount of acreage actually hayed or grazed on CRP since authorization by the 2002 Farm Bill is fairly low. Under the No Action Alternative, it would be unlikely that there would be more than minor changes to historical rates of hay production and grazing on CRP acres based on the existing constraints. As discussed in Section 4.11.7.2, current production levels are fairly small when compared to total production levels within the combined counties containing those CRP acres, and total production at the State level. It can be assumed that the potential negative effects to floodplains would remain minor. As currently prescribed grazing is limited to controlling kudzu only, continuation of current procedures would be potentially less beneficial for floodplains than either of the action alternatives, as this tool would not be available to CRP participants. No significant negative impacts to floodplains would occur from continuation of existing provisions for haying and grazing under the No Action Alternative.

4.4.7.3 *Alternative 1*

Under Alternative 1 only those CPs currently authorized for managed haying and grazing, incidental grazing (gleaning), and harvest (biomass) would be authorized for routine grazing (including gleaning) and managed harvest. Any change to the established PNS, period (timing) of routine grazing and harvest, length of harvest, and frequency of routine grazing and harvest would require individual analysis under NEPA by those State Technical Committees desiring changes. Prescribed Grazing for control of invasive plant species other than kudzu would be authorized, but would not for CP23, CP23A, non-grass related CP25, CP27, CP31, or CP39-41 and if implemented, would occur only in accordance with a control plan included in the Conservation Plan. A payment reduction commensurate with economic value of the activity would be estimated on a percentage basis related to the percent of year the authorized activity would occur. No payment reduction would be applied to prescribed grazing for the control of invasive species.

Under Alternative 1, general impacts to floodplains from harvest and grazing would be similar to those discussed for the No Action Alternative. Since Alternative 1 allows prescribed grazing to control invasive species other than kudzu, it is more beneficial to floodplains than the No Action Alternative, but would have benefits similar to Alternative 2. Potential negative impacts to floodplains would be minimized by employing the same BMPs and following NRCS practice standards as described for the No Action Alternative. Harvesting (haying) and routine grazing benefits the health and vigor of the vegetative cover, reducing the potential for increasing soil erosion through vegetative loss, and therefore reducing sedimentation or increased erosion of floodplains.

Requiring additional State-level NEPA analysis of changes to the PNS, timing, and frequency of managed harvesting and routine grazing ensures potential negative environmental impacts would be determined and addressed on a local scale. A site-specific environmental evaluation would be conducted for particular lands proposed for enrollment in CRP and the potential impacts from managed harvest and routine grazing would be assessed at that time. No significant negative impacts to floodplains would occur under this alternative if the Conservation Plan would be followed and adapted to resource conditions just prior to harvesting or grazing, the CPs authorized for managed harvest or routine grazing do not change, and State-level NEPA would be completed for any proposed changes to the PNS, timing, and frequency of these activities prior to implementation.

4.4.7.4 *Alternative 2*

Alternative 2 provisions are the same as Alternative 1, but differ in that changes to CPs authorized for managed harvesting or routine and prescribed grazing would be permitted under Alternative 2; however, the changes to CPs would require additional NEPA analysis by those State Technical Committees desiring such changes. Under Alternative 2, impacts to floodplains would be similar to those discussed for Alternative 1, and more beneficial than the No Action Alternative, which only allows prescribed grazing to control invasive kudzu. No significant negative impacts to floodplains would occur from managed harvesting or routine grazing if these activities would be completed in accordance with existing standards, provisions, and guidelines, and the parameters for conducting these activities are stipulated in the Conservation Plan that

would be adjusted to resource conditions on the land prior to conducting these activities. Requiring additional State-level NEPA compliance prior to approving changes in which CPs would be authorized for managed harvesting or routine grazing, in addition to any changes in the current PNS, timing, length or frequency of managed harvesting or routine grazing established for individual States, ensures potential negative impacts to floodplains would be addressed on a local scale. A site-specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure, which would identify and address any potential negative impacts to floodplains posed by managed harvesting or routine grazing. Therefore, Alternative 2 would result in no significant negative impacts to floodplains.

4.4.8 Provision 7 (NASS Cash Rental Rates)

4.4.8.1 Background/Methodology

Analysis of the potential impacts on floodplains under Provision 7 is qualitative. Payment structure of CRP provides incentives or disincentives to enroll in the program. In general, retiring land from agricultural production and establishing conserving vegetative covers benefits floodplains.

4.4.8.2 No Action Alternative

Under the No Action Alternative, the existing annual rental payment rules with a soil productivity adjustment as described in Chapter 1 would continue to be implemented. Furthermore, Targeted Signup incentives (for CREP, non-CREP CCRP, and initiatives) would remain unchanged. In accordance with a procedure that became effective October 1, 2009 maintenance incentives remain the same for contracts executed before that date, but for contracts executed after that date, maintenance incentives are reduced to zero for General Signup practices (CRP-644). Under the existing program, benefits to floodplains would continue to accrue from FY 2010 to FY 2012, in largely the same places: any geographic shifts in the distribution of enrollments would more likely change in response to scheduled expiring acres. Furthermore, as discussed in Section 4.11.8.4, enrollment goals under both General and Targeted Signups would likely still be met utilizing current rates. The impacts of the No Action Alternative on floodplains would be similar to those of Alternative 1, as the socioeconomic analysis has determined both General and Targeted Signup goals similar to current levels would likely be met under Alternative 1. The No Action Alternative would be more beneficial to floodplains than Alternative 2; the latter would utilize NASS cash rental rates for all signups without additional incentives, which could result in falling short of current Targeted Signup enrollment goals. No significant negative impacts to vegetation would occur from the selection of the No Action Alternative.

4.4.8.3 Alternative 1

For new General Signup contracts after December 1, 2009, updated NASS market dryland and irrigated rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) may be increased to ensure program acreage targets would be achieved. Maintenance incentives

are reduced to zero for General Signup practices in accordance with the procedure that became effective October 1, 2009 (CRP-644). Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur. For example, NASS rates would aid substantial areas of floodplains in the Mississippi basin because rates in much of this area would increase (see Table 4.11.9). As determined by the socioeconomic analysis, both General and Targeted Signup enrollment goals similar to current levels would likely be met under Alternative 1. Alternative 1 would be more beneficial to floodplains than the No Action Alternative since NASS rates would be higher in the Mississippi basin. It would also be more beneficial than Alternative 2, since current Targeted Signup enrollment goals would more likely be met. No significantly negative impacts to floodplains would occur under Alternative 1.

4.4.8.4 Alternative 2

Alternative 2 would use updated NASS market dryland and irrigated rental rates with soil productivity adjustments for all contracts executed after December 1, 2009 while incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) would remain the same as the current program. Maintenance incentives are reduced to zero for General Signup practices in accordance with a procedure that became effective October 1, 2009 (CRP-644). Since no additional incentives would be offered to assure program acreage goals would still be met, this alternative, in comparison to the others considered, has more potential negative impacts for floodplains. Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur under Alternative 2. A reduction in Targeted Signup could occur since no additional incentives would be offered under this alternative. As detailed in Section 4.11.8.4 Socioeconomic Resources, overall participation in the General or Targeted Signups would not decrease substantially, assuming a 4.5 million acre Targeted Signup goal, which is the existing condition. No significant negative impacts to floodplains would occur from implementation of Alternative 2.

4.4.9 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives)

4.4.9.1 Background/Methodology

The potential impacts to floodplains of the alternatives proposed to address this provision are qualitatively analyzed. Providing incentives to enroll agricultural lands in CRP benefits floodplains by establishing protective vegetative conservation covers.

4.4.9.2 No Action Alternative

Section 1244(a) Beginning Farmers and Ranchers currently provides for incentives to be offered to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs. Continuation of the ability to offer incentives stands to indirectly benefit floodplains as more participation in the program by the affected populations would potentially reduce sediment, nutrient, and pesticide loading by taking marginal lands out of agricultural production and establishing long term resource conserving covers. There could be short-term, adverse impacts to floodplains related to establishment and site preparation earthmoving activities such as grading, leveling, and filling, which could temporarily alter the hydrology of floodplains or increase sedimentation. To reduce these potential short-term impacts to

floodplains, a site-specific conservation plan for each area would be prepared and site-specific BMPs would be used to mitigate any adverse impacts of implementing specific CPs. These impacts would only last until the CP is permanently established and are considered minor compared to the overall long-term benefits of the CPs. These temporary impacts could be expected to last anywhere between one to three years.

However, because Alternatives 1 and 2 also expand to offer incentives to socially disadvantaged farmers and ranchers as well, both of these alternatives would potentially benefit floodplains more than the No Action Alternative. As discussed in Chapter 3.12 Environmental Justice, since the pool of farmers and ranchers that meet the definition of socially disadvantaged is relatively small, no significant negative impacts to floodplains would occur from implementation of the program as currently configured under the No Action Alternative.

4.4.9.3 Alternative 1

Alternative 1 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for cost share rates at least 25 percent above otherwise applicable rates (up to 90 percent), and advance payments of up to 30 percent of the amount determined for the purchase of materials and services. The USDA budget would require PAYGO offset which could potentially reduce other program services. Alternative 1 provides the most incentive for the affected populations to participate in the program, enhancing the potential of reaching the full enrollment of authorized acres in CRP; however, given the relatively small population that would qualify for these incentives, the impact of this alternative on floodplains would not be substantially different from the No Action Alternative or Alternative 2. No significant negative impacts to floodplains would occur from implementation of Alternative 1.

4.4.9.4 Alternative 2

Under Alternative 2, there would be incentives added for socially disadvantaged, farmers, ranchers, and Indian Tribes to increase their access to conservation programs, most likely for CPs that currently are eligible for SIPs. Increased incentives would help take cropland out of production, establish conservation cover, and reduce sediment, nutrient, and pesticide loading, thus resulting in beneficial impacts to floodplains; however, the required PAYGO offset could potentially reduce other program services. Alternative 2 would be less beneficial as compared to Alternative 1 but greater than the No Action Alternative. As discussed above, the size of the affected population would be relatively small, thus, no significantly negative impacts to floodplains would occur from implementation of Alternative 2.

4.4.10 Provision 9 (Pollinator Conservation)

4.4.10.1 Background/Methodology

Analysis of the potential impacts to floodplains of the alternatives proposed to implement this provision is qualitative. Measures to benefit pollinators may have both positive and negative impacts on water quality and quantity, and thus, floodplains. In general, any activity that would remove vegetative cover could negatively impact floodplains.

4.4.10.2 No Action Alternative

Currently only general methods to reduce impacts to pollinators are offered in NRCS practice standards and technical guides (e.g., spot treatment of herbicides and pesticides, not harvesting at peak flowering). In addition, SAFE projects that target benefiting pollinators may also be implemented. Many methods to benefit pollinators have little potential to negatively impact floodplains, such as diverse plantings, and successive flowering over the entire season, while some indirectly benefit floodplains through reduced herbicide and pesticide application that may runoff into nearby waters; however, installation of SAFE projects and management activities to maintain the health and vigor of certain types of vegetative stands that ultimately benefit pollinators, such as disking and prescribed burns, have the potential to negatively impact floodplains if not carefully applied. Adherence to NRCS practice standards for this type of management, and tailoring the Conservation Plan to the individual lands enrolled, should adequately protect floodplains. The No Action Alternative would have impacts similar to Alternative 2, but would potentially be more beneficial than Alternative 1, which would devote acreage to a new CP with potentially fewer direct benefits for floodplains. No significant negative impacts to floodplains would occur from current procedures concerning pollinators.

4.4.10.3 Alternative 1

Under Alternative 1 a new Pollinator Habitat Conservation Practice would be created with a goal of up to five percent of enrolled acres into new pollinator friendly habitat. In addition, existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators by including plant species beneficial for pollinators at specified composition rates, and other such practices. Although modifying existing practices to benefit pollinators would have no potential to negatively impact soils, and indirectly, floodplains, creation of a CP that would apportion 1.6 million acres (based upon a maximum of 32 million acres in the program) could potentially reduce enrollments under CPs that directly reduce soil erosion at a substantive rate (such as buffer practices). As such, implementation of Alternative 1 could increase sediment, nutrient, and pesticide pollution loading potential to floodplains. Nearly eight times more erosion (and therefore, associated sediment, nutrient, and pesticide pollution loading) is reduced by enrollment in buffer practices than in general CRP practices; however, as the overall proportion of all CRP acres devoted to pollinators would be small, this potential negative impact on floodplains would be negligible. Alternative 1 would be less beneficial to floodplains than either the No Action Alternative or Alternative 2; however, because the overall proportion of all CRP acres devoted to pollinators under Alternative 1 would be small, this potentially negative impact on floodplains would not be significant.

4.4.10.4 Alternative 2

Under this alternative only the existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators. As such, the impacts of this alternative to floodplains would be similar to those of the No Action Alternative. Alternative 2 would be potentially more beneficial than Alternative 1, which would enroll up to 1.6 million acres in a new CP that, otherwise, might be enrolled in practices that substantially address soil erosion which contributes to sedimentation and introduction of pollutants to floodplains; however, as discussed above, the degree of this benefit to floodplains

would not be substantially different than either the No Action Alternative or Alternative 1. No significant negative impacts to floodplains would occur from implementation of Alternative 2.

4.5 WATER RESOURCES: GROUNDWATER

4.5.1 Significance Criteria

Impacts to groundwater could be considered significant if implementation of an action resulted in adverse changes to water quality or quantity, threatened or damaged unique hydrologic characteristics, or violated established laws or regulations.

4.5.2 Provision 1 (National Conservation Initiatives)

4.5.2.1 *Background/Methodology*

Analysis of the potential impact to groundwater posed by the alternatives proposed to implement this Provision is qualitative. Potential impacts to groundwater resources can occur as a result of land disturbances related to number of enrolled CRP acres, particularly for wetlands or floodplains initiatives. Converted cropland to CRP lands diminishes groundwater pumping needed to irrigate those areas once in production. The establishment of permanent native grasses and riparian buffers work to improve groundwater recharge rates, as native grasses require less water for growth, resulting in more percolation of precipitation into the groundwater.

4.5.2.2 *No Action Alternative*

Under the No Action Alternative, CRP acreage will remain relatively unchanged from current acres. The existing initiatives provide incentives to increase enrollment in key areas. Collectively and individually, the SAFE, Longleaf Pine, Wetland Initiative-Floodplains, Bottomland Hardwoods, Upland Bird Habitat Buffers, and Duck Nesting Habitat Prairie Pothole Region result in positive impacts to groundwater. For example, wetlands are reservoirs for rainwater and runoff. As water is released into the ground, it recharges the groundwater. Specifically, research in the High Plains in playa lakes has shown that CRP lands have higher groundwater levels than groundwater levels under adjacent croplands (NRCS 2008b). Native habitat and vegetation require less water and little or no nutrients or pesticides for growth, resulting in better groundwater quality and more percolation of precipitation into the groundwater.

The retirement of agriculture lands irrigated with groundwater would result in a reduction in the amount of groundwater used for irrigation, resulting in positive impacts to groundwater quantity in the associated region. Furthermore, the retirement of agriculture land from active agricultural practices would result in less fertilizers and pesticides being applied. As a result, groundwater recharge from land enrolled in FSA approved CPs is expected to be of higher quality than recharge from previously cropped land, resulting in further beneficial impacts to groundwater quantity and quality (FSA 2005, NRCS 2006b).

Idaho provides an historical example of the use of groundwater for agriculture irrigation. During the 1950s and 1960s, irrigated acreage continued to increase, but most new land was irrigated with groundwater. The shift in irrigation sources from surface water to groundwater since the mid-1960s resulted in massive impacts to groundwater storage and quantity in the Eastern

Snake River Plain Aquifer. Between 1975 and 1995, it was estimated that total groundwater storage declined on average about 350,000 acre-feet per year, a cumulative decrease of seven million acre-feet (NRCS 2006b). Converting cropland to conservation practices would remove land from active agriculture and diminish groundwater pumping needed to irrigate those acres. Native grasses require less water for growth, which would result in more percolation of precipitation into the groundwater, thereby increasing groundwater quantity.

Activities associated with enrolling eligible land could potentially result in short-term, adverse impacts to groundwater quality and quantity. For example, site preparation activities including building physical structures such as dikes and clearing enrolled land of undesirable plant species using chemicals such as herbicides and/or physical methods such as burning, disking, and plowing would have the potential to add nutrients and pesticides to surface water that recharges aquifers, thereby affecting groundwater quality. In order to establish desirable plants and control invasive species or noxious weeds until desired plants are established, acres enrolled in CRP may be irrigated, potentially affecting water quantity. To reduce these potential short-term impacts, a site-specific conservation plan for each area would be prepared and site-specific BMPs would be used to lessen any adverse impacts of implementing specific CPs. These impacts would only last until the CP would be permanently established and would be considered minor compared to the overall long-term benefits of the CPs. These temporary impacts could be expected to last anywhere between one to three years. The No Action Alternative would maintain groundwater benefits, yet less than Alternative 1, which includes a new national water quality and quantity initiative, but greater than benefits attained under Alternative 2, which reduces the wetland initiative. No significant negative impacts from implementation of the No Action Alternative would occur.

4.5.2.3 Alternative 1

Under Alternative 1, the Water Resource Protection Initiative to protect municipal water resources would result in a benefit to groundwater. Through contract, retirement of water rights, etc., the protection of groundwater resources on up to one million acres would increase the quality and quantity of groundwater for use by municipalities. The Highly Erodible Land Initiative would result in an indirect benefit to groundwater, as a reduction in erodible surfaces would increase the potential for surface water retention and in turn, groundwater recharge. In addition, an increase in long-term conservation cover would reduce surface water runoff, which in turn would increase subsurface flow. The Regional Restoration of Critical Wildlife Habitat would provide an indirect benefit to groundwater recharge.

Adoption of these initiatives could involve establishment activities and have the same short-term impacts as described for the No Action Alternative. These impacts would only last until the CP would be permanently established and are considered minor compared to the overall long-term benefits of the CPs. These temporary impacts could be expected to last anywhere between one to three years. Implementation of these initiatives would require PAYGO offsets, affecting other programs and potentially reducing the benefits of CRP. Overall, Alternative 1 would provide higher benefits to groundwater than the No Action Alternative and Alternative 2. No significant negative impacts would occur under Alternative 1.

4.5.2.4 *Alternative 2*

Under Alternative 2, there would be no new initiatives; thus, the impact analysis discussion for the No Action Alternative would be the same for all initiatives except the wetland initiative, as it would be reduced. Currently, the wetlands initiative has a goal of 750,000 acres and a cumulative enrollment of 223,250 acres. While the current enrollment is much less than the goal, a reduction in the wetland initiative allowance would result in a reduction in the potential maximum benefits to groundwater, as wetlands perform important functions that can result in benefits to groundwater. Thus, there would be potential negative impacts relative to both the No Action Alternative and Alternative 1. While there would be potential negative impacts under Alternative 2, they would be less than significantly negative, given the limited number of acres targeted by the wetland initiative.

4.5.3 Provision 2 (Maximum Enrollment)

4.5.3.1 *Background/Methodology*

Analysis of the potential impact to groundwater posed by the alternatives proposed to implement this provision is qualitative. The retirement of cropland that overlies groundwater vulnerable to agricultural contamination is one way that CRP has helped to improve groundwater quality. In addition, surface water conservation practices (e.g., creating vegetated riparian zones) function to slow flood flow, which allows water to spread and soak into the soil, thereby recharging local groundwater and extending the baseflow through the summer season (Schultz *et al.* 1994).

4.5.3.2 *No Action Alternative*

Under the No Action Alternative, the CRP enrollment would be capped at 32 million acres, slightly different than current enrollment, but a limit that will be met through expiration of contracts in early FY 2010, as discussed in Section 2.6.2.1. Up to 27.5 million acres are allocated for CRP General Signup and 4.5 million acres for Targeted Signups, distributed among SAFE, Farmable Wetlands, CREP, and regular CCRP.

As noted in recent investigations, the site-specific targeted application of CRP measures for environmentally sensitive areas can result in significant benefits for an area. For example, ongoing CEAP watershed assessment studies are addressing the need to determine the environmental benefits and impacts to society of USDA conservation programs at the watershed scale (JSWC 2008, Richardson *et al.* 2008). Thus, the increase in Targeted Signups would result in general benefits to groundwater. As further research and investigations identify critical areas for targeted CRP implementation, the enrollment of these acreages would result in greater benefits due to their targeted nature, as opposed to general, non-targeted measures.

Enrollment and establishment could result in short term negative impacts to groundwater resources as a result of site preparation activities, but development and implementation of site-specific conservation plans with site specific BMPs would lessen these impacts. The No Action Alternative would not be as beneficial as Alternative 1 because it does not allocate as many acres to Targeted Signups that are more beneficial to groundwater. The No Action Alternative would be slightly more beneficial than Alternative 2, which would apportion slightly less

Targeted Signup acreage. No significant negative impacts to groundwater would occur from implementation of the No Action Alternative.

4.5.3.3 Alternative 1

Implementation of Alternative 1 would maintain the maximum program acreage limit at 32 million acres, but reduces General Signup to 24 million acres and increases Targeted Signup eight million acres over the No Action Alternative. Alternative 1 would increase the amount of acreage for all targeted programs areas over the other alternatives analyzed.

Alternative 1 would increase the amount of targeted acreage for all of the targeted areas over the No Action Alternative and Alternative 2. As noted in Section 4.5.3.2, the targeted implementation of key signups would be an important element of increasing the overall benefits derived from the CRP program; many conservation practices benefiting water quality and quantity are only applied under Targeted Signup, including retirement of irrigated agricultural lands that directly increases groundwater quantity. Thus, increasing the amount of Targeted Signup acreage would result in beneficial impacts to groundwater, most notably a reduction in nutrient and herbicide/pesticide pollution loading potential to groundwater resources.

Enrollment and establishment could result in short term negative impacts to groundwater as a result of site preparation activities, but development and implementation of site-specific conservation plans with site specific BMPs would avoid or lessen these impacts. The beneficial impacts would be greater under Alternative 1 than either the No Action Alternative, which apportions fewer acres to Targeted Signup, or Alternative 2, which reduces total program acreage and has fewer Targeted Signup acres. No significantly negative impacts from implementation of Alternative 1 would occur.

4.5.3.4 Alternative 2

Implementation of Alternative 2 would reduce the total CRP acreage to 24 million acres, resulting in negative impacts to groundwater resources, as the benefits currently received from CRP acreage would be substantially reduced. Removing CRP acreage would likely result in an increase in agricultural production for these lands, which would result in a corresponding increase in nutrient and herbicide/pesticide pollution loading potential to groundwater, or increase groundwater pumping for irrigation.

As noted in Section 4.4.3.2, the targeted implementation of key signups would be an important element of increasing the overall benefits derived from the CRP program. The amount of acreage included under Alternative 2 for the combined Targeted Signups would be less than that proposed under the No Action Alternative, but half as much as Alternative 1. While it is important to focus Targeted Signups on key environmental areas, the reduced authorized acres would limit the potential benefits from each measure relative to either the No Action Alternative or Alternative 1. Reducing the overall amount of General Signup acreage under Alternative 2 could result in potentially significant negative impacts to groundwater on a local level, most notably from potentially returning these lands to groundwater irrigated agricultural production, and increasing nutrient and herbicide/pesticide pollution-loading potential to groundwater in areas with large amounts of CRP leaving the program.

4.5.4 Provision 3 (Alfalfa Crop History)

4.5.4.1 Background/Methodology

Analysis of the potential impact to groundwater posed by the alternatives proposed to implement this provision is qualitative based on the relative potential of allowing more or less acres to qualify for enrollment in CRP. Alfalfa requires a significant amount of water to produce one ton of crop as it has one of the highest average acre-feet of irrigation water applied per acre of crop. For example, in California, alfalfa is the single largest water user. Thus, any alfalfa land that would be taken out of production would result in beneficial impacts to groundwater, as nutrient and pesticide loading to groundwater would decrease. In areas where alfalfa is irrigated with groundwater, taking alfalfa out of production would reduce the demand on local groundwater supplies. In addition, decreasing alfalfa acreage reduces evaporation-transpiration rates, resulting in an increase in groundwater levels.

4.5.4.2 No Action Alternative

Under the No Action Alternative the crop rotation practice would retain alfalfa in any rotation with multi-year grasses and legumes and/or summer fallow to meet crop history requirements. Currently, the crop rotation must have occurred within 1996 to 2001. No information is available to assess how many acres in the CRP currently have qualified for enrollment under this alternative, but as discussed in Chapter 2, it would be relatively small. Continued implementation of this existing provision enables additional types of land to be enrolled in CRP. Enrollment of these types of acres into CRP does benefit groundwater by reducing potential usage of fertilizers and pesticides to surface water that recharges aquifers, thereby affecting water quality, and may retire lands irrigated with groundwater from production, directly benefiting groundwater quantity.

In order to establish desirable plants and control invasive species or noxious weeds until desired plants are established, acres enrolled in CRP may be irrigated, potentially affecting water quantity. To reduce these potential short-term impacts, a site-specific conservation plan for each area would be prepared and site-specific BMPs would be used to mitigate any adverse impacts of implementing specific CPs. These impacts would only last until the CP would be permanently established and are considered minor compared to the overall long-term benefits of the CPs. These temporary impacts could be expected to last anywhere between one to three years. Should unirrigated alfalfa land be taken out of production instead of land that was cropped four out of the previous six years, then the overall benefits to groundwater might be reduced. Under the action alternatives, alfalfa alone in rotation with an eligible commodity may qualify for the program, which could conceivably result in more acres being able to qualify for CRP, but this may be offset by the new provision of having to meet a particular rotation interval rather than any rotation as permitted by current procedures. Thus, the No Action Alternative would be slightly more beneficial for groundwater than Alternative 1 or 2. No significant negative impacts to groundwater would occur under the No Action Alternative.

4.5.4.3 *Alternative 1*

Alternative 1 proposes a rotation interval of eight years comprised of six years of alfalfa and two years other eligible commodity, with the rotation occurring between within 2002 to 2007. More acres would qualify under Alternative 1 as opposed to Alternative 2, but potentially less than the No Action Alternative. Alfalfa requires a significant amount of water to produce one ton of crop as it has one of the highest average acre-feet of irrigation water applied per acre of crop. For example, in California, alfalfa is the single largest water user. Thus, any alfalfa land that would be taken out of production under Alternative 1 would result in beneficial impacts to groundwater, as nutrient and pesticide loading to groundwater would decrease. In areas where alfalfa is irrigated with groundwater, taking alfalfa out of production would reduce the demand on local groundwater supplies. In addition, decreasing alfalfa acreage reduces evaporation-transpiration rates, resulting in an increase in groundwater levels. No significant negative impacts to groundwater resources would occur from implementation of Alternative 1.

4.5.4.4 *Alternative 2*

Alternative 2 proposes a rotation interval of 12 years, with 10 years of alfalfa and two years other eligible commodity, with the rotation occurring within 2002 to 2007, and may be comprised of alfalfa alone instead of with multiyear grasses, legumes, or summer fallow. Alfalfa requires a substantial amount of water to produce one ton of crop as it has one of the highest average acre-feet of irrigation water applied per acre of crop. Thus, any alfalfa land that would be taken out of production under Alternative 2 would result in beneficial impacts to groundwater, as nutrient and pesticide loading to groundwater would decrease. In areas where alfalfa is irrigated with groundwater, taking alfalfa out of production would reduce the demand on local groundwater supplies. In addition, decreasing alfalfa acreage reduces evaporation-transpiration rates, resulting in an increase in groundwater levels. Fewer acres would qualify under this alternative in comparison to the No Action Alternative and Alternative 1; however, the impact to groundwater would not be significantly negative due to the small number of acres that that could be enrolled in under the 32 million acre program cap from FY 2010 to FY 2012.

4.5.5 Provision 4 (County Acreage Limitation Exception)

4.5.5.1 *Background/Methodology*

The analysis of the potential impacts of the alternatives on groundwater resources from implementation of the alternatives proposed is qualitative. In general, actions that result in more lands enrolled in CRP potentially benefit groundwater as lands are taken out of agricultural production and resource conserving covers are established; however, activities associated with enrolling and establishing eligible land could potentially result in short-term, adverse impacts to groundwater.

4.5.5.2 *No Action Alternative*

Currently, no more than 25 percent of a county's cropland may be enrolled in CRP and WRP, except when it is determined there would not be an adverse effect to the local economy, and if operators in the county are having difficulties complying with highly erodible lands conservation requirements for working cropland, and excepting acreage enrolled under shelterbelt and

windbreak practices. There is not currently an upward limit on acreage in excess; however, the authority to enroll no more than 32 million acres in the program still applies, and any limitations on the allotment of acres for certain CPs or initiatives per State would not be waived.

Exceeding the acreage limitation of 25 percent of a county's cropland results in benefits to groundwater quality and quantity, especially within the groundwater basins beneath each affected county. As agriculture land would be taken out of production and enrolled in the CRP and WRP, the amount of nutrients and pesticides coming off the converted acreage in each county would decrease. As a result, groundwater recharge would be of higher quality than recharge from previously cropped land. In addition, removing land from active agriculture diminishes groundwater pumping needed to irrigate those acres, resulting in a localized reduction in groundwater use and thus a benefit to groundwater supply. The establishment of permanent native grasses and riparian buffers work to improve groundwater recharge rates, as native grasses require less water for growth, resulting in more percolation of precipitation into the groundwater. The higher percentage of land in a county enrolled in CRP and WRP would result in increasingly greater benefits to groundwater. These potential benefits would have the biggest benefits in counties overlying important local or regional aquifers (e.g., the Ogallala Aquifer is the Nation's most heavily used groundwater resource).

Enrollment and establishment could result in short term negative impacts to groundwater as a result of site preparation activities, including building physical structures such as dikes, and clearing enrolled land of undesirable plant species using chemicals such as herbicides and/or physical methods such as burning, disking, and plowing which would have the potential to add nutrients and pesticides to surface water that recharges aquifers; however, the development and implementation of site specific conservation plans with site specific BMPs would mitigate these impacts.

Implementation of the No Action Alternative would potentially result in benefit to groundwater similar to that expected under Alternative 1, but would realize more potential benefits than Alternative 2, which except for additional acreage enrolled under CREP or Continuous Signup, caps additional CRP and WRP combined acreage at no more than 50 percent of a county's cropland; however, because there are only 24 counties currently exceeding the cap, Alternatives 1 and 2 would not be appreciably different from current conditions. Thus, there would be no practical difference between the alternatives. No significant negative impacts to groundwater would occur under the No Action Alternative.

4.5.5.3 Alternative 1

Under Alternative 1, a county may exercise its yes/no authority to allow additional acreage enrolled under CREP or Continuous CRP beyond the 25 percent cap. This alternative benefits groundwater more than Alternative 2 by allowing more land to be enrolled in CRP, but would be more restrictive than the No Action Alternative, which does not limit additional acres only to CREP or Continuous CRP; however, this potential difference would not be significant, because the total number of acres authorized for the program would still be 32 million acres, and the rate at which existing contracts are expected to expire until 2012 would allow only a relatively small amount of additional acreage to be enrolled in the program. Implementation of Alternative 1 would benefit groundwater similar to that expected under the No Action Alternative, but would

realize more benefits than Alternative 2. No significantly negative impacts to groundwater would occur under Alternative 1.

4.5.5.4 Alternative 2

Implementation of Alternative 2 would allow an exception for CREP or Continuous CRP beyond the 25 percent cap, but with a limit of no more than 50 percent of a county's cropland enrolled in CRP. Alternative 2 would be more restrictive than either the No Action Alternative or Alternative 1, and would be potentially less beneficial for groundwater quality and quantity, but because of the 32 million acre program limit and the rate of attrition from expected contract expirations, the impacts to groundwater are not expected to be appreciably different from Alternative 1. No significantly negative impacts to groundwater would occur under Alternative 2.

4.5.6 Provision 5 (Conservation Plan Management)

4.5.6.1 Background/Methodology

Analysis of the potential impacts on groundwater resources under Provision 5 is qualitative. The application of the management conservation practices authorized under CRP for the acres enrolled in the program in general terms improve groundwater quality. For example, management ensuring the long-term viability of vegetated riparian zones and conservation buffers can reduce pollutant concentrations in groundwater, notably nitrate concentrations (FSA 2003).

4.5.6.2 No Action Alternative

Currently, management as stipulated in the Conservation Plan is expected to occur and mid-contract management is required on contracts executed after FY 2004, and is voluntary for contracts accepted before that year. Under the No Action Alternative, MCM actions could indirectly impact groundwater negatively if the long-term health and viability of the vegetative cover is reduced, or potentially have short-term and localized impacts, such as temporary removal of ground cover from disking or prescribed burns. Reduction of ground cover would reduce water infiltration to groundwater sources. Activities such as soil disturbance to repair dikes or buffer strips and applying herbicides and/or pesticides to control invasive species may have temporary negative impacts to groundwater quality and quantity. To reduce these potential short-term impacts, a site-specific Conservation Plan for each area would be prepared and site-specific BMPs would be used to avoid or lessen any adverse impacts of implementing specific MCM. These adverse impacts would be short-term, usually in a single growing season, but are considered minor compared to the overall long-term benefits to the CPs. Adherence to current conservation practices, standards, and guidelines for MCM tasks further reduces these potential impacts to groundwater.

The requirement for MCM on contracts executed after FY 2004 would result in a phased long-term improvement in groundwater, as more acreage would be subject to MCM in the future. The active management would help ensure the acreage would be managed to maximize the indirect benefits to groundwater; however, requiring MCM on an individual CP basis as a national standard imposes management that may not be applicable to local conditions. As the goal of MCM is to preserve the health and viability of the conservation cover, and this protects

groundwater in the long-term, continuation of existing provisions would not be significantly negative for groundwater. Since MCM under current provisions would be required for all CPs, the No Action Alternative would have benefits similar to Alternative 2, but would be more beneficial than Alternative 1, where MCM would be undertaken only if included in the Conservation Plan. No significantly negative impacts to groundwater would occur under the No Action Alternative.

4.5.6.3 Alternative 1

Under Alternative 1, management would be required throughout the contract, with MCM conducted only if stipulated in the Conservation Plan. Mid-contract management would not be required on an individual CP basis. This would provide the greater flexibility for only undertaking management tasks as may be applicable to the particular lands enrolled than either the No Action Alternative or Alternative 2. Negative impacts to groundwater could occur if appropriate MCM is not included in the plan. As such, this alternative would be less beneficial for groundwater than either the No Action Alternative or Alternative 2, where individual CPs require specific MCM be conducted; however, Alternative 1 would not result in significantly negative impacts to groundwater.

4.5.6.4 Alternative 2

Alternative 2 includes the flexibility in tailoring MCM to local conditions by requiring it in the Conservation Plan as needed, but in addition, gives States the ability to specify MCM by CP as appropriate to their region. This alternative provides clear guidance to program participants effectively maintaining the health and vigor of the conservation cover, which benefits groundwater resources through reduced nutrients and pesticides entering groundwater, and potentially less groundwater pumping. Long-term, beneficial impacts of Alternative 2 would be similar to the No Action Alternative and Alternative 1. Implementation of Alternative 2 would not result in significantly negative impacts to floodplains.

4.5.7 Provision 6 (Harvesting CRP)

4.5.7.1 Background/Methodology

Analysis of the potential impacts on groundwater resources under Provision 6 is qualitative. Grazing studies suggest that the specific grazing system used is not of dominant importance, but that good management is important. For example, low intensity grazing of pastures that are not fertilized does not usually cause significant nutrient impacts (Ohio State University 2005). In addition, while high nitrate concentrations can be found in groundwater beneath pastures that receive high nitrogen inputs, by reducing the amount of nitrogen applied to a grazing area, its concentrations in groundwater can be reduced to acceptable levels (Owens and Bonta 2004). Any harvesting or grazing activity leading to loss of the conservation cover could have a negative impact on groundwater due to increased runoff reducing groundwater infiltration.

4.5.7.2 No Action Alternative

As described in Chapters 1 and 2, currently there are several forms of harvest, haying, and grazing authorized on CRP. Payment reduction assessments vary among types and are not

assessed under certain conditions for Limited Grazing. Prescribed grazing for the control of invasive species is currently only allowed to control kudzu. Generally these activities are not authorized during the PNS, and except for emergency haying or grazing, can occur no more than once every three years, depending on the State. Haying or grazing may only occur if included in the Conservation Plan. In addition, a site-specific environmental evaluation would be conducted on those lands proposed for enrollment in CRP to determine the potential impacts of haying and/or grazing. In cases where haying or grazing were not previously covered in the Conservation Plan for lands already enrolled, the plan would be adjusted accordingly.

Under the No Action Alternative, the forms of authorized harvest, haying, and grazing on CRP lands would continue, although it would be unlikely that there would be more than minor changes to hay production and grazing on CRP acres based on the existing constraints (Section 4.11.7.2). As discussed in Chapter 2, the amount of acreage actually hayed or grazed on CRP since authorization by the 2002 Farm Bill is fairly low. Haying and grazing typically require the application of water, which, if coming from groundwater sources would result in a negative impact to groundwater resources. Improper grazing can compact soil or cause soil erosion that reduces water infiltration to groundwater and increase excess nutrients reaching groundwater. Based upon the EAs being completed evaluating changes to current managed haying and grazing frequencies and in some cases the dates of the PNS, haying and grazing can have significantly negative impacts on the conservation cover from excessive or prolonged harvest, from harvest during key vegetation growth or dormancy states, or harvest conducted too infrequently, which can diminish the long-term health and vigor of grassland plants. Loss of vegetative cover can reduce groundwater infiltration.

Measures to eliminate, minimize or mitigate any potential impacts to a less than significant level include restricting livestock access to surface water bodies that recharge groundwater, designing an appropriate stocking rate, ensuring adequate measures are taken so that vegetation recovers prior to frost, and ensuring livestock are adequately dispersed to prevent concentration of excess nutrients that could infiltrate to groundwater. Currently, no managed haying or grazing may be conducted within 120 ft of a permanent surface water body; managed grazing can only be conducted up to 75 percent of the NRCS stocking rate, limitations on vegetation removal are imposed by NRCS Practice Code 511 Forage Harvest Management, and Practice Code 528 Prescribed Grazing requires grazing plans include measures to disperse livestock. Moreover, haying and grazing activities, if properly managed, mimic the natural disturbance regimes that maintain the health and vigor of grasslands; therefore, continuing to stabilize soils, benefiting groundwater.

As currently authorized, prescribed grazing is limited to controlling kudzu only; continuation of current procedures is potentially less beneficial for groundwater than either of the action alternatives, as this tool would not be available to CRP participants. Provided adequate rest between haying and grazing episodes is attained, NRCS Conservation Practice Standards that address potential negative impacts (e.g., Forage Harvest Management 511 or Prescribed Grazing 528) are implemented, and haying or grazing is adjusted in response to resource conditions on the land just prior to undertaking these activities, then the long-term viability of the conservation cover is ensured, and groundwater is protected. No significantly negative impacts to groundwater would occur under the No Action Alternative.

4.5.7.3 *Alternative 1*

Under Alternative 1 only those CPs currently authorized for managed haying and grazing, incidental grazing (gleaning), and harvest (biomass) would be authorized for routine grazing (including gleaning and prescribed grazing) and managed harvest. Any change to the established PNS, period (timing) of routine grazing and harvest, length of harvest, and frequency of routine grazing and managed harvest by States would require individual analysis under NEPA by those State Technical Committees desiring changes.

Additionally, prescribed grazing would be allowed for control of invasive species other than kudzu, with no reduction of the annual rental rate, and if implemented, would occur only if included in the Conservation Plan. Prescribed grazing for control of invasive plant species would not be authorized for CP23, CP23A, non-grass related CP25, CP27, CP31, or CP39-41. A payment reduction commensurate with economic value of the activity would be estimated on a percentage basis related to the percent of year the authorized activity would occur. No payment reduction would be applied to prescribed grazing for the control of invasive species.

The general indirect and direct impacts of harvest and grazing of Alternative 1 to groundwater would be similar to the No Action Alternative. Negative impacts may be minimized by employing the same BMPs and following NRCS practice standards as described for the No Action Alternative. Harvesting (haying) and routine grazing benefits the health and vigor of the vegetative cover, limiting the potential for vegetative loss that would increase soil erosion and consequently reduce groundwater infiltration. Expanding the use of prescribed grazing under this alternative for control of additional invasive plant species other than kudzu protects groundwater by ensuring the conservation cover is healthy and viable in the long-term. Following NRCS Practice Standards and implementing BMPs would reduce potential negative impacts to groundwater through limiting the potential for livestock access to surface water that recharges groundwater, and excess nutrient accumulation that could pollute groundwater. Requiring additional State-level NEPA analysis of changes to the PNS, timing, and frequency of harvesting and routine grazing ensures potential negative environmental impacts would be determined and addressed on a local scale. A site-specific environmental evaluation would be conducted for particular lands proposed for enrollment in CRP and the potential impacts from managed harvest and routine grazing would be assessed at that time. No significant negative impacts to groundwater would occur under this alternative if the Conservation Plan is followed and adapted to resource conditions just prior to haying or grazing, the CPs authorized for harvest or routine grazing do not change, and State-level NEPA would be completed for any proposed changes to the PNS, timing, and frequency of these activities prior to implementation. The impacts of Alternative 1 to groundwater would be similar to those of Alternative 2, but more beneficial than the No Action Alternative, which only allows prescribed grazing to control kudzu.

4.5.7.4 *Alternative 2*

Alternative 2 provisions are the same as Alternative 1, but differ in that changes to CPs authorized for managed harvest or routine and prescribed grazing would be permitted under Alternative 2; however, the changes to CPs would require additional NEPA analysis by those State Technical Committees desiring such changes. As such, the impacts of Alternative 2 to groundwater would be similar to Alternative 1, but more beneficial than the No Action

Alternative, as prescribed grazing for controlling invasive species other than kudzu would be authorized. No significant negative impacts to groundwater would occur from managed harvest or routine grazing if these activities would be completed in accordance with existing standards, provisions, and guidelines, and the parameters for conducting these activities are stipulated in the Conservation Plan that would be adjusted to resource conditions on the land prior to initiating these activities. Requiring additional State-level NEPA compliance prior to approving changes in which CPs are authorized for harvesting or routine grazing, in addition to any changes in the current PNS, timing, or frequency of managed harvest or routine grazing established for individual States, ensures potential negative impacts to groundwater would be addressed on a local scale. A site specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure, which would identify and address any potential negative impacts to groundwater posed by managed harvesting or routine grazing. Similarly, existing Conservation Plans would require adjustment to include managed harvesting or routine grazing and a site assessment conducted for existing contracts. No significant negative impacts to groundwater would occur from implementation of Alternative 2.

4.5.8 Provision 7 (NASS Cash Rental Rates)

4.5.8.1 Background/Methodology

Analysis of the potential impacts on groundwater resources under Provision 7 is qualitative. In general, retiring land from agricultural production and establishing conserving vegetative covers benefits groundwater.

4.5.8.2 No Action Alternative

Under the No Action Alternative, the existing annual rental payment rules with a soil productivity adjustment as described in Chapter 1 would continue to be implemented. Furthermore, Targeted Signup incentives (for CREP, non-CREP CCRP, and initiatives) would remain unchanged. In accordance with a procedure that became effective October 1, 2009 maintenance incentives remain the same for contracts executed before that date, but for contracts executed after that date, maintenance incentives are reduced to zero for General Signup practices (CRP-644). Under the existing program, benefits to groundwater would continue to accrue within FY 2010 to FY 2012 in largely the same places: any geographic shift in the distribution of enrollments would change in response to scheduled expiring acres, but not due to continuation of existing rental rates. Both the No Action Alternative and Alternative 1 would maintain participation in CRP at similar levels nationally and have similar effects at that scale. In comparison to Alternative 2, which utilizes NASS cash rental rates for all signup types plus existing Targeted Signup incentives, the No Action Alternative is more beneficial, but not substantially so, as application of Alternative 2 rates would be less likely to meet the current Targeted Signup goal of 4.5 million acres. No significantly negative impacts to groundwater would occur from continuation of the program as currently constituted.

4.5.8.3 *Alternative 1*

For new General Signup contracts after December 1, 2009, updated NASS market dryland and irrigated rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) may be increased to ensure program acreage targets would be achieved. Maintenance incentives are reduced to zero for General Signup practices in accordance with the procedure that became effective October 1, 2009 (CRP-644). Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur, but overall participation in the program would not decrease. Both General and Targeted Signup goals would likely be met by this alternative. The impacts of Alternative 1 would be similar to the No Action Alternative, but more beneficial than Alternative 2 which if implemented, may not achieve Targeted Signup enrollment goals at current levels. No significant negative impacts to groundwater resources would occur under Alternative 1.

4.5.8.4 *Alternative 2*

Alternative 2 would use updated NASS market dryland and irrigated rental rates with soil productivity adjustments for all contracts executed after December 1, 2009 while incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) would remain the same as the current program. Maintenance incentives are reduced to zero for General Signup practices in accordance with a procedure that became effective October 1, 2009 (CRP-644). As no additional incentives would be offered to assure program acreage goals would still be met, this alternative in comparison to the others considered would have potential negative impacts for groundwater resources. Thus, Alternative 2 would be less beneficial than the No Action Alternative or Alternative 1. Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur. As detailed in Section 4.11.8.4 Socioeconomic Resources, overall participation in the General or Targeted Signups would not decrease substantially, assuming a 4.5 million acre Targeted Signup goal, which is the existing condition. No significant negative impacts to groundwater resources would occur from implementation of Alternative 2.

4.5.9 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives)

4.5.9.1 *Background/Methodology*

The potential impacts to groundwater of the alternatives proposed to address this provision are qualitatively analyzed. In general, providing incentives for retiring cropland and establishing conserving vegetative covers benefits groundwater.

4.5.9.2 *No Action Alternative*

Section 1244(a) Beginning Farmers and Ranchers currently provides for incentives to be offered to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs. Continuation of the ability to offer incentives stands to indirectly benefit groundwater resources by taking marginal lands out of agricultural production and establishing long-term resource conserving covers. There could be short-term, adverse impacts to groundwater resources related to establishment and site preparation activities that have the

potential to add nutrients and pesticides to surface water that recharges aquifers, thereby affecting water quality. To reduce these potential short-term impacts to groundwater, a site-specific conservation plan for each area would be prepared and site-specific BMPs would be used to mitigate any adverse impacts of implementing specific CPs. These impacts would only last until the CP would be permanently established and are considered minor compared to the overall long-term benefits of the CPs. These temporary impacts could be expected to last anywhere between one to three years.

However, because Alternatives 1 and 2 also expand to offer incentives to socially disadvantaged farmers and ranchers as well, both of these alternatives would potentially benefit groundwater more than the No Action Alternative. As discussed in Section 3.12 Environmental Justice, because the pool of farmers and ranchers that meet the definition of socially disadvantaged would be relatively small, no significant negative impacts to groundwater resources would occur under the No Action Alternative.

4.5.9.3 Alternative 1

Alternative 1 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for cost share rates at least 25 percent above otherwise applicable rates (up to 90 percent), and advance payments of up to 30 percent of the amount determined for the purchase of materials and services. The USDA budget would require PAYGO offset which could potentially reduce other program services. Alternative 1 would provide the most incentive for the affected populations to participate in the program, enhancing the potential of reaching the full enrollment of authorized acres in CRP; however, given the relatively small population that would qualify for these incentives, the impact of this alternative on groundwater resources would not be substantially different from the No Action Alternative or Alternative 2; therefore, no significantly negative impacts to groundwater would occur under Alternative 1.

4.5.9.4 Alternative 2

Under Alternative 2, there would be incentives added for socially disadvantaged, farmers, ranchers, and Indian Tribes to increase their access to conservation programs, most likely for CPs that currently are eligible for SIPs. Increased incentives would help take agriculture land out of production, establish conservation cover, and reduce nutrient and pesticide releases to surface waters that recharge aquifers and reduce pumping for irrigation, thus resulting in beneficial impacts to groundwater resources; however, the required PAYGO offset could potentially reduce other program services. Alternative 2 would be less beneficial as compared to Alternative 1, but of greater benefit than the No Action Alternative. No significantly negative impacts to groundwater resources would occur from implementation of Alternative 2.

4.5.10 Provision 9 (Pollinator Conservation)

4.5.10.1 Background/Methodology

Analysis of the potential impacts to groundwater of the alternatives proposed to implement this provision is qualitative. Measures to benefit pollinators may have both positive and negative

impacts on water quality and quantity, and thus, groundwater. In general, any activity that would remove vegetative cover could negatively impact groundwater.

4.5.10.2 No Action Alternative

Currently only general methods to reduce impacts to pollinators are offered in NRCS practice standards and technical guides (e.g., spot treatment of herbicides and pesticides, not harvesting at peak flowering). In addition, SAFE projects that target benefiting pollinators may also be implemented. Many methods to benefit pollinators have little potential to negatively impact groundwater, such as diverse plantings, and successive flowering over the entire season, while some indirectly benefit groundwater through reduced herbicide and pesticide application, and use of native plants that in many cases require less water, resulting in more percolation of precipitation into groundwater; however, installation of SAFE projects and management activities to maintain the health and vigor of certain types of vegetative stands that ultimately benefit pollinators, such as disking and prescribed burns, have the potential to negatively impact groundwater if not carefully applied.

Site preparation activities for installing conservation practices, including building physical structures such as dikes and clearing enrolled land of undesirable plant species would have the potential to reduce water infiltration to groundwater and may add nutrients and pesticides to surface water that recharges aquifers, thereby affecting water quality. In order to establish desirable plants and control invasive species or noxious weeds until desired plants are established, acres enrolled in CRP may be irrigated, potentially affecting water quantity. To reduce these potential short-term impacts, a site-specific conservation plan for each area would be prepared and site-specific BMPs would be used to minimize and mitigate any adverse impacts of implementing specific practices benefiting pollinators or from installation of the SAFE pollinator habitat. These impacts would only last until the CP would be permanently established (about one to three years) and are considered minor compared to the overall long-term benefits of the practice. The No Action Alternative would have impacts similar to Alternative 2, but would potentially be more beneficial than Alternative 1, which would devote acreage to a new CP with potentially fewer direct benefits for groundwater. No significant negative impacts to groundwater would occur from current procedures concerning pollinators.

4.5.10.3 Alternative 1

Under Alternative 1 a new Pollinator Habitat Conservation Practice would be created with a goal of up to five percent of enrolled acres into new pollinator friendly habitat. In addition, existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators by including plant species beneficial for pollinators at specified composition rates, and other such practices. Although modifying existing practices to benefit pollinators would have limited potential to negatively impact groundwater, creation of a CP that would apportion 1.6 million acres (based upon a maximum of 32 million acres in the program) could potentially reduce enrollments under CPs that more directly benefit groundwater, such as wetland restoration that recharges aquifers. As discussed above, pollinator habitat would be beneficial for groundwater if it includes more native plants that require less water for growth; however, as the overall proportion of all CRP acres devoted to pollinators would be small, these potentially negative and positive impacts on groundwater

would be negligible. Alternative 1 would be less beneficial to groundwater than either the No Action Alternative or Alternative 2; however, because the overall proportion of all CRP acres devoted to pollinators under Alternative 1 would be small, this potentially negative impact on groundwater would not be significant.

4.5.10.4 Alternative 2

Under this alternative only the existing conservation practices for wildlife, grass, buffer strips, windbreaks, shelterbelts, and trees would be modified to benefit native and managed pollinators. The modification of habitat to support pollinators would indirectly benefit groundwater resources by reducing water needs for growth and little or no additional use of nutrients or pesticides. Thus, there would be reduced nutrients and pesticides entering the groundwater, and less groundwater pumping. This alternative would have little potential to impact groundwater similar to the No Action Alternative, but would be potentially more beneficial than Alternative 1; however, as discussed above, the degree of this benefit to groundwater would not be substantially different than either the No Action Alternative or Alternative 1; therefore, no significantly negative impacts to groundwater would occur under Alternative 2.

4.6 WATER RESOURCES: SURFACE WATER

4.6.1 Significance Criteria

Impacts to surface water could be considered significant if implementation of an action resulted in adverse changes to water quality or quantity, threatened or damaged unique hydrologic characteristics, or violated established laws or regulations.

4.6.2 Provision 1 (National Conservation Initiatives)

4.6.2.1 Background/Methodology

Analysis of the potential impacts to surface water posed by the alternatives proposed to implement this provision is qualitative and quantitative. Potential impacts to surface water resources can occur as a result of land disturbances related to number of enrolled CRP acres, particularly for wetlands or floodplains initiatives. CRP contracts reduce soil erosion by hundreds of millions of tons each year. For example, CRP buffers on average trap 2.5 tons of soil per acre of buffer, 247.2 pounds of nitrogen per acre of buffer, and 41.2 pounds of phosphorus per acre of buffer (FAPRI 2007). This reduction of erosion cleans streams, lakes, and other bodies of water by reducing sediment and preventing nutrient and pesticide runoff carried by eroded topsoil. Producers who enroll acreage in CRP reduce their application of pesticides and nutrients, thus largely eliminating CRP lands as a source of pollution. Keeping chemicals out of water bodies decreases the risk of negative impacts to surface and groundwater quality. Retiring lands from irrigated agricultural production positively impacts both surface and groundwater quantity. Reducing irrigation decreases surface water diversions, increasing and stabilizing stream flow, and reducing pollutant loading downstream of irrigated fields.

4.6.2.2 *No Action Alternative*

Under the No Action Alternative, National Conservation Priority Areas and incentives would continue to encourage enrollment. Similarly, CREPs and initiatives implemented since the 2002 Farm Bill would remain unchanged, resulting in positive impacts to surface water. Continuation of the current program would reduce levels of nutrients and pesticides applied to land, potentially improving the water quality in receiving surface waters and decreasing negative impacts of agricultural chemicals on surface waters.

Under the No Action Alternative, the only incentive for the protection of municipal water sources are Continuous Signup opportunities and rental rate incentives for certain CPs in wellhead protection areas. Surface water quantity conservation is currently addressed with CREPs that target irrigated agricultural land retirement in specific watersheds within individual States, but no national initiative addressing water quantity is currently offered. The No Action Alternative would maintain water quality and quantity benefits, yet less than Alternative 1 which includes a national initiative addressing water conservation, but greater than those proposed under Alternative 2, under which existing initiatives continue with a reduction in the wetlands initiative. No significant negative impacts from implementation of the No Action Alternative would occur.

4.6.2.3 *Alternative 1*

Alternative 1 addresses National and State CPAs, State, and to some extent regional conservation initiatives. This alternative also offers three new national conservation initiatives: Water Resource Protection Initiative, Highly Erodible Land Initiative, and Regional Restoration of Critical Wildlife Habitat Initiative. Implementation of the new initiatives would require PAYGO offset in the USDA budget. Under the Water Resource Protection Initiative, up to one million acres would be taken out of crop production through contracts, retirement of water rights, and other avenues. This would result in minor benefits to water resources and would indirectly increase the quality and quantity of surface water.

Under the Water Resource Protection Initiative, the implementation of one million acres of associated buffers would benefit surface water quality. Using the presented pollutant-reduction loading rates, the enrollment of one million acres under the Water Resource Protection Initiative would result in a reduction of approximately 2.5 million tons, 427.2 million pounds, and 41.2 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies.

The retirement of agricultural lands irrigated with surface water would result in a reduction in the amount of surface water used for irrigation, resulting in positive impacts to surface water quantity in the associated region (ERS 2006). As an example, a change from irrigated cropland to CP2 (permanent native grasses) could be expected to have several beneficial effects on hydrology. In general, native grasses use less water on an annual basis than irrigated corn, thus a retirement would result in net water savings. Benefits would likely include decreased overall runoff, decreased evapotranspiration, increased base flow, and increased overall flow (FSA 2005). In addition, as surface water diversions reduce streamflow and degrade stream water quantity, enrolling acreage enrolled in CRP would result in improvements to water quantity and quality, as the surface water demand would decrease. Furthermore, a reduction in surface water

irrigation would result in more stable streamflow (i.e., less fluctuation in water levels), resulting in indirect positive impacts to riparian habitat (NRCS 2006b)

In addition to the reduction in the direct application of surface water for irrigation, the retirement of agricultural lands would also decrease the amount of water lost during delivery to the receiving acreage. The efficiency of surface water delivery to fields is often less than 50 percent, and at times, partial delivery suffers the entire loss. Thus, retiring land would also eliminate this “hidden” impact to water quantity; furthermore, retiring an entire field would maximize CRP water conservation objectives (FSA 2005).

As part of the Idaho CREP (FSA 2006), a comprehensive analysis of the potential ramifications on water quantity from land retirement was performed. In the analysis, the CREP determined that an increase in acreage enrolled in the CREP would result in an increase in surface water flow in the Snake River. As part of the analysis, it was assumed that, once enrolled in CREP, land would never be returned to irrigation (the “forever” scenario). After 15 years of CREP, the analysis estimated that about 50 percent of these benefits would be realized. It would take more than 100 years to realize 100 percent of benefits (*Ibid*). Thus, while the retirement of agriculture land would result in increase water quantity, the temporal aspect of this increase is important. Shorter enrollment (i.e., 10-15 years) would result in fewer benefits. The longer land is retained in a non-agricultural status (i.e., greater than 15 years), the greater the impact to water quantity.

To maximize the positive impacts to water quantity and quality stemming from land retirement, studies have demonstrated that conservation efficiency is achieved by targeting land that has the highest ratio of benefits to costs, rather than minimizing costs or maximizing benefits only – that is to say, by targeting farmers with the highest benefit (water use) to cost (expected returns from production) ratios. Thus, it is important to target conservation actions using the appropriate criteria while considering the differences among watersheds in pollution abatement efficiency. The design and application of non-uniform standards based on physical and economic characteristics of watersheds is necessary to achieve cost effectiveness over a large policy region like multiple watersheds (Yang *et al.* 2001). Under Alternative 1, reliably addressing the environmental benefits of each potential contract would be important. Doing so would help improve cost-effectiveness by selecting lands with the greatest potential environmental benefits for the least cost (Ferris and Siikamaki 2009).

Acres removed from active agricultural production would have the potential to result in less agricultural pollutants in surface water. The Highly Erodible Land Initiative would allow the removal of up to 250,000 acres of land with an EI greater than 50 from crop production and result in a direct benefit to surface water as a reduction in erodible surfaces would reduce sedimentation of surface waters. The Regional Restoration of Critical Wildlife Habitat would provide a direct benefit to surface water as the growth of natural riparian plant communities and functions would reduce sediment, nutrient, and pesticide loading to surface water bodies. In addition, riparian buffers would also create shade to lower water temperature, stabilize and restore damaged stream banks, and reduce erosion of stream banks, which all improve water quality. As the costs of these initiatives require offset in the USDA budget under PAYGO, total gains may be tempered if other program services are reduced. Overall, Alternative 1 would be more beneficial to surface water than the No Action Alternative and Alternative 2. No significantly negative impacts to surface water would occur under Alternative 1.

4.6.2.4 *Alternative 2*

Under Alternative 2, there would be no changes to existing National CPAs, CREPs, or national conservation initiatives except for the reduction of the wetlands initiative. There would potentially be less wetland restoration activities that reestablish native vegetation which reduces downstream flooding, and stream bank and shoreline erosion, and in turn, improves surface water quality. A reduction in the wetland initiative allowance would result in a reduction in the potential maximum benefits to surface water quality, as the wetlands initiative restores and enhances important functions that would result in direct benefits to surface water quality. Therefore, implementation of Alternative 2 would be less beneficial for surface water than Alternative 1 and the No Action Alternative; however, because the wetland initiative goal is only 750,000 acres and current enrollment is less than the goal, the reduction would not be significantly negative. Alternative 2 would still provide incentives for landowners to enroll in CRP, taking agricultural lands out of production and establishing resource conserving covers that improve water quality.

4.6.3 Provision 2 (Maximum Enrollment)

4.6.3.1 *Background/Methodology*

Analysis of the potential impacts to surface water posed by the alternatives proposed to implement this provision is qualitative. CRP enrollments reduce water erosion potential by establishing vegetative covers that improve soil structure and increase the standing live biomass and crop residues. The vegetation reduces runoff velocity and intercepts sediment before it enters surface waters. Except to establish cover, CRP acres rarely receive fertilizer applications, reducing nutrients in percolation and runoff. CRP acres also reduce nitrogen and phosphorus runoff and percolation by establishing and maintaining a year-round vegetative cover that both intercepts nutrients before they enter surface waters and uses nutrients for growth (FAPRI 2007).

The FAPRI study estimating water quality benefits of CRP determined that an acre of CRP buffer has a greater impact at reducing pollutant-reduction loading rates entering water bodies than an acre of CRP field practice because buffers are situated and designed to intercept runoff from other fields in the watershed. Specifically, while the estimated national average reduction from CRP field practices is 2.1 tons of soil per acre of field, 7.7 pounds of nitrogen per acre of field, and 1.7 pounds of phosphorus per acre of field, the FAPRI study determined that CRP buffers on average trap 2.5 tons of soil per acre of buffer, 247.2 pounds of nitrogen per acre of buffer, and 41.2 pounds of phosphorus per acre of buffer. Thus, the buffer estimates are a more direct indicator of water quality benefits than the field estimates. Because buffers are strategically located to intercept soil and nutrients before they reach surface waters, any soil and nutrients not trapped by the buffer likely reach the receiving water body (FAPRI 2007). These pollutant-reduction rates are used in the following analysis.

4.6.3.2 *No Action Alternative*

Under the No Action Alternative a total of 32 million acres would be authorized in FY 2010, with 27.5 million acres allocated for CRP General and 4.5 million acres for Targeted Signups.

The enrollment of 32 million acres would contribute to a reduction in TMDLs from agricultural runoff by trapping suspended sediments and contaminants in water and retaining and/or transforming them through a variety of biological and chemical processes before they reach downstream rivers, streams, and other water bodies. Using the average CRP field pollutant-loading reduction rates presented above, the enrollment of 27.5 million acres in the General Signup would result in a reduction of approximately 57.75 million tons, 211.75 million pounds, and 46.75 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies.

Under the No Action Alternative, the Targeted Signups would provide for acreage devoted to CREP, farmable wetlands, SAFE, and initiatives resulting in benefits to surface water. For example, the installation of filter strips would help reduce the amount of nutrients, sediments, and other non-point pollutants that enter surface water. Using the average CRP buffer pollutant-loading reduction rates presented above, the Targeted Signup of 4.5 million acres would result in a reduction of approximately 11.25 million tons, 1.1 billion pounds, and 185.4 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies. Since not all acreage enrolled under Continuous Signup would be buffers, these estimates are offered as an approximate maximum potential benefit.

As noted in recent investigations, the site-specific targeted application of CRP measures for environmentally sensitive areas can result in significant benefits for an area. For example, on-going CEAP watershed assessment studies are addressing the need to determine the environmental benefits and impacts to society of USDA conservation programs at the watershed scale (JSWC 2008, Richardson *et al.* 2008). As further research and investigations identify critical areas for targeted CRP implementation, the enrollment of these acreages would result in greater benefits due to their targeted nature, as opposed to general, non-targeted measures. The increase in Targeted Signups would result in general benefits to surface water, most notably a reduction in sediment, nutrient, and pesticide pollution loading potential to surface water. The No Action Alternative would not be as beneficial for surface waters as Alternative 1 because it does not allocate as many acres to Targeted Signups that are more beneficial to water quality. The No Action Alternative would be slightly more beneficial than Alternative 2. No significant negative impacts would occur under the No Action Alternative.

4.6.3.3 Alternative 1

Implementation of Alternative 1 would maintain the maximum acreage limit at 32 million acres, but reduces General Signup to 24 million acres and increases Continuous Signup eight million acres over the No Action Alternative. Alternative 1 would increase the amount of acreage for all of targeted areas over the other alternatives analyzed.

Using the average CRP field pollutant-loading reduction rates presented above, the enrollment of 24 million acres in the General Signup would result in a reduction of approximately 50.4 million tons, 184.8 million pounds, and 40.8 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies. Using the average CRP buffer pollutant-loading reduction rates presented above, the Targeted Signup of eight million acres would result in a reduction of approximately 20 million tons, 1.9 billion pounds, and 329.6 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies. Since not

all acreage enrolled under Continuous Signup would be buffers, these estimates are offered as an approximate maximum potential benefit.

As noted in Section 4.6.3.2, and demonstrated by the pollutant-reduction estimates above, the targeted implementation of key signups would be an important element of increasing the overall benefits derived from the CRP program. The establishment of vegetative covers, riparian buffers, and filter strips, and the restoration of wetland, riparian habitat, and floodplains would reduce nitrogen, phosphate, and sediment loading from agricultural lands; these actions would produce benefits on a larger scale and could improve the water quality of the large regions (e.g., the Mississippi River Basin and the Gulf of Mexico). For example, the restoration of wetlands would reduce nitrogen, phosphorus, and sediment runoff from agricultural lands, reducing the hypoxic condition linked to the Mississippi River and its tributaries. Furthermore, the improvement in surface water quality could lead to a decrease in the number of streams and rivers on the 303(d) list.

The beneficial impacts would be greater under Alternative 1 than either the No Action Alternative or Alternative 2; increasing the amount of Targeted Signup acreage would result in beneficial impacts to surface water resources, most notably a reduction in sediment, nutrient, and pesticide pollution loading potential to surface water resources. No significant negative impacts to surface water quality would occur under Alternative 1.

4.6.3.4 Alternative 2

Implementation of Alternative 2 would reduce the total CRP acreage to 24 million acres, eight million acres less than the other alternatives analyzed. Twenty million acres would be apportioned to General Signup and four million acres apportioned to Targeted Signups. This would result in negative impacts to surface water resources, as the benefits received from CRP acreage would be substantially reduced as CRP acreage reverts to cropland. Removing CRP acreage would likely result in an increase in agricultural production on these lands, with a corresponding increase in sediment, nutrient, and herbicide and pesticide pollution loading potential to surface water.

Using the average CRP field pollutant-loading reduction rates presented above, the enrollment of 20 million acres in the General Signup would result in a reduction of approximately 42 million tons, 154 million pounds, and 34 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies. Using the average CRP buffer pollutant-loading reduction rates presented above, the Targeted Signup of four million acres would result in a reduction of approximately 10 million tons, 988 million pounds, and 164.8 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies. Since not all acreage enrolled under Continuous Signup would be buffers, these estimates are offered as an approximate maximum potential benefit.

As noted in Section 4.6.3.2, and demonstrated by the pollutant-reduction estimates above, The targeted implementation of key signups would be an important element of increasing the overall benefits derived from the CRP program. The amount of acreage included under Alternative 2 for the Targeted Signups would be less than or equal to that proposed under the No Action Alternative but half as much as Alternative 1, assuming that conservation covers are lost and

the land returns to crop production. While it is important to focus Targeted Signups on key environmental areas, the reduced authorized acres would limit the potential benefits from each measure relative to either the No Action Alternative or Alternative 1. Reducing the overall amount of General Signup acreage under Alternative 2 could result in potentially significant negative impacts to surface water on a local level, most notably an increase in sediment, nutrient, and pesticide pollution-loading potential to surface water in areas where large amounts of land would leave the program from FY 2010 to FY 2012.

4.6.4 Provision 3 (Alfalfa Crop History)

4.6.4.1 Background/Methodology

Analysis of the potential impact to surface water posed by the alternatives proposed to implement this provision is qualitative based on the relative potential of allowing more or less acres to qualify for enrollment in CRP. Alfalfa requires a relatively high amount of water per acre; thus, any reduction in alfalfa production would reduce the amount of water applied, resulting in a direct benefit to surface water quantity as the amount of surface water used for agriculture production would decrease.

4.6.4.2 No Action Alternative

Under the No Action Alternative, the crop rotation practice would retain alfalfa in any rotation with multi-year grasses and legumes and/or summer fallow to meet crop history requirements. Currently, the crop rotation must have occurred within 1996 to 2001. No information is available to assess how many acres in the CRP currently have qualified for enrollment under this alternative, but as discussed in Chapter 2, it would be fairly small. Continued implementation of this existing provision enables additional types of land to be enrolled in CRP; however, alfalfa is a perennial crop that provides surface cover year-round and is not tilled except for establishment. Enrollment of these types of acres into CRP does benefit surface water by reducing potential usage of fertilizers and pesticides that may runoff into nearby water bodies, however, would be potentially less beneficial than enrolling more intensively utilized cropland. In order to establish desirable plants and control invasive species or noxious weeds until desired plants are established, acres enrolled in CRP may be irrigated, potentially affecting water quantity. This would be a short-term impact; a site-specific conservation plan for each area would be prepared and site-specific BMPs would be used to mitigate any adverse impacts of implementing specific CPs.

Should alfalfa land be taken out of production instead of land that was cropped four out of the previous six years then the overall benefits might be reduced. Under the action alternatives, alfalfa alone in rotation with an eligible commodity may qualify for the program, which could conceivably result in more acres being able to qualify for CRP, but this may be offset by the new provision of having to meet a particular rotation interval rather than any rotation as permitted by current procedures. Thus, the No Action Alternative would be slightly more beneficial for surface water than Alternative 1 or 2. No significant negative impacts to surface water would occur under the No Action Alternative.

4.6.4.3 *Alternative 1*

Alternative 1 proposes a rotation interval of eight years comprised of six years of alfalfa and two years other eligible commodity, with the rotation occurring between within 2002 to 2007, and may be comprised of alfalfa alone instead of with multiyear grasses, legumes, or summer fallow. More acres would qualify under Alternative 1 as opposed to Alternative 2, but potentially less than the No Action Alternative. As such, the provision would have negligible impacts on surface water due to the limited number of acres that would be qualified for enrollment in comparison to acres that meet crop history requirements with other eligible commodities. Any alfalfa land that would be taken out of production under Alternative 1 would result in direct beneficial impacts to surface water as sediment, nutrient, and pesticide loading into surface water would decrease. Alfalfa requires a relatively high amount of water per acre; thus, any reduction in alfalfa production would reduce the amount of water necessary for the conservation cover. The greatest benefit would be in the States that have the largest amount of irrigated alfalfa cropland. While South Dakota and Montana produce the highest amounts of alfalfa on an annual basis, 2.0 and 1.9 million acres in 2007 respectively, only 3.8 percent and 37.7 percent of that (75,913 and 703,960 acres respectively) was irrigated (NASS 2009b). The States with the greatest amount of irrigated alfalfa cropland are California (963,086 acres) and Idaho (861,092 acres). No significant negative impacts to surface water resources would occur from implementation of Alternative 1.

4.6.4.4 *Alternative 2*

Alternative 2 proposes a rotation interval of 12 years, with 10 years of alfalfa and two years other eligible commodity, with the rotation occurring within 2002 to 2007. As discussed in Alternative 1, any alfalfa land that would be taken out of production would result in direct beneficial impacts to surface water. Similarly, a reduction of irrigated alfalfa cropland would decrease the amount of surface water necessary for agriculture production. Fewer acres would qualify under this alternative in comparison to the No Action Alternative and Alternative 1; however, the impact to surface water would not be significantly negative due to the small number of acres that that could be enrolled under the 32 million acre program cap from FY 2010 to FY 2012.

4.6.5 Provision 4 (County Acreage Limitation Exception)

4.6.5.1 *Background/Methodology*

The analysis of the potential impacts of the alternatives on surface water resources from implementation of the alternatives proposed is qualitative. In general, actions that result in more lands enrolled in CRP potentially benefit surface water as lands are taken out of agricultural production and resource conserving covers are established; however, activities associated with enrolling and establishing eligible land could potentially result in short-term, adverse impacts to surface water.

4.6.5.2 *No Action Alternative*

Currently, no more than 25 percent of a county's cropland may be enrolled in CRP and WRP, except when it is determined there would not be an adverse effect to the local economy, and if

operators in the county are having difficulties complying with highly erodible lands conservation requirements for working cropland, and excepting for acres enrolled under shelterbelt and windbreak practices. There is not currently an upward limit on acreage in excess; however, the authority to enroll no more than 32 million acres in the program still applies, and any limitations on the allotment of acres for certain CPs or initiatives per State would not be waived. Exceeding the acreage limitation of 25 percent of a county's cropland results in more land being taken out of agricultural production and reduces the amount of sediments, nutrients, and pesticides coming off the converted acreage. This benefits surface water, especially within systems associated and downstream of each affected county. In addition, as cropland would be converted to CRP acreage, the amount of irrigation would decrease, resulting in a beneficial impact to surface water quantity. Implementation of the No Action Alternative would potentially result in benefits to surface water similar to that expected under Alternative 1, but would realize more potentially benefits than Alternative 2, which except for additional acreage enrolled under CREP or Continuous Signup, caps additional CRP and WRP combined acreage at no more than 50 percent of a county's cropland. Because there are only 24 counties currently exceeding the cap, Alternatives 1 and 2 would not be appreciably different from current conditions. Thus, there would be no practical difference between the alternatives. No significant negative impacts to surface water would occur from implementation of the No Action Alternative.

4.6.5.3 Alternative 1

Under Alternative 1, a county may exercise its yes/no authority to allow additional acreage enrolled under CREP or Continuous CRP beyond the cap, which stipulates no more than 25 percent of a county's cropland may be enrolled in CRP and WRP combined, with no additional per county acreage limitation. This alternative would potentially benefit surface water more than Alternative 2 by allowing more land to be enrolled in CRP, but would be more restrictive than the No Action Alternative, which does not limit additional acres only to CREP or Continuous CRP; however, this difference would not be significant, because the total number of acres authorized for the program would still be 32 million acres, and the rate at which existing contracts are expected to expire until 2012 would allow only a relatively small amount of additional acreage to be enrolled in the program. No significantly negative impacts to surface water would occur under Alternative 1.

4.6.5.4 Alternative 2

Implementation of Alternative 2 would allow a county to exercise its yes/no authority for an exception for CREP or Continuous CRP beyond the 25 percent cap, but with a limit of no more than 50 percent of a county's cropland enrolled in CRP. This alternative would be potentially more restrictive than either the No Action Alternative or Alternative 1, and would be potentially less beneficial for surface water quality and quantity as compared to the other alternatives; however, because of the 32 million acre program limit and the rate of attrition from expected contract expirations, the impacts to surface water are not expected to be appreciably different from Alternative 1 or significantly negative.

4.6.6 Provision 5 (Conservation Plan Management)

4.6.6.1 *Background/Methodology*

Analysis of the potential impacts on surface water resources under Provision 5 is qualitative. The application of the management conservation practices authorized under CRP for the acres enrolled in the program in general terms improve water quality and ensure the long-term health and viability of the conservation cover, protecting soil and reducing runoff. The vegetation in turn also has the ability to absorb excess nitrogen and slow surface transport of herbicides and pesticides. Current conservation practices on CRP acres decrease the amount of contaminants flowing uninhibited off agricultural cropland into streams, lakes, and other water bodies.

4.6.6.2 *No Action Alternative*

Currently, management as stipulated in the Conservation Plan is expected to occur and mid-contract management is required on contracts executed after FY 2004, and is voluntary for contracts accepted before that year. Some MCM activities potentially negatively impact surface water, such as disking, prescribed burns, and activities that could threaten the health and viability of the established vegetative cover (e.g., excessively short mowing). These management activities also potentially result in short-term, temporary localized adverse impacts to surface water quality and quantity. Management actions on CRP enrolled land may include additional soil disturbance from disking, to repair dikes or buffer strips, applying herbicides and/or pesticides to control invasive species, or irrigating land during critical growing periods of drought years. To reduce these potential short-term impacts, a site-specific Conservation Plan for each area would be prepared and site-specific BMPs would be used to minimize any adverse impacts of implementing specific management techniques.

As the goal of MCM is to preserve the health and viability of the conservation cover, the No Action Alternative would maintain long-term continued beneficial impacts to surface water resources (i.e., reduced sediments, nutrients and pesticides entering the surface water, and less surface water pumping). The requirement for MCM on contracts executed after FY 2004 would result in a phased long-term improvement in surface water, as more acreage would be subject to MCM in the future. As MCM under current provisions would be required for all CPs, the No Action Alternative would have benefits similar to Alternative 2, but would be potentially more beneficial than Alternative 1, where MCM would be undertaken only if included in the Conservation Plan. The active management would help ensure the acreage would be managed to maximize the indirect benefits to surface water; no significant negative impacts would occur under the No Action Alternative.

4.6.6.3 *Alternative 1*

Under Alternative 1, Conservation Plan management would be required throughout the contract, with MCM conducted only if stipulated in the Conservation Plan. Mid-contract management would not be required on an individual CP basis. This would provide greater flexibility for only undertaking management tasks as may be applicable to the particular lands enrolled than either the No Action Alternative or Alternative 2. Negative impacts to surface water could occur if appropriate MCM is not included in the plan. As such, this alternative would be less beneficial

for surface water than either the No Action Alternative or Alternative 2, where individual CPs require specific MCM be conducted; however, Alternative 1 would not result in significantly negative impacts to surface water.

4.6.6.4 Alternative 2

Alternative 2 includes the flexibility in tailoring MCM to local conditions by requiring it in the Conservation Plan as needed, but in addition, gives States the ability to specify MCM by CP as appropriate to their region. This alternative provides clear guidance to program participants effectively maintaining the health and vigor of the conservation cover, which benefits surface water. Long-term, beneficial impacts of Alternative 2 would be similar to the No Action Alternative and Alternative 1. Implementation of Alternative 2 would therefore not result in significantly negative impacts to surface water.

4.6.7 Provision 6 (Harvesting CRP)

4.6.7.1 Background/Methodology

Haying and grazing in general has the potential to directly and indirectly affect surface water quality. Livestock having access to surface water bodies have the potential to pollute water with nutrients mobilized by damage to stream banks and vegetation from trampling, and the addition of manure. The primary potential of haying and grazing to effect water quality rests in possible increased soil erosion caused by loss of vegetation which could lead to increased sedimentation of surface water. In addition, soil compaction from livestock can lead to excessive runoff, if not controlled.

The potential impacts of haying and grazing on vegetation and soils that may lead to diminished water quality form the basis for this qualitative surface water quality impact assessment. Under haying and grazing activities, impacts to surface water would most likely result from changes to rates of erosion, sedimentation, and nutrient loading from manure.

4.6.7.2 No Action Alternative

As described in Chapters 1 and 2, currently there are several forms of harvest, haying, and grazing authorized on CRP. Payment reduction assessments vary per type and are not assessed under certain conditions for Limited Grazing. Prescribed grazing for the control of invasive species is currently only allowed to control kudzu. Generally these activities are not authorized during the PNS, and except for emergency haying or grazing, can occur no more than once every three years, depending on the State. Haying or grazing may only occur if included in the Conservation Plan. In addition, a site-specific environmental evaluation would be conducted on those lands proposed for enrollment in CRP to determine the potential impacts of haying and/or grazing on those particular lands. In cases of existing contracts, the existing Conservation Plan would be adjusted and a site assessment conducted to determine potential impacts.

In 2007, CCC and FSA began studying the impacts of changing the frequency of managed haying and grazing under the 2002 Farm Bill provisions in 13 Midwestern and western States. In some cases, changing the dates of the PNS is also being considered. Principal conclusions

concerning potential impacts to surface water drawn from the 13 Environmental Assessments being completed are that haying and grazing have the potential to adversely impact soils if the amount of vegetation removed would be excessive and prolonged, or too many grazing animals compact the soil, which could increase erosion and subsequent sedimentation of water bodies; however, the managed haying and grazing EAs found no significant negative impacts to soils occur from increasing the frequency of these activities from once every five or 10 years to once every three. Rather, potentially significant impacts to soils could occur from harvest during key vegetation growth or dormancy states, or by periodic disturbance conducted too infrequently, which could diminish the health and vigor of grassland plants. Any action that removes soil cover would have the potential to increase soil erosion and thus sedimentation of water bodies.

Haying and grazing activities have the potential to directly and indirectly affect surface water quality, primarily through increased sedimentation, soil compaction from livestock leading to excessive runoff, and livestock having access to surface water bodies may pollute water with nutrients mobilized by damage to stream banks and vegetation from trampling; however, as long as the provisions of NRCS Conservation Practice Standards (i.e., Forage Harvest Management 511 and Prescribed Grazing 528) that specify minimal stubble heights, harvest timeframes, stocking rates, and exclusion of livestock from surface water are followed, these potential negative impacts would be limited. Moreover, haying and grazing activities, if properly managed, mimic the natural disturbance regimes that maintain the health and vigor of grasslands; therefore, continuing to stabilize soils.

Measures to eliminate, minimize or mitigate any potential impacts to a less than significant level include restricting livestock access to surface water bodies, designing an appropriate stocking rate, ensuring adequate measures are taken so that vegetation recovers prior to frost, and ensuring livestock are adequately dispersed to prevent concentration of excess nutrients that could runoff into surface water. Currently, no managed haying or grazing may be conducted within 120 ft of a permanent surface water body; managed grazing can only be conducted up to 75 percent of the NRCS stocking rate, limitations on vegetation removal are imposed by NRCS Practice Code 511 Forage Harvest Management, and Practice Code 528 Prescribed Grazing requires grazing plans include measures to disperse livestock.

As discussed in Chapter 2, the amount of acreage actually hayed or grazed on CRP since authorization by the 2002 Farm Bill is fairly low. Under the No Action Alternative it would be unlikely that there would be more than minor changes to historical rates of hay production and grazing on CRP acres based on the existing constraints. As discussed in Section 4.11.7.2, current production levels are fairly small when compared to total production levels within the combined counties containing those CRP acres, and total production at the State level. It can be assumed that the potential negative effects to surface water would remain minor. As currently authorized prescribed grazing for invasive species is limited to controlling kudzu only; continuation of current procedures is potentially less beneficial for surface water than either of the action alternatives, as this tool to control other invasive species would not be available to CRP participants. No significant negative impacts to surface water would occur under the No Action Alternative.

4.6.7.3 *Alternative 1*

Under Alternative 1 only those CPs currently authorized for managed haying and grazing, incidental grazing (gleaning), and harvest (biomass) would be authorized for routine grazing (including gleaning and prescribed grazing) or managed harvest. Any change to the established PNS, period (timing) of routine grazing and managed harvest, length of harvest, and frequency of routine grazing and harvest requires individual analysis under NEPA by those State Technical Committees desiring changes. A payment reduction commensurate with the economic value of the activity would be estimated on a percentage basis related to the percent of year the authorized activity would occur. Prescribed grazing for control of invasive plant species other than kudzu would be authorized, but not for CP23, CP23A, non-grass related CP25, CP27, CP31, or CP39-41. If implemented, prescribed grazing would only occur if included in the Conservation Plan, and no payment reduction would be applied.

Under Alternative 1, the general direct and indirect impacts to surface water of managed harvesting and routine grazing would be similar to those discussed under the No Action Alternative. Since Alternative 1 allows prescribed grazing to control invasive species other than kudzu, it would be more beneficial to surface water than the No Action Alternative, but would have benefits similar to Alternative 2. Potential negative impacts would be minimized by employing the same BMPs and following NRCS practice standards as described for the No Action Alternative. Managed harvesting (haying) and routine grazing benefits the health and vigor of the vegetative cover, limiting the potential for increasing soil erosion through vegetative loss. Expanding the use of prescribed grazing under this alternative for control of additional invasive plant species other than kudzu protects surface water by ensuring the conservation cover would be healthy and viable in the long-term, and limiting the necessity for the application of herbicides.

Requiring additional State-level NEPA analysis of changes to the PNS, timing, length and frequency of harvesting and routine grazing ensures potential negative environmental impacts are determined and addressed on a local scale. A site-specific environmental evaluation would be conducted for particular lands proposed for enrollment in CRP and the potential impacts from managed harvest and routine grazing would be assessed at that time. No significant negative impacts to surface water resources would occur under this alternative if the Conservation Plan would be followed and adapted to resource conditions just prior to managed harvest or routine grazing, the CPs authorized for managed harvest or routine grazing do not change, and State-level NEPA would be completed for any proposed changes to the PNS, timing, length and frequency of these activities prior to implementation.

4.6.7.4 *Alternative 2*

Alternative 2 provisions are the same as Alternative 1, but differ in that changes to CPs authorized for managed harvesting or routine and prescribed grazing would be permitted under Alternative 2; however, the changes to CPs would require additional NEPA analysis by those State Technical Committees desiring such changes. Under Alternative 2, impacts to surface water would be similar to those discussed under Alternative 1, and more beneficial than the No Action Alternative, which only allows prescribed grazing to control kudzu. No significant negative impacts to surface water would occur from managed harvesting or routine grazing if these

activities would be completed in accordance with existing standards, provisions, and guidelines, and the parameters for conducting these activities are stipulated in the Conservation Plan that would be adjusted to resource conditions on the land prior to conducting these activities. Requiring additional State-level NEPA compliance prior to approving changes in which CPs are authorized for harvesting or routine grazing, in addition to any changes in the current PNS, timing, length or frequency of managed harvesting or routine grazing established for individual States, ensures potential negative impacts to surface water would be addressed on a local scale. A site-specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure, which would identify and address any potential negative impacts to surface water posed by managed harvesting or routine grazing. No significant negative impacts to surface water would occur from implementation of Alternative 2.

4.6.8 Provision 7 (NASS Cash Rental Rates)

4.6.8.1 Background/Methodology

Analysis of the potential impacts on surface water resources under Provision 7 is qualitative. In general, retiring land from agricultural production and establishing conserving vegetative covers benefits surface water quality and availability.

4.6.8.2 No Action Alternative

Under the No Action Alternative, the existing annual rental payment rules with a soil productivity adjustment as described in Chapter 1 would continue to be implemented. Furthermore, Targeted Signup incentives (for CREP, non-CREP CCRP, and initiatives) would remain unchanged. In accordance with a procedure that became effective October 1, 2009 maintenance incentives remain the same for contracts executed before that date, but for contracts executed after that date, maintenance incentives are reduced to zero for General Signup practices (CRP-644). Under the existing program, benefits to surface water would continue to accrue within FY 2010 to FY 2012 in largely the same places: any geographic shift in the distribution of enrollments would change in response to scheduled expiring acres, but not due to continuation of existing rental rates. Both the No Action Alternative and Alternative 1 would maintain participation in General and Targeted Signups at similar levels nationally and have similar effects at that scale. In comparison to Alternative 2, which utilizes NASS cash rental rates for all signup types plus existing Targeted Signup incentives, the No Action Alternative is more beneficial, but not substantially so. No significantly negative impacts to surface water would occur from continuation of the program as currently constituted.

4.6.8.3 Alternative 1

For new General Signup contracts after December 1, 2009, updated NASS market dryland and irrigated rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) may be increased to ensure program acreage targets would be achieved. Maintenance incentives are reduced to zero for General Signup practices in accordance with the procedure that became effective October 1, 2009 (CRP-644). Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur, but overall participation in the program

would not decrease. Both General and Targeted Signup enrollment goals at current levels would continue to be met. Alternative 1 would provide similar benefits as the No Action Alternative, yet would be less beneficial than Alternative 2, as the latter may not meet Targeted Signup enrollment goals. No significant negative impacts to surface water resources would occur under Alternative 1.

4.6.8.4 Alternative 2

Alternative 2 would use updated NASS market dryland and irrigated rental rates with soil productivity adjustments for all contracts executed after December 1, 2009 while incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) would remain the same as the current program. Maintenance incentives are reduced to zero for General Signup practices in accordance with a procedure that became effective October 1, 2009 (CRP-644). Since no additional incentives would be offered to assure program acreage goals would still be met, this alternative in comparison to the others considered would have more potential negative impacts for surface water resources. Thus, Alternative 2 would be less beneficial than the No Action Alternative or Alternative 1. As detailed in Section 4.11.8.4 Socioeconomic Resources, overall participation in General or Targeted Signups would not decrease substantially, assuming a 4.5 million acre Targeted Signup goal, which is the existing condition. No significant negative impacts to surface water resources would occur from implementation of Alternative 2.

4.6.9 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives)

4.6.9.1 Background/Methodology

The potential impacts to surface water of the alternatives proposed to address this provision are qualitatively analyzed. In general, providing incentives for reducing agricultural production and establishing conserving vegetative covers benefits surface water quality and availability.

4.6.9.2 No Action Alternative

Section 1244(a) Beginning Farmers and Ranchers currently provides for incentives to be offered to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs. Continuation of the ability to offer incentives stands to indirectly benefit surface water resources by taking marginal lands out of agricultural production and establishing long-term resource conserving covers; however, because Alternatives 1 and 2 also expand to offer incentives to socially disadvantaged farmers and ranchers as well, both of these alternatives would potentially benefit surface water more than the No Action Alternative. As discussed in Section 3.12 Environmental Justice, since the pool of farmers and ranchers that meet the definition of socially disadvantaged would be relatively small, no significant negative impacts to surface water resources would occur under the No Action Alternative.

4.6.9.3 Alternative 1

Alternative 1 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for cost share rates at least 25 percent above otherwise applicable rates (up to 90 percent), and advance payments of up to 30 percent of the amount determined for the purchase of materials and services. The USDA budget would require

PAYGO offset which could potentially reduce services for other existing or potential participants in CRP. Alternative 1 would provide the most incentive for the affected populations to participate in the program, enhancing the potential of reaching the full enrollment of authorized acres in CRP; however, given the relatively small population that would qualify for these incentives, the impact of this alternative on surface water resources would not be substantially different from the No Action Alternative or Alternative 2. No significantly negative impacts to surface water would occur under Alternative 1.

4.6.9.4 Alternative 2

Under Alternative 2, there would be incentives added for socially disadvantaged, farmers, ranchers, and Indian Tribes to increase their access to conservation programs, most likely for CPs that currently are eligible for SIPs. Increased incentives would help take agricultural land out of production, establish conservation cover, and reduce nutrient and pesticide releases to surface waters, as well as irrigation using surface water; however, the required PAYGO offset could potentially reduce other program services. Alternative 2 would be less beneficial as compared to Alternative 1, but more beneficial than the No Action Alternative. As discussed above, the size of the affected population would be relatively small, thus, no significantly negative impacts to surface water resources would occur from implementation of Alternative 2.

4.6.10 Provision 9 (Pollinator Conservation)

4.6.10.1 Background/Methodology

Analysis of the potential impacts to surface water of the alternatives proposed to implement this provision is qualitative. Measures to benefit pollinators may have both positive and negative impacts on surface water quality and quantity. In general, any activity that would remove vegetative cover could negatively impact surface water.

4.6.10.2 No Action Alternative

Currently only general methods to reduce impacts to pollinators are offered in NRCS practice standards and technical guides (e.g., spot treatment of herbicides and pesticides, not harvesting at peak flowering). In addition, SAFE projects that target benefiting pollinators may also be implemented. Many methods to benefit pollinators have little potential to negatively impact surface water, such as diverse plantings, and successive flowering over the entire season, while some indirectly benefit surface water through reduced herbicide and pesticide application that may runoff into nearby waters; however, installation of SAFE projects and management activities to maintain the health and vigor of certain types of vegetative stands that ultimately benefit pollinators, such as disking and prescribed burns, have the potential to negatively impact surface water if not carefully applied. As discussed previously for other water resources, installation of SAFE pollinator habitat and the establishment of vegetative covers can indirectly negatively impact surface water through temporary land clearing potentially increasing sedimentation and pollutant loading of nearby water bodies, and using surface water to irrigate newly planted covers for successful establishment; however, use of native vegetation requires less irrigation than cropped land; thus, the change to habitat to support pollinators would decrease water supply use, resulting in a benefit to surface water quantity. In addition, they can

reduce the runoff velocity and transport capacity, allowing vegetated areas to increase the amount of sediment and pollution filtered, resulting in beneficial impacts to surface water quality.

Adherence to NRCS practice standards for this type of management, and tailoring the Conservation Plan to the individual lands enrolled, should adequately protect surface water. The No Action Alternative would have impacts similar to Alternative 2, but would potentially be more beneficial to surface water than Alternative 1, which would devote acreage to a new CP with potentially fewer direct benefits for surface water. No significant negative impacts to surface water would occur from current procedures concerning pollinators.

4.6.10.3 Alternative 1

Under Alternative 1 a new Pollinator Habitat Conservation Practice would be created with a goal of up to five percent of enrolled acres into new pollinator friendly habitat. In addition, existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators by including plant species beneficial for pollinators at specified composition rates, and other such practices. Although modifying existing practices to benefit pollinators would have little potential to negatively impact soils, and indirectly, surface water, creation of a CP that would apportion 1.6 million acres (based upon a maximum of 32 million acres in the program) could potentially reduce enrollments under CPs that directly reduce soil erosion at a substantive rate (such as buffer practices). As such, implementation of Alternative 1 could increase sediment, nutrient, and pesticide pollution loading potential to surface water. Nearly eight times more erosion (and therefore, associated sediment, nutrient, and pesticide pollution loading) is reduced by enrollment in buffer practices than in general CRP practices; however, as the overall proportion of all CRP acres devoted to pollinators would be small, this potential negative impact on surface water would be negligible. Alternative 1 would be less beneficial to surface water than either the No Action Alternative or Alternative 2; however, because the overall proportion of all CRP acres devoted to pollinators under Alternative 1 would be small, this potentially negative impact on surface water would not be significant.

4.6.10.4 Alternative 2

Under this alternative, only the existing conservation practices for wildlife, grass, buffer strips, windbreaks, shelterbelts, and trees would be modified to benefit native and managed pollinators. This alternative would have little potential to impact surface water, but would be potentially more beneficial than Alternative 1; however, the degree of this benefit to surface water would not be substantially different than either the No Action Alternative or Alternative 1. No significant negative impacts to surface water resources would occur from implementation of Alternative 2.

4.7 WATER RESOURCES: WETLANDS

4.7.1 Significance Criteria

Impacts to wetlands could be considered significant if implementation of an action resulted in adverse changes to water quality or quantity, threatened or damaged unique hydrologic characteristics, or violated established laws or regulations.

4.7.2 Provision 1 (National Conservation Initiatives)

4.7.2.1 *Background/Methodology*

Analysis of the potential impact to wetlands posed by the alternatives proposed to implement this provision is qualitative and quantitative. The establishment of vegetative covers, riparian buffers, and filter strips, and the restoration of wetlands, riparian areas, and floodplains would be applicable conservation practices to reduce nitrogen, phosphorus, and sediment runoff from agricultural lands. It is important to note that an increase in wetland acres does not immediately ensure increases in wetland functions; functions lost when a mature wetland is drained can be greater than benefits gained when a similar type of wetland is restored. While the wetlands of the Northern Plains – the Prairie Potholes – can reach maturity within five years, hardwood wetlands can take 30 years or more to mature. Some restored wetlands may never provide functions that match those provided prior to conversion (Hansen 2006).

4.7.2.2 *No Action Alternative*

Under the No Action Alternative, continued enrollment to meet enrollment goals of the SAFE, Longleaf Pine, Wetland Initiative-Floodplains, Bottomland Hardwoods, Upland Bird Habitat Buffers, and Duck Nesting Habitat Prairie Pothole Region would provide positive impacts to wetlands. Wetlands perform important biological functions that can benefit other resources; they remove excess nutrients and filters sediments from the water that flows through them, resulting in positive impacts to water quality and biological resources. Wetland conservation practices also directly benefit wetlands by directly by restoring the wetland functions and values that occurred prior to agricultural modification or conversion.

The conversion of agricultural land to CPs will continue to reduce levels of nutrients and pesticides applied to land, potentially improving the water quality in surrounding wetlands, and decreasing negative impacts of agricultural chemicals on wetland plant and wildlife species. Although prairie potholes are small, they still provide critical habitat for waterfowl and other prairie and aquatic birds; thus the restoration of prairie potholes would provide for beneficial impacts to wetland functionality and in turn, biological resources.

Under the No Action Alternative, activities associated with enrolling eligible land could potentially result in short-term, adverse impacts to wetlands. For example, site preparation earthmoving activities such as grading, leveling, and filling could temporarily alter hydrology and increase sedimentation rates, potentially resulting in minor short-term adverse effects to wetlands. To reduce these potential short-term impacts to wetlands, a site-specific conservation plan for each area would be prepared and site-specific BMPs would be used to mitigate any adverse impacts of implementing specific CPs. These impacts would only last until the CP would be permanently established and are considered minor compared to the overall long-term benefits of the CPs. These temporary impacts could be expected to last anywhere between one to three years. The No Action Alternative would maintain wetlands benefits, yet less than Alternative 1, but greater than those proposed under Alternative 2. No significantly negative impacts to wetlands would occur under the No Action Alternative.

4.7.2.3 *Alternative 1*

Under Alternative 1, National and State CPAs, State, and to a certain extent regional conservation initiatives would continue as currently implemented, but in addition, would offer three new national conservation initiatives under Continuous Signup: the Water Resource Protection Initiative, Highly Erodible Land Initiative, and Regional Restoration of Critical Wildlife Habitat Initiative. Implementation of the new initiatives requires PAYGO offset in the USDA budget. The Water Resource Protection Initiative would result in indirect minor benefits to wetland resources. Through contracts and retirement of water rights on up to one million acres, the protection of water resources would decrease potential water use and indirectly increase the functionality of wetlands. As noted in Section 4.6.2.2, under the Water Resource Protection Initiative, the implementation of one million acres of associated buffers would benefit surface water quality. Using the presented pollutant-reduction loading rates, the enrollment of one million acres under the Water Resource Protection Initiative would result in a reduction of approximately 2.5 million tons, 427.2 million pounds, and 41.2 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies. These positive impacts to surface water would have a subsequent beneficial impact to wetlands.

The Highly Erodible Land Initiative would result in direct beneficial impacts to wetlands, as a reduction in erodible surfaces and associated sedimentation would cut down on the amount of sediment reaching wetlands. The Regional Restoration of Critical Wildlife Habitat would provide a direct benefit to wetlands as the growth of natural riparian and wetland plant communities and functions would reduce sediment, nutrient, and pesticide loading to wetland areas.

Adoption of these initiatives could involve establishment activities and have the same short-term impacts as in the No Action Alternative. Mitigation would be the same as for the No Action Alternative, and require development of a site-specific conservation plan for each area and adoption of site-specific BMPs to mitigate any adverse impacts of implementing specific CPs. These impacts would only last until the CP would be permanently established and are considered minor compared to the overall long-term benefits of the CPs. These temporary impacts could be expected to last anywhere between one to three years. Implementation of these initiatives would require PAYGO offsets, affecting other programs and potentially reducing other CRP services. Overall, Alternative 1 would provide higher benefits to wetlands than the No Action Alternative and Alternative 2. No significantly negative impacts to wetlands would occur under Alternative 1.

4.7.2.4 *Alternative 2*

Under Alternative 2, there would be no new initiatives; thus, the impact analysis discussion for the No Action Alternative would be the same for all initiatives except the wetland initiative, as it would be reduced. Currently, the wetlands initiative (Floodplain Wetlands) has a goal of 750,000 acres and a cumulative enrollment of 223,250 acres (FSA 2009a). While the current enrollment is much less than the goal, a reduction in the wetland initiative allowance would result in a reduction in the potential maximum benefits to wetlands, as the wetlands initiative restores and enhances important functions that results in direct benefits to wetlands. In addition, the restoration and protection of wetlands would provide positive impacts to the coastal zone by reducing flooding intensity. Thus, there would be a potential negative impact relative to both the

No Action Alternative and Alternative 1; however, given the limited number of acres affected, no significantly negative impacts to wetlands would occur under Alternative 2.

4.7.3 Provision 2 (Maximum Enrollment)

4.7.3.1 *Background/Methodology*

Analysis of the potential impact to wetlands posed by the alternatives proposed to implement this provision is qualitative and quantitative. As noted in recent investigations, the site-specific targeted application of CRP measures for environmentally sensitive areas can result in significant benefits for an area. For example, on-going CEAP watershed assessment studies are addressing the need to determine the environmental benefits and impacts to society of USDA conservation programs at the watershed scale (JSWC 2008, Richardson *et al.* 2008). As further research and investigations identify critical areas for targeted CRP implementation, the enrollment of these acreages would result in greater benefits due to their targeted nature, as opposed to general, non-targeted measures.

4.7.3.2 *No Action Alternative*

This alternative apportions 27.5 million acres to CRP General Signup and Targeted Signups (Continuous) acreage to 4.5 million acres of the total 32 million acres authorized in FY 2010. Under the No Action Alternative, the balance between the General and Continuous sign-ups changes slightly from FY 2009 levels toward Continuous Sign-up priorities, most notably increasing acres for Farmable Wetlands, SAFE, and Initiatives. Regular Continuous practices are scheduled at two million acres. Using the average CRP field pollutant-loading reduction rates presented in Section 4.6.3.1, the enrollment of 27.5 million acres in the General Signup would result in a reduction of approximately 57.75 million tons, 211.75 million pounds, and 46.75 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies.

Under the No Action Alternative, the Targeted Signups would provide for acreage devoted to CREP, farmable wetlands, SAFE, and initiatives, resulting in benefits to surface water. For example, the installation of additional filter strips would help reduce the amount of nutrients, sediments, and other non-point pollutants that enter wetlands. As discussed in Section 4.6.3.1, more reductions in sediment and pollutant loading of surface waters, including wetlands, is achieved by enrollment in Targeted Signup buffer practices than General Signup. Using the average CRP buffer pollutant-loading reduction rates presented in Section 4.6.3.1, the Targeted Signup of 4.5 million acres would result in a reduction of approximately 11.25 million tons, 1.1 billion pounds, and 185.4 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies. Since not all acreage enrolled under Continuous Signup would be buffers, these estimates are offered as an approximate maximum potential benefit.

The No Action Alternative would not be as beneficial for wetlands as Alternative 1 because it does not allocate as many acres to Targeted Signups that create more wetlands, and improve wetland water quality. Targeted Signup acres are similar between the No Action Alternative and Alternative 2 and would have similar impacts but the reduction of eight million program acres

under the latter for General Signup would be more indirectly negative for wetlands than the No Action Alternative due to potential increased sedimentation and pollutant loading of surface waters. No significantly negative impacts to wetlands would occur under the No Action Alternative.

4.7.3.3 Alternative 1

Implementation of Alternative 1 would maintain the maximum acreage limit at 32 million acres, but reduces General Signup to 24 million acres and increases Targeted Signup to eight million acres. Alternative 1 would increase the amount of acreage for all of targeted areas over the other alternatives analyzed.

Using the average CRP field pollutant-loading reduction rates presented in Section 4.6.3.1, the enrollment of 24 million acres in the General Signup would result in a reduction of approximately 50.4 million tons, 184.8 million pounds, and 40.8 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies, including wetlands. Using the average CRP buffer pollutant-loading reduction rates presented above, the Targeted Signup of eight million acres would result in a reduction of approximately 20 million tons, 1.9 billion pounds, and 329.6 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies. Since not all acreage enrolled under Continuous Signup would be buffers, these estimates are offered as an approximate maximum potential benefit.

As noted in Section 4.6.3.2, and demonstrated by the pollutant-reduction estimates above, the targeted implementation of key signups would be an important element of increasing the overall benefits to wetlands derived from the CRP program. The beneficial impacts to wetlands would be greater under Alternative 1 than either the No Action Alternative or Alternative 2. No significantly negative impacts to wetlands would occur under Alternative 1.

4.7.3.4 Alternative 2

Implementation of Alternative 2 would reduce the total CRP acreage to 24 million acres, eight million acres less than the other alternatives analyzed. Twenty million acres would be apportioned to General Signup and four million acres apportioned to Targeted Signups. This would result in negative impacts to wetlands, as the benefits received from General Signup CRP acreage would be substantially reduced. Removing CRP acreage would likely result in an increase in agricultural production on these lands, with a corresponding increase in sediment, nutrient, and pesticide pollution loading potential to wetlands.

Using the average CRP field pollutant-loading reduction rates presented in Section 4.6.3.1, the enrollment of 20 million acres in the General Signup would result in a reduction of approximately 42 million tons, 154 million pounds, and 34 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies. Using the average CRP buffer pollutant-loading reduction rates presented above, the Targeted Signup of four million acres would result in a reduction of approximately 10 million tons, 98 million pounds, and 164.8 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving wetlands. Since not all acreage enrolled under Continuous Signup would be buffers, these estimates are offered as an approximate maximum potential benefit.

The amount of acreage included under Alternative 2 for the combined Targeted Signups would be less than that proposed under the No Action Alternative but half as much as Alternative 1. Reducing the overall amount of General Signup acreage under Alternative 2 could result in potentially significant negative impacts to wetlands on a local level, most notably an increase in sediment, nutrient, and pesticide pollution-loading potential to surface waters including wetlands.

4.7.4 Provision 3 (Alfalfa Crop History)

4.7.4.1 *Background/Methodology*

Analysis of the potential impact to wetlands posed by the alternatives proposed to implement this provision is qualitative based on the relative potential of allowing more or less acres to qualify for enrollment in CRP. Alfalfa requires a relatively high amount of water per acre; thus, any reduction in alfalfa production would reduce the amount of water applied, resulting in an indirect benefit to wetlands as the amount of water used for agricultural production would decrease, making more water available for wetlands.

4.7.4.2 *No Action Alternative*

Under the No Action Alternative, the crop rotation practice would retain alfalfa in any rotation with multi-year grasses and legumes and/or summer fallow to meet crop history requirements. Currently, the crop rotation must have occurred within 1996 to 2001. No information is available to assess how many acres in the CRP currently have qualified for enrollment under this alternative, but as discussed in Chapter 2, it would be fairly small. Continued implementation of this existing provision enables additional types of land to be enrolled in CRP; however, alfalfa is a perennial crop that provides surface cover year-round and is not tilled except for establishment thus would be less beneficial than enrolling more intensively cropped lands.

Any alfalfa land that would be taken out of production under the No Action Alternative would result in indirect beneficial impacts to wetlands, as sediment, nutrient, and pesticide loading to wetlands would decrease. In addition, any reduction in alfalfa production would likely reduce the amount of water applied to the new land cover, resulting in an indirect benefit to wetlands as the amount of surface or groundwater used for agriculture production would decrease, thereby making more water available to wetlands. There would be an associated slight benefit to wetlands resulting in increased functionality; however, should alfalfa land be taken out of production instead of land that was cropped four out of the previous six years, then the overall benefits might be reduced. Under the action alternatives, alfalfa alone in rotation with an eligible commodity may qualify for the program, which could conceivably result in more acres being able to qualify for CRP, but this may be offset by the new provision of having to meet a particular rotation interval rather than any rotation as permitted by current procedures. Thus, the No Action Alternative would be slightly more beneficial for wetlands than Alternative 1 or 2. No significant negative impacts to wetlands would occur under the No Action Alternative.

4.7.4.3 *Alternative 1*

Alternative 1 proposes a rotation interval of eight years comprised of six years of alfalfa and two years other eligible commodity, with the rotation occurring within 2002 to 2007, and may be

comprised of alfalfa alone instead of with multiyear grasses, legumes, or summer fallow. More acres would qualify under Alternative 1 as opposed to Alternative 2, but potentially less than the No Action Alternative. As such, the provision would have negligible impacts on wetlands due to the limited number of acres available to enroll under the authorized 32 million program acres. No significant negative impacts to wetlands would occur from implementation of Alternative 1.

4.7.4.4 Alternative 2

Alternative 2 proposes a rotation interval of 12 years, with 10 years of alfalfa and two years other eligible commodity, with the rotation occurring between within 2002 to 2007. Fewer acres would qualify under this alternative in comparison to the No Action Alternative and Alternative 1; however, the impact to wetlands would not be significantly negative due to the small number of acres that could be enrolled under the 32 million acre program cap from FY 2010 to FY 2012.

4.7.5 Provision 4 (County Acreage Limitation Exception)

4.7.5.1 Background/Methodology

The analysis of the potential impacts of the alternatives on wetlands from implementation of the alternatives proposed is qualitative. In general, actions that result in more lands enrolled in CRP potentially benefit wetlands as lands are taken out of agricultural production and resource conserving covers are established; however, activities associated with enrolling and establishing eligible land could potentially result in short-term, adverse impacts to wetlands.

4.7.5.2 No Action Alternative

Currently, no more than 25 percent of a county's cropland may be enrolled in CRP and WRP, except when it is determined there would not be an adverse effect to the local economy, and if operators in the county are having difficulties complying with highly erodible lands conservation requirements for working cropland, and excepting for acres enrolled under shelterbelt and windbreak practices. There is not currently an upward limit on acreage in excess; however, the authority to enroll no more than 32 million acres in the program still applies, and any limitations on the allotment of acres for certain CPs or initiatives per State would not be waived. Exceeding the acreage limitation of 25 percent of a county's cropland results in more land being taken out of agricultural production and reduces the amount of sediments, nutrients, and pesticides coming off the converted acreage. This benefits surface water including wetlands, especially within systems associated and downstream of each affected county. In addition, as cropland would be converted to CRP acreage, the amount of irrigation would decrease, resulting in a beneficial impact to surface water quantity and wetlands. Implementation of the No Action Alternative would result in benefits to wetlands similar to that expected under Alternative 1, but would realize more potential benefits than Alternative 2, which except for additional acreage enrolled under CREP or Continuous Signup, caps additional CRP and WRP combined acreage at no more than 50 percent of a county's cropland. Because there are only 24 counties currently exceeding the cap, Alternatives 1 and 2 would not be appreciably different from current conditions. Thus, there would be no practical difference between the alternatives. No significant negative impacts to surface water would occur from implementation of the No Action Alternative.

4.7.5.3 *Alternative 1*

Under Alternative 1, a county may exercise its yes/no authority to allow additional acreage enrolled under CREP or Continuous CRP beyond the 25 percent cap, with no additional per county acreage limitation. This alternative potentially benefits wetlands more than Action Alternative 2 by allowing more land to be enrolled in CRP, but would be more restrictive than the No Action Alternative, which does not limit additional acres only to CREP or Continuous CRP; however, this difference would not be significant, because the total number of acres authorized for the program would still be 32 million acres, and the rate at which existing contracts would expire until 2012 would allow only a relatively small amount of additional acreage to be enrolled in the program. No significantly negative impacts to wetlands would occur under Alternative 1.

4.7.5.4 *Alternative 2*

Implementation of Action Alternative 2 would allow an exception for CREP or Continuous CRP beyond the 25 percent cap, but with a limit of no more than 50 percent of a county's cropland enrolled in CRP. This alternative would be potentially more restrictive than either the No Action Alternative or Alternative 1, and would be potentially less beneficial for wetlands, but because of the 32 million acre program limit and the rate of attrition from expected contract expirations, the impacts to wetlands are not expected to be appreciably different from Alternative 1 or significantly negative.

4.7.6 Provision 5 (Conservation Plan Management)

4.7.6.1 *Background/Methodology*

Analysis of the potential impacts on wetlands under Provision 5 is qualitative. The application of the management conservation practices authorized under CRP for the acres enrolled in the program in general terms improve wetland function. For example, CRP wetland buffers provide additional water quality treatment in that suspended sediments and contaminants in the water are trapped, retained, and/or transformed through a variety of biological and chemical processes before they reach downstream rivers, streams, and other water bodies, contributing to the reduction in TMDLs from agricultural runoff.

4.7.6.2 *No Action Alternative*

Currently, management as stipulated in the Conservation Plan is expected to occur and mid-contract management is required on contracts executed after FY 2004, and is voluntary for contracts accepted before that year. Some MCM activities potentially negatively impact wetlands, such as disking, prescribed burns, and activities that could threaten the health and viability of the established vegetative cover (e.g., excessively short mowing). These management activities also potentially result in short-term, temporary localized adverse impacts to wetland water quality and quantity. Management actions on CRP enrolled land may include additional soil disturbance from disking and to repair dikes or buffer strips, applying herbicides and/or pesticides to control invasive species, or irrigating land during critical growing periods of drought years. To reduce these potential short-term impacts, a site-specific Conservation Plan for each area would be prepared and site-specific BMPs would be used to minimize any adverse impacts of implementing specific management techniques.

As the goal of MCM is to preserve the health and viability of the conservation cover, the No Action Alternative would maintain long-term continued beneficial impacts to wetlands (i.e., reduced sediments, nutrients and pesticides entering wetlands, and less surface water pumping). The requirement for MCM on contracts executed after FY 2004 would result in a phased long-term improvement in surface water, as more acreage would be subject to MCM in the future. As MCM under current provisions would be required for all CPs, the No Action Alternative would have benefits similar to Alternative 2, but would be potentially more beneficial than Alternative 1, where MCM would be undertaken only if included in the Conservation Plan. The active management would help ensure the acreage would be managed to maximize the indirect benefits to wetlands; no significant negative impacts would occur under the No Action Alternative.

4.7.6.3 Alternative 1

Under Alternative 1, Conservation Plan management would be required throughout the contract, with MCM conducted only if stipulated in the Conservation Plan. Mid-contract management would not be required on an individual CP basis. This would provide greater flexibility for only undertaking management tasks as may be applicable to the particular lands enrolled than either the No Action Alternative or Alternative 2. Negative impacts to wetlands could occur (i.e. increased sediment, nutrient, and pesticide loading to wetlands) if appropriate MCM maintaining the conservation cover is not included in the plan. As such, this alternative would be less beneficial for wetlands than either the No Action Alternative or Alternative 2, where individual CPs require specific MCM be conducted; however, Alternative 1 would not result in significantly negative impacts to wetlands.

4.7.6.4 Alternative 2

Alternative 2 includes the flexibility in tailoring MCM to local conditions by requiring it in the Conservation Plan as needed, but in addition, gives States the ability to specify MCM by CP as appropriate to their region. This alternative provides clear guidance to program participants and flexibility in including management as locally appropriate, effectively maintaining the health and vigor of the conservation cover, which benefits wetlands through reduced sediments, excess nutrients and pesticides entering wetlands. Long-term, beneficial impacts of Alternative 2 would be similar to the No Action Alternative and Alternative 1. Implementation of Alternative 2 would not result in significantly negative impacts to wetlands.

4.7.7 Provision 6 (Harvesting CRP)

4.7.7.1 Background/Methodology

Analysis of the potential impacts on wetlands under Provision 6 is qualitative. Grazing in riparian areas can reduce the ability of riparian areas to absorb and hold water and result in mechanical destruction of stream banks, resulting in negative impacts to wetlands as increased amounts of sediment could reach wetland areas, potentially reducing their functionality.

4.7.7.2 *No Action Alternative*

As described in Chapters 1 and 2, currently there are several forms of harvest, haying, and grazing authorized on CRP. Payment reduction assessments vary per type and are not assessed under certain conditions for Limited Grazing. Prescribed grazing is currently only permitted to control kudzu. Generally, these activities are not authorized during the PNS. Under the No Action Alternative, these forms of authorized harvest, haying, and grazing on CRP lands would continue from FY 2010 to FY 21012, although it would be unlikely that there would be more than minor changes to hay production and grazing on CRP acres based on the existing constraints (Section 4.11.7.2).

Under current procedures, managed and emergency haying or grazing is not permitted within 120 ft of permanent surface water bodies, including wetlands, thus, no direct impacts would occur. In addition, under managed and emergency grazing, grazing stock must be confined by fencing, further limiting their access to wetlands. The potential indirect impacts of haying and grazing on wetlands are similar to those discussed in Section 4.6.7.2 for surface water. Any activity that threatens the health and viability of the vegetative stand could increase sedimentation and pollutant loading into nearby water bodies. This potential is minimized by requiring haying and grazing to be included in the Conservation Plan, conducting a resource inventory in development of the plan that identifies sensitive resources like wetlands and measures to avoid adverse impacts, and adhering to existing conservation practice standards, guidelines, and guidance as detailed in Section 4.6.7.2.

Based upon the EAs being completed evaluating proposed changes to current managed haying and grazing frequencies in certain states, and in some cases the dates of the PNS, haying and grazing have the potential to adversely affect wetlands if the health and long-term viability of the conservation cover are threatened by excessive and prolonged vegetation removal from these activities. In addition, the managed haying and grazing EAs found no significant negative impacts to the health of vegetative covers, and therefore wetlands, occur from increasing the frequency of these activities from once every five or 10 years to once every three years. Rather, potentially significant impacts to vegetative covers could occur from harvest during key vegetation growth or dormancy states, or by periodic disturbance conducted too infrequently, which could diminish the health and vigor of grassland plants. Any action that removes soil cover has the potential to increase soil erosion and sedimentation of nearby waters, and increases the quantity and potentially the velocity of runoff. These impacts could contribute to erosion of wetlands and the severity of flood events.

As discussed in Chapter 2, the amount of acreage actually hayed or grazed on CRP since authorization by the 2002 Farm Bill is fairly low. As discussed in Section 4.11.7.2, current production levels are fairly small when compared to total production levels within the combined counties containing those CRP acres, and total production at the State level. It can be assumed that the potential negative effects to wetland water quality would remain minor. As currently authorized prescribed grazing is limited to controlling kudzu only; continuation of current procedures is potentially less beneficial for wetlands than either of the action alternatives, as this tool to control other invasive species would not be available to CRP participants. No significant negative impacts to wetlands would occur under the No Action Alternative

4.7.7.3 *Alternative 1*

Under Alternative 1 only those CPs currently authorized for managed haying and grazing, incidental grazing (gleaning), and harvest (biomass) would be authorized for routine grazing (including gleaning) and managed harvest. Any change to the established PNS, period (timing) of routine grazing and managed harvest, length of harvest, and frequency of routine grazing and harvest by States requires individual analysis under NEPA by those State Technical Committees desiring changes.

Prescribed grazing for control of invasive plant species beyond just kudzu would be authorized except for CP23, CP23A, non-grass related CP25, CP27, CP31, or CP39-41 and if implemented, would occur only in accordance with a control plan included in the Conservation Plan. A payment reduction commensurate with economic value of the activity would be estimated on percentage basis related to the percent of year the authorized activity would occur. No payment reduction would be applied to prescribed grazing for the control of invasive species.

The indirect impacts of Alternative 1 to wetlands would be similar to the No Action Alternative and Alternative 2; however Alternative 1 would be slightly more beneficial than the No Action Alternative, which limits prescribed grazing to only kudzu. Negative impacts may be minimized by employing the same BMPs and following NRCS practice standards as described in Section 4.6.7.2 for surface water under the No Action Alternative. Managed harvesting (haying) and routine grazing benefits the health and vigor of the vegetative cover, limiting the potential for increasing soil erosion through vegetative loss that may increase sedimentation of nearby wetlands. Expanding the use of prescribed grazing under this alternative for control of additional invasive plant species other than kudzu protects soils by ensuring the conservation cover is healthy and viable in the long-term, therefore benefiting wetland water quality through reduced sedimentation and pollutant loading. Requiring additional State-level NEPA analysis of changes to the PNS, timing, and frequency of harvesting and routine grazing ensures potential negative environmental impacts would be determined and addressed on a local scale. A site-specific environmental evaluation would be conducted for particular lands proposed for enrollment in CRP and the potential impacts from managed harvest and routine grazing would be assessed at that time. No significant negative impacts to wetlands would occur under this alternative if the Conservation Plan is followed and adapted to resource conditions just prior to managed harvest or routine grazing, the CPs authorized for managed harvest or routine grazing do not change, and State-level NEPA is completed for any proposed changes to the PNS, timing, length and frequency of these activities prior to implementation.

4.7.7.4 *Alternative 2*

Alternative 2 provisions are the same as Alternative 1, but differ in that changes to CPs authorized for managed harvesting or routine and prescribed grazing would be permitted under Alternative 2; however, the changes to CPs would require additional NEPA analysis by those State Technical Committees desiring such changes. Under Alternative 2, impacts to wetlands would be similar to Alternative 1, and less beneficial than the No Action Alternative which limits prescribed grazing to only kudzu. No significant negative impacts to wetlands would occur from managed harvesting or routine grazing if these activities would be completed in accordance with existing standards, provisions, and guidelines, and the parameters for conducting these

activities are stipulated in the Conservation Plan that would be adjusted to resource conditions on the land prior to conducting these activities. Requiring additional State-level NEPA compliance prior to approving changes in which CPs would be authorized for managed harvesting or routine grazing, in addition to any changes in the current PNS, timing, length or frequency of harvesting or grazing established for individual States, ensures potential negative impacts to wetlands would be addressed on a local scale. A site-specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure, which would identify and address any potential negative impacts to wetlands posed by managed harvesting or routine grazing. No significant negative impacts to wetlands would occur from implementation of Alternative 2.

4.7.8 Provision 7 (NASS Cash Rental Rates)

4.7.8.1 Background/Methodology

Analysis of the potential impacts on wetlands under Provision 7 is qualitative. In general, retiring land from agricultural production and establishing conserving vegetative covers benefits wetland function.

4.7.8.2 No Action Alternative

Under the No Action Alternative, the existing annual rental payment rules with a soil productivity adjustment as described in Chapter 1 would continue to be implemented. Furthermore, Targeted Signup incentives (for CREP, non-CREP CCRP, and initiatives) would remain unchanged. In accordance with a procedure that became effective October 1, 2009 maintenance incentives remain the same for contracts executed before that date, but for contracts executed after that date, maintenance incentives are reduced to zero for General Signup practices (CRP-644). Under the existing program, benefits to wetlands would continue to accrue within FY 2010 to FY 2012 in largely the same places: any geographic shift in the distribution of enrollments would change in response to scheduled expiring acres, but not due to continuation of existing rental rates. Both the No Action Alternative and Alternative 1 would maintain participation in General and Targeted Signups at similar levels nationally and have similar effects at that scale. In comparison, Alternative 2 may not achieve Targeted Signup enrollment goals, thus the No Action Alternative is more beneficial, but not substantially so. No significantly negative impacts to wetlands would occur from continuation of the program as currently constituted.

4.7.8.3 Alternative 1

For new General Signup contracts after December 1, 2009, updated NASS market dryland and irrigated rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) may be increased to ensure program acreage targets would be achieved. Maintenance incentives are reduced to zero for General Signup practices in accordance with the procedure that became effective October 1, 2009 (CRP-644). Because some areas would realize higher CRP payments than others would, regional shifts in enrolled acres may occur, but overall participation in the program would not decrease. For example, NASS rates would be higher in the Mississippi River

Basin, thus more enrollments in this area with a lot of wetlands would be beneficial. Both General and Targeted Signup enrollment goals at current levels would likely be met under this alternative. The impacts of Alternative 1 would therefore be similar to the No Action Alternative but more beneficial than Alternative 2, which if implemented may not reach Targeted Signup goals. No significant negative impacts to wetlands would occur under Alternative 1.

4.7.8.4 Alternative 2

Alternative 2 would use updated NASS market dryland and irrigated rental rates with soil productivity adjustments for all contracts executed after December 1, 2009 while incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) would remain the same as the current program. Maintenance incentives are reduced to zero for General Signup practices in accordance with a procedure that became effective October 1, 2009 (CRP-644). As no additional incentives would be offered to assure program acreage goals would still be met, this alternative in comparison to the others considered would have more potential negative impacts for wetlands. Because some areas would realize higher CRP payments than others would, regional shifts in enrolled acres may occur, such as in the Mississippi River Basin, benefiting wetlands. As detailed in Section 4.11.8.4 Socioeconomic Resources, overall participation in the General or Targeted Signups would not decrease substantially, assuming a 4.5 million acre Targeted Signup goal, which is the existing condition. No significant negative impacts to wetlands would occur from implementation of Alternative 2.

4.7.9 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives)

4.7.9.1 Background/Methodology

The potential impacts to wetlands of the alternatives proposed to address this provision are qualitatively analyzed. In general, providing incentives for retiring agricultural lands from production and establishing conserving vegetative covers benefits wetland function.

4.7.9.2 No Action Alternative

Section 1244(a) Beginning Farmers and Ranchers currently provides for incentives to be offered to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs. Continuation of the ability to offer incentives stands to directly benefit wetlands through creation or restoration of wetlands. It also indirectly benefits wetlands because more participation in the program by the affected populations would potentially reduce sediment, nutrient, and pesticide loading by taking marginal lands out of agricultural production and establish long-term resource conserving covers.

However, because Alternatives 1 and 2 would also expand to offer incentives to socially disadvantaged farmers and ranchers as well, both of these alternatives would potentially benefit wetlands more than the No Action Alternative. Further, as discussed in Section 3.12 Environmental Justice, as the pool of farmers and ranchers that meet the definition of socially disadvantaged would be relatively small, no significant negative impacts to wetlands would occur under the No Action Alternative

4.7.9.3 *Alternative 1*

Alternative 1 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for cost share rates at least 25 percent above otherwise applicable rates (up to 90 percent), and advance payments of up to 30 percent of the amount determined for the purchase of materials and services. The USDA budget would require PAYGO offset which could potentially reduce services for other existing or potential participants in CRP. Alternative 1 would provide the most incentive for the affected populations to participate in the program, enhancing the potential of reaching the full enrollment of authorized acres in CRP; however, given the relatively small population that would qualify for these incentives, the impact of this alternative on wetlands would be not substantially different from the No Action Alternative or Alternative 2. No significantly negative impacts to wetlands would occur under Alternative 1.

4.7.9.4 *Alternative 2*

Under Alternative 2, there would be incentives added for socially disadvantaged, farmers, ranchers, and Indian Tribes to increase their access to conservation programs, most likely for CPs that currently are eligible for SIPs. Increased incentives would help take agricultural land out of production, establish conservation cover, and reduce sediment, nutrient, and pesticide loading, thus resulting in beneficial impacts to wetlands, in addition to wetland creation or restoration; however, the required PAYGO offset could potentially reduce other program services. As discussed above, the size of the affected population would be relatively small, thus, similar to the No Action Alternative and Alternative 1, no significantly negative impacts to wetlands would occur from implementation of Alternative 2.

4.7.10 Provision 9 (Pollinator Conservation)

4.7.10.1 *Background/Methodology*

Analysis of the potential impacts to wetlands of the alternatives proposed to implement this provision is qualitative. Measures to benefit pollinators may have both positive and negative impacts on water quality and quantity, and thus, wetlands. In general, any activity that would remove vegetative cover could negatively impact wetlands.

4.7.10.2 *No Action Alternative*

Currently, only general methods to reduce impacts to pollinators are offered in NRCS practice standards and technical guides (e.g., spot treatment of herbicides and pesticides, not harvesting at peak flowering). In addition, SAFE projects that target benefiting pollinators may also be implemented.

The impacts of the No Action Alternative on wetlands are similar to those discussed for surface water in Section 4.6.10.1. Many methods to benefit pollinators have little potential to negatively impact wetlands, but installation of SAFE projects and management activities to maintain the health and vigor of certain types of vegetative stands that ultimately benefit pollinators, such as disking and prescribed burns, have the potential to negatively impact wetlands if not carefully applied. Adherence to NRCS practice standards for installation, establishment, and

management, and tailoring the Conservation Plan to the individual lands enrolled, should adequately protect wetlands. The No Action Alternative would have impacts similar to Alternative 2, but would potentially be more beneficial to wetlands than Alternative 1, which would devote acreage to a new CP with potentially fewer direct benefits for wetlands (such as wetland creation and restoration). No significant negative impacts to wetlands would occur from current procedures concerning pollinators.

4.7.10.3 Alternative 1

Under Alternative 1 a new Pollinator Habitat Conservation Practice would be created with a goal of up to five percent of enrolled acres into new pollinator friendly habitat. In addition, existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators by including plant species beneficial for pollinators at specified composition rates, and other such practices. The impacts of Alternative 1 on wetlands would be similar to those discussed in Section 4.6.10.2 for surface water. Indirect benefits from modifying CPs on behalf of pollinators include a reduction in the sediment, nutrient, and pesticide pollution loading potential to wetlands, and a potential reduction in irrigation, resulting in increased wetland functionality. Creation of a CP that would apportion 1.6 million acres (based upon a maximum of 32 million acres in the program) could potentially reduce enrollments under CPs that directly benefit wetlands, such as wetland creation or restoration practices, or indirectly reduce soil erosion at a more substantive rate (such as buffer practices). As such, implementation of Alternative 1 could increase sediment, nutrient, and pesticide pollution loading potential to surface water; however, as the overall proportion of all CRP acres devoted to pollinators would be small, this potential negative impact on wetlands would be negligible. Alternative 1 would be less beneficial to wetlands than either the No Action Alternative or Alternative 2; however, because the overall proportion of all CRP acres devoted to pollinators under Alternative 1 would be small, this potentially negative impact on wetlands would not be significant.

4.7.10.4 Alternative 2

Under this alternative only the existing conservation practices for wildlife, grass, buffer strips, windbreaks, shelterbelts, and trees would be modified to benefit native and managed pollinators. This alternative would have little potential to impact wetlands, but would be potentially more beneficial than Alternative 1; however, as discussed above, the degree of this benefit to wetlands would not be substantially different than either the No Action Alternative or Alternative 1. No significant negative impacts to wetlands would occur from implementation of Alternative 2.

4.8 WATER RESOURCES: COASTAL ZONE MANAGEMENT

4.8.1 Significance Criteria

Impacts to Coastal Zone Management could be considered significant if implementation of an action resulted in adverse changes to water quality or quantity, threatened or damaged unique hydrologic characteristics, or violated established laws or regulations.

4.8.2 Provision 1 (National Conservation Initiatives)

4.8.2.1 Background/Methodology

Analysis of the potential impact to coastal zone management posed by the alternatives proposed to implement this provision is qualitative. Coastal areas are in many respects the end of the line for receiving impacts from CRP provisions. In general, all of the conservation practices that work to increase water quality for areas that ultimately flow to the coastal environment result in benefits to the coastal environment, most notably in the form of cleaner coastal and estuarine areas. The CZMA requires Federal activities that are reasonably likely to affect use of lands or waters, or natural resources of the coastal zone to be consistent to the maximum extent practicable with the enforceable policies of the State's Coastal Zone Management Plan. Therefore, each alternative would be consistent, to the maximum extent practicable, with the enforceable policies of applicable state coastal zone management plans. Of note when considering potential impacts from the alternatives is the temporal horizon for realizing impacts to the coastal zone. Specifically, most benefits would be long-term because surface water drainages take time to adjust to removing sediment from streambeds and banks until equilibrium is reached. Thus, the reduced sediment loads would not necessarily be observed in the short-term as this process can take decades.

4.8.2.2 No Action Alternative

Under the No Action Alternative, continued enrollment to meet the enrollment goals of the SAFE, Longleaf Pine, Wetland Initiative-Floodplains, Bottomland Hardwoods, Upland Bird Habitat Buffers, and Duck Nesting Habitat Prairie Pothole Region initiatives would result in positive impacts to the coastal zone. For example, hardwood tree planting would reduce agricultural erosion and stream sedimentation loads, leading to a subsequent decrease in downstream deposition and a gradation in coastal and estuarine environments. The conversion of agricultural land to CPs will continue to reduce levels of nutrients, herbicides and pesticides applied to land, potentially improving the water quality, and decreasing negative impacts of agricultural chemicals on wetland plant and wildlife species. Similarly, wetland restoration activities would reestablish native vegetation, reduce downstream flooding, reduce stream bank and shoreline erosion, and in turn, improve coastal zone water quality. Reduced sediment, nutrient, and pesticide loading from the implementation of CPs in coastal watersheds would result in beneficial impacts to the coastal zone.

Under the No Action Alternative, activities associated with enrolling eligible land could potentially result in short-term, adverse impacts to the coastal zone. For example, these activities could temporarily alter hydrology, potentially resulting in minor short-term adverse effects to coastal zone functionality and increased sedimentation. In addition, implementation of a CP could include building structures (e.g., pipes, gates, and outlets) and site preparation earthmoving activities such as grading, leveling, and filling to construct dam, levees, and other structures necessary to restore hydrology. The No Action Alternative would maintain coastal zone benefits, yet less than Alternative 1 but greater than those realized under Alternative 2. No significantly negative impacts to coastal zone resources would occur under the No Action Alternative.

4.8.2.3 *Alternative 1*

Under Alternative 1, National and State CPAs, State, and to a certain extent regional conservation initiatives would continue as currently implemented, but in addition, would offer three new national conservation initiatives under Continuous Signup: the Water Resource Protection Initiative, Highly Erodible Land Initiative, and Regional Restoration of Critical Wildlife Habitat Initiative. Implementation of the new initiatives would require PAYGO offset in the USDA budget. Under the Water Resource Protection Initiative, the enrollment of one million acres dedicated to practices that improve water quality and quantity would result in direct and indirect benefits to coastal zone resources. Through contracts and retirement of water rights, the protection of water resources would result in minor benefits to the coastal zone. If all of these acres were devoted to buffers, as noted in Section 4.6.2.3, using the presented pollutant-reduction loading rates, this initiative would result in a reduction of approximately 2.5 million tons, 427.2 million pounds, and 41.2 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies. These positive impacts to surface water would have a subsequent beneficial impact to coastal zones.

The Highly Erodible Land Initiative would result in beneficial impacts to the coastal zone, as a reduction in erodible surfaces and associated sedimentation, would cut down on the amount of sediment reaching the coastal zone. This would result in a reduction in coastal dredging needs. The Regional Restoration of Critical Wildlife Habitat would provide an indirect benefit to the coastal zone as the growth of natural riparian plant communities and functions would help protect floodplains from scour erosion, which would in turn reduce sediment loading to the coastal zone.

Adoption of these initiatives could involve establishment activities and have the same short-term impacts as in the No Action Alternative. Mitigation would be the same as for the No Action Alternative, and require development of a site-specific conservation plan for each area and adoption of site-specific BMPs to mitigate any adverse impacts of implementing specific CPs. These impacts would only last until the CP would be permanently established and are considered minor compared to the overall long-term benefits of the CPs. These temporary impacts could be expected to last anywhere between one and three years. Implementation of these initiatives would require PAYGO offsets, affecting other programs and potentially reducing other CRP services. Overall, Alternative 1 would provide higher benefits to coastal zones than the No Action Alternative and Alternative 2. No significantly negative impacts to coastal zone resources would occur under Alternative 1.

4.8.2.4 *Alternative 2*

Under Alternative 2, there would be no changes to existing National or State CPAs, CREPs, or national conservation initiatives except for the reduction of the wetlands initiative; impacts for all initiatives except the wetland initiative would be the same as the No Action Alternative. Currently, the wetlands initiative has a goal of 750,000 acres and a cumulative enrollment of 223,250 acres (FSA 2009a). While the current enrollment is much less than the goal, a reduction in the wetland initiative allowance would result in a reduction in the potential maximum benefits to the coastal zone, as the wetlands initiative restores and enhances important functions that results in benefits to the coastal zone. For example, wetland restoration activities

reestablish native vegetation, reduce downstream flooding, reduce stream bank and shoreline erosion, and in turn, improve coastal zone water quality. In addition, preserving and reconstructing coastal marshes would help reduce storm damage as coastal wetlands serve as storm surge protectors when hurricanes or tropical storms come ashore. Preserving wetlands, along with other flood control measures, would continue to offer a degree of protection against flooding more effective and less costly than a system of traditional dikes and levees (EPA 2009e). Thus, Alternative 2 provide fewer benefits than either the No Action Alternative or Alternative 1. No significantly negative impacts to coastal zone resources would occur under Alternative 2.

4.8.3 Provision 2 (Maximum Enrollment)

4.8.3.1 *Background/Methodology*

Analysis of the potential impact to coastal zone resources posed by the alternatives proposed to implement this provision is qualitative. As noted in recent investigations, the site-specific targeted application of CRP measures for environmentally sensitive areas can result in significant benefits for an area. For example, on-going CEAP watershed assessment studies are addressing the need to determine the environmental benefits and impacts to society of USDA conservation programs at the watershed scale (JSWC 2008, Richardson *et al.* 2008). As further research and investigations identify critical areas for targeted CRP implementation, the enrollment of these acreages would result in greater benefits due to their targeted nature, as opposed to general, non-targeted measures. Enrollment in CRP reduces water erosion potential by establishing vegetative covers that improve soil structure, reduces runoff velocity, and intercepts sediment before it enters surface waters, resulting in beneficial impacts to receiving coastal zone waters.

4.8.3.2 *No Action Alternative*

This alternative apportions 27.5 million acres to CRP General Signup and Targeted Signups (Continuous) acreage to 4.5 million acres of the total 32 million acres authorized in FY 2010. Under the No Action Alternative, the balance between the General and Continuous sign-ups changes slightly from FY 2009 levels toward Continuous Sign-up priorities, most notably increasing acres for Farmable Wetlands, SAFE, and Initiatives. Regular Continuous practices are scheduled at two million acres. Using the average CRP field pollutant-loading reduction rates presented in Section 4.6.3.1, the enrollment of 27.5 million acres in the General Signup would result in a reduction of approximately 57.75 million tons, 211.75 million pounds, and 46.75 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies some of which would ultimately flow into coastal zones.

Under the No Action Alternative, Targeted Signups would provide for acreage devoted to CREP, farmable wetlands, SAFE, and initiatives resulting in benefits to the coastal zone. For example, the installation of filter strips would help reduce the amount of nutrients, sediments, and other non-point pollutants that enter surface water. Using the average CRP buffer pollutant-loading reduction rates presented above, the Targeted Signup of 4.5 million acres would result in a reduction of approximately 11.25 million tons, 1.1 billion pounds, and 185.4 million pounds in

soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies, some of which would ultimately flow into the coastal zone.

Enrollment and establishment could result in short term negative impacts to coastal zone resources because of site preparation activities, but development and implementation of site-specific conservation plans with site specific BMPs would mitigate these impacts. The No Action Alternative would not be as beneficial for the coastal zone as Alternative 1 because it does not allocate as many acres to Targeted Signups that are more beneficial to water quality. Targeted Signup acres are similar between the No Action Alternative and Alternative 2 and would have similar impacts, but the reduction of eight million program acres under the latter for General Signup would be more indirectly negative for coastal zones than the No Action Alternative due to potential increased sedimentation and pollutant loading of surface waters. No significantly negative impacts to coastal zone resources would occur under the No Action Alternative.

4.8.3.3 Alternative 1

Implementation of Alternative 1 would maintain the maximum acreage limit at 32 million acres, but reduces General Signup to 24 million acres and increases Targeted Signup to eight million acres. Alternative 1 would increase the amount of targeted acreage for all of the targeted areas over the other alternatives analyzed.

As noted in Section 4.8.3.2, and demonstrated by the pollutant-reduction estimates above the targeted implementation of key signups would be an important element of increasing the overall benefits derived from the CRP program. The establishment of vegetative covers, riparian buffers, and filter strips, and the restoration of wetland, riparian habitat, and floodplains would reduce nitrogen, phosphate, and sediment loading from agricultural lands; these actions would produce benefits on a larger scale and could improve the water quality of the large regions. For example, the restoration of wetlands would reduce nitrogen, phosphorus, and sediment runoff from agricultural lands, reducing the Gulf of Mexico hypoxic zone. Using the average CRP field pollutant-loading reduction rates presented in Section 4.6.3.1, the enrollment of 24 million acres in the General Signup would result in a reduction of approximately 50.4 million tons, 184.8 million pounds, and 40.8 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies, some of which would ultimately flow into coastal zones. Using the average CRP buffer pollutant-loading reduction rates presented above, the Targeted Signup of eight million acres would result in a reduction of approximately 20 million tons, 1.9 billion pounds, and 329.6 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies.

The beneficial impacts to coastal zones would be greater under Alternative 1 than either the No Action Alternative or Alternative 2. No significantly negative impacts to coastal zone resources would occur under Alternative 1.

4.8.3.4 Alternative 2

Implementation of Alternative 2 would reduce the total CRP acreage to 24 million acres, eight million fewer than the other alternatives analyzed. Twenty million acres would be apportioned to General Signup and four million acres apportioned to Targeted Signups. This would result in negative impacts to coastal zone resources, as the benefits currently received from CRP

acreage would be substantially reduced. Removing CRP acreage would likely result in an increase in agricultural production for these lands, which would result in a corresponding increase in sediment, nutrient, and pesticide pollution loading potential to the coastal zone.

As noted in Section 4.8.3.2, and demonstrated by the pollutant-reduction estimates above, the implementation of key signups would be an important element of increasing the overall benefits derived from the CRP program. Using the average CRP field pollutant-loading reduction rates presented in Section 4.6.3.1, the enrollment of 20 million acres in the General Signup would result in a reduction of approximately 42 million tons, 154 million pounds, and 34 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface water bodies. Using the average CRP buffer pollutant-loading reduction rates presented above, the Targeted Signup of four million acres would result in a reduction of approximately 10 million tons, 98 million pounds, and 164.8 million pounds in soil, nitrogen, and phosphorus, respectively, reaching receiving surface waters.

The amount of acreage included under Alternative 2 for the Targeted Signups would be less than that proposed under the No Action Alternative, but half as much as Alternative 1. Reducing the overall amount of Targeted Signup acreage could result in potentially significant negative impacts to coastal zone resources on a local level, most notably an increase in sediment, nutrient, and pesticide pollution-loading potential to the coastal zone in areas with large amounts of land coming out of CRP during FY 2010 to FY 2012. Implementation of Alternative 2 would result in potentially significant negative impacts to the coastal zone relative to the No Action Alternative and Alternative 1.

4.8.4 Provision 3 (Alfalfa Crop History)

4.8.4.1 *Background/Methodology*

Analysis of the potential impact to the coastal zone posed by the alternatives proposed to implement Provision 3 is qualitative based on the relative potential of allowing more or less acres to qualify for enrollment in CRP benefits the coastal zone by reducing potential usage of fertilizers and pesticides to surface water, thereby affecting the coastal zone.

4.8.4.2 *No Action Alternative*

Under the No Action Alternative, the crop rotation practice would retain alfalfa in any rotation with multi-year grasses and legumes and/or summer fallow to meet crop history requirements. Currently, the crop rotation must have occurred within 1996 to 2001. No information is available to assess how many acres in the CRP currently have qualified for enrollment under this alternative, but as discussed in Chapter 2, it would be fairly small. Continued implementation of this existing provision enables additional types of land to be enrolled in CRP; however, alfalfa is a perennial crop that provides surface cover year-round and is not tilled except for establishment. As such, benefits to coastal zones would potentially be less than those achievable by enrolling more intensively cropped lands. In order to establish desirable plants and control invasive species or noxious weeds until desired plants are established, acres enrolled in CRP may be irrigated, potentially affecting water quantity. To reduce these potential short-term impacts, a site-specific conservation plan for each area would be prepared and site-

specific BMPs would be used to mitigate any adverse impacts of implementing specific CPs. These impacts would only last until the CP would be permanently established and are considered minor compared to the overall long-term benefits of the CPs. These temporary impacts could be expected to last anywhere between one and three years.

Any alfalfa land that would be taken out of production would result in indirect beneficial impacts to the coastal zone, as sediment, nutrient, and pesticide loading to the coastal zone would decrease. In areas where alfalfa is irrigated with groundwater, taking alfalfa out of production would reduce the demand on local surface and groundwater supplies, which could result in an indirect impact to the coastal zone by increasing the amount of water flowing to the coastal zone.

However, should alfalfa land be taken out of production instead of land that was cropped four out of the previous six years, then the overall benefits might be reduced. Under the action alternatives, alfalfa alone in rotation with an eligible commodity may qualify for the program, which could conceivably result in more acres being able to qualify for CRP, but this may be offset by the new provision of having to meet a particular rotation interval rather than any rotation as permitted by current procedures. Thus, the No Action Alternative would be slightly more beneficial for the coastal zone than Alternative 1 or 2. No significant negative impacts to coastal zone resources would occur under the No Action Alternative.

4.8.4.3 Alternative 1

Alternative 1 proposes a rotation interval of eight years comprised of six years of alfalfa and two years other eligible commodity, with the rotation occurring within 2002 to 2007, and may be comprised of alfalfa alone instead of with multiyear grasses, legumes, or summer fallow. More acres would qualify under Alternative 1 as opposed to Alternative 2, but potentially less than the No Action Alternative. As such, the provision would have negligible impacts on coastal zone resources due to the limited number of acres available to enroll under the authorized 32 million program acres.

Any alfalfa land that would be taken out of production under Alternative 1 would result in indirect beneficial impacts to the coastal zone, as sediment, nutrient, and pesticide loading to the coastal zone would decrease. In areas where alfalfa is irrigated with surface groundwater, taking alfalfa out of production would reduce the demand on local supplies, which could result in an indirect impact to the coastal zone by increasing the amount of water flowing to the coastal zone. No significant negative impacts to coastal zone resources would occur from implementation of Alternative 1.

4.8.4.4 Alternative 2

Alternative 2 proposes a rotation interval of 12 years, with 10 years of alfalfa and two years other eligible commodity, with the rotation occurring within 2002 to 2007. Any alfalfa land that would be taken out of production under Alternative 2 would result in indirect beneficial impacts to the coastal zone, as sediment, nutrient, and pesticide loading to the coastal zone would decrease. In areas where alfalfa is irrigated with surface and groundwater, taking alfalfa out of production would reduce the demand on local supplies, which could result in an indirect impact to the coastal zone by increasing the amount of water flowing to the coastal zone. Fewer acres

would qualify under this alternative in comparison to the No Action Alternative and Alternative 1; however, the impact to coastal zone resources would not be significantly negative due to the small number of acres that could be enrolled under the 32 million acre program cap from FY 2010 to FY 2012. No significantly negative impacts to coastal zone resources would occur under Alternative 2.

4.8.5 Provision 4 (County Acreage Limitation Exception)

4.8.5.1 Background/Methodology

The analysis of the potential impacts of the alternatives on coastal zone resources from implementation of the alternatives proposed is qualitative. In general, actions that result in more lands enrolled in CRP potentially benefit the coastal zone as lands are taken out of agricultural production and resource conserving covers are established.

4.8.5.2 No Action Alternative

Currently, no more than 25 percent of a county's cropland may be enrolled in CRP and WRP, except when it is determined there would not be an adverse effect to the local economy, and if operators in the county are having difficulties complying with highly erodible lands conservation requirements for working cropland, and excepting for acres enrolled under shelterbelt and windbreak practices. There is not currently an upward limit on acreage in excess; however, the authority to enroll no more than 32 million acres in the program still applies, and any limitations on the allotment of acres for certain CPs or initiatives per State would not be waived.

Exceeding the acreage limitation of 25 percent of a county's cropland results in benefits to the coastal zone, especially within systems associated and downstream of each affected county near the coastal zone. As agriculture land would be taken out of production and enrolled in the CRP and WRP, the amount of sediments, nutrients, and pesticides coming off the converted acreage in each county would decrease. As a result, water flowing to the coastal zone would be expected to be of higher quality than runoff from previously cropped land.

In areas where successive properties could enroll in CRP and WRP, the additive effects would likely be greater than the sum of the individual actions, resulting in an enhanced benefit to the coastal zone. Thus, the higher percentage of land in a county enrolled in CRP and WRP would result in increasingly greater benefits to the coastal zone.

Enrollment and establishment could result in short term negative impacts to coastal zone resources as a result of site preparation activities, including building physical structures such as dikes, and clearing enrolled land of undesirable plant species using chemicals such as herbicides and/or physical methods such as burning, disking, and plowing which would have the potential to add nutrients and pesticides to surface water that recharges aquifers; however, the development and implementation of site specific conservation plans with site specific BMPs would mitigate these impacts.

Implementation of the No Action Alternative potentially benefits the coastal zone similar to that described under Alternative 1, but would realize more potential benefits than Alternative 2, which except for additional acreage enrolled under CREP or Continuous Signup, caps additional CRP and WRP combined acreage at no more than 50 percent of a county's cropland. Because

there are only 24 counties currently exceeding the cap, Alternatives 1 and 2 would not be appreciably different from current conditions. Thus, there would be no practical difference between the alternatives. No significant negative impacts to coastal zone resources would occur under the No Action Alternative.

4.8.5.3 Alternative 1

Under Alternative 1, a county may exercise its yes/no authority to allow additional acreage enrolled under CREP or Continuous CRP beyond the 25 percent cap. This alternative potentially benefits coastal zone resources more than Alternative 2 by allowing more land to be enrolled in CRP, but would be more restrictive than the No Action Alternative, which does not limit additional acres only to CREP or Continuous CRP; however, this difference would not be significant, as the total number of acres authorized for the program would still be 32 million acres, and the rate at which existing contracts would expire until 2012 would allow only a relatively small amount of additional acreage to be enrolled in the program. No significantly negative impacts to coastal zone resources would occur under Alternative 1.

4.8.5.4 Alternative 2

Implementation of Alternative 2 would allow an exception for CREP or Continuous CRP beyond the 25 percent cap, but with a limit of no more than 50 percent of a county's cropland enrolled in CRP. This alternative would be potentially more restrictive than either the No Action Alternative or Alternative 1, and would be potentially less beneficial for coastal zone management, but because of the 32 million acre program limit and the rate of attrition from expected contract expirations, the impacts to coastal zone resources would not be appreciably different from Alternative 1; therefore, no significantly negative impacts to coastal zone resources would occur under Alternative 2.

4.8.6 Provision 5 (Conservation Plan Management)

4.8.6.1 Background/Methodology

Analysis of the potential impacts on coastal zone resources under Provision 5 is qualitative. The application of the management conservation practices authorized under CRP for the acres enrolled in the program in general terms improve coastal zone resources. For example, preserving and reconstructing coastal marshes can help reduce storm damage. Coastal wetlands serve as storm surge protectors when hurricanes or tropical storms come ashore.

4.8.6.2 No Action Alternative

Currently, management as stipulated in the Conservation Plan is expected to occur and mid-contract management is required on contracts executed after FY 2004, and is voluntary for contracts accepted before that year. Some MCM activities potentially negatively impact coastal zone management areas, such as disking, prescribed burns, and activities that could threaten the health and viability of the established vegetative cover (e.g., excessively short mowing). These management activities also potentially result in short-term, temporary localized adverse impacts to water quality and quantity. Management actions on CRP enrolled land may include additional soil disturbance from disking and to repair dikes or buffer strips, applying herbicides

and/or pesticides to control invasive species, or irrigating land during critical growing periods of drought years. To reduce these potential short-term indirect impacts to coastal zone resources, a site-specific Conservation Plan for each area would be prepared and site-specific BMPs would be used to minimize any adverse impacts of implementing specific management techniques.

As the goal of MCM is to preserve the health and viability of the conservation cover, the No Action Alternative would maintain long-term continued beneficial impacts to coastal zone management areas (i.e., reduced sediments, nutrients and pesticides entering surface waters, and less surface or groundwater water pumping). The requirement for MCM on contracts executed after FY 2004 would result in a phased long-term improvement in coastal waters, as more acreage would be subject to MCM in the future. As MCM under current provisions would be required for all CPs, the No Action Alternative would have benefits similar to Alternative 2, but would be potentially more beneficial than Alternative 1, where MCM would be undertaken only if included in the Conservation Plan. The active management would help ensure the acreage would be managed to maximize the indirect benefits to CZM areas; no significant negative impacts would occur under the No Action Alternative.

4.8.6.3 Alternative 1

Under Alternative 1, Conservation Plan management would be required throughout the contract, with MCM conducted only if stipulated in the Conservation Plan. Mid-contract management would not be required on an individual CP basis. This would provide greater flexibility for only undertaking management tasks as may be applicable to the particular lands enrolled than either the No Action Alternative or Alternative 2. Negative impacts to CZM areas could occur if appropriate MCM is not included in the plan. As such, this alternative would be less beneficial for coastal zone resources than either the No Action Alternative or Alternative 2, where individual CPs require specific MCM be conducted; however, Alternative 1 would not result in significantly negative impacts to CZM areas.

4.8.6.4 Alternative 2

Alternative 2 includes the flexibility in tailoring MCM to local conditions by requiring it in the Conservation Plan as needed, but in addition, gives States the ability to specify MCM by CP as appropriate to their region. This alternative provides clear guidance to program participants and flexibility in including management as locally appropriate, effectively maintaining the health and vigor of the conservation cover, which benefits coastal zones through reduced sediments, excess nutrients and pesticides reaching coastal waters. Long-term, beneficial impacts of Alternative 2 would be similar to the No Action Alternative and Alternative 1. Implementation of Alternative 2 would not result in significantly negative impacts to CZM areas.

4.8.7 Provision 6 (Harvesting CRP)

4.8.7.1 Background/Methodology

Analysis of the potential impacts on coastal zone resources under Provision 6 is qualitative. Haying and grazing potentially have both positive and negative impacts on CZM areas. Both activities potentially maximize the health and vigor of a conservation cover, ensuring it meets its

intended purpose, but if not carefully implemented, can increase sedimentation and introduce excess nutrients to surface waters, including coastlands.

4.8.7.2 No Action Alternative

As described in Chapters 1 and 2, currently there are several forms of harvest, haying, and grazing authorized on CRP. Payment reduction assessments vary per type and are not assessed under certain conditions for Limited Grazing. Prescribed grazing for the control of invasive species is currently only allowed to control kudzu. Generally, these activities are not authorized during the PNS of ground nesting birds, and except for emergency haying or grazing, can only occur at most once every three years, varying by State. Haying or grazing may only occur if included in the Conservation Plan. In addition, a site-specific environmental evaluation conducted on those particular lands proposed for enrollment in CRP would be conducted, and the potential impacts of haying and/or grazing on those lands would be assessed at that time.

Based upon the findings of the 13 EAs being completed to assess changes to managed haying and grazing provisions as authorized by the 2002 Farm Bill, managed haying and grazing have the potential to adversely impact surface water and hence coastal zones if the amount of vegetation removed is excessive and prolonged. The managed haying and grazing EAs found no significant negative impacts to soils or vegetative covers from increasing the frequency of these activities from once every five or 10 years to once every three years. Rather, potentially significant impacts to vegetative covers could occur from harvest during key vegetation growth or dormancy states, or by periodic disturbance conducted too infrequently, which could diminish the health and vigor of grassland plants. Any action that removes vegetative cover has the potential increase soil erosion potentially leading to increased sedimentation of nearby coastal zones, and the volume and velocity of runoff, which may contribute to erosive flooding of zones.

The No Action Alternative would not indirectly contribute to failure of the conservation cover because Conservation Practice Standard 511 Forage Harvest Management requires a minimum stubble height be retained to allow vegetation to recover by frost. Providing adequate rest between haying and grazing episodes would be attained, NRCS Conservation Practice Standards that address potential negative impacts (e.g., Forage Harvest Management 511 or Prescribed Grazing 528) are implemented, and haying or grazing would be adjusted in response to resource conditions on the land just prior to undertaking these activities, then the long-term viability of the conservation cover would be ensured, and coastal zones are protected. More importantly, haying and grazing, if adequately controlled, mimic the historic disturbance regimes that maintain early succession grasslands, resulting in healthier CRP grass stands that will continue to benefit coastal zones.

Under the No Action Alternative, the forms of authorized harvest, haying, and grazing on CRP lands would continue; however, it would be unlikely that there would be more than minor changes to hay production and grazing on CRP acres based on the existing constraints. Any changes would be minor in comparison to the total production of counties with CRP acreage (Section 4.11.7.2) and impacts would remain minor and would not be significantly negative. By implementing controlled grazing strategies, potential impacts to the coastal zone from haying and grazing on CRP lands can be reduced. As currently authorized prescribed grazing for invasive species is limited to controlling kudzu only; continuation of current procedures is

potentially less beneficial for coastal zones than either of the action alternatives, as this tool to control other invasive species would not be available to CRP participants. No significantly negative impacts to coastal zone resources would occur under the No Action Alternative.

4.8.7.3 Alternative 1

Under Alternative 1 only those CPs currently authorized for managed haying and grazing, incidental grazing (gleaning), and harvest (biomass) would be authorized for routine grazing (including gleaning) and managed harvest. Any change to the established PNS, period (timing) of routine grazing and harvest, length of harvest, and frequency of routine grazing and harvest by States would require individual analysis under NEPA by those State Technical Committees desiring changes. Prescribed Grazing for control of invasive plant species other than kudzu is authorized, but would not be authorized for CP23, CP23A, non-grass related CP25, CP27, CP31, or CP39-41 if implemented, and would occur only in accordance with a control plan included in the Conservation Plan. A payment reduction commensurate with economic value of the activity would be estimated on percentage basis related to the percent of year the authorized activity would occur. No payment reduction would be applied to prescribed grazing for the control of invasive species.

Under Alternative 1, general impacts to the coastal zone from harvest or grazing would be similar to those discussed under the No Action Alternative. The impacts of Alternative 1 would be similar to Alternative 2, but Alternative 1 would be more beneficial than the No Action Alternative since it would permit prescribed grazing of invasive plants other than just kudzu. Potential negative impacts would be minimized by employing the same BMPs and following NRCS practice standards as described for the No Action Alternative. Harvesting (haying) and routine grazing if properly controlled for local conditions benefits the health and vigor of the vegetative cover; this would limit the potential for increasing soil erosion through vegetative loss. Expanding the use of prescribed grazing under this alternative for control of additional invasive plant species other than kudzu protects coastal zones by ensuring the conservation cover would be healthy and viable in the long-term, and limiting the necessity for the application of herbicides.

Requiring additional State-level NEPA analysis of changes to the PNS, timing, and frequency of managed harvesting and routine grazing would ensure potential negative environmental impacts would be determined and addressed on a local scale. A site-specific environmental evaluation would be conducted for particular lands proposed for enrollment in CRP and the potential impacts from managed harvesting and routine grazing would be assessed at that time. No significant negative impacts to coastal zones would occur under this alternative if the Conservation Plan would be followed and adapted to resource conditions just prior to haying or grazing, the CPs authorized for managed harvest or routine grazing do not change, and State-level NEPA would be completed for any proposed changes to the PNS, timing, length and frequency of these activities prior to implementation.

4.8.7.4 Alternative 2

Alternative 2 provisions are the same as Alternative 1, but differ in that changes to CPs authorized for managed harvesting or routine and prescribed grazing would be permitted under

Alternative 2; however, the changes to CPs would require additional NEPA analysis by those State Technical Committees desiring such changes.

Under Alternative 2, impacts to the coastal zone would be similar to those of Alternative 1, but more beneficial than the No Action Alternative, which permits prescribed grazing only for controlling kudzu. No significant negative impacts to coastal zones would occur from managed harvesting or routine grazing if these activities would be completed in accordance with existing standards, provisions, and guidelines, and the parameters for conducting these activities are stipulated in the Conservation Plan that would be adjusted to resource conditions on the land prior to conducting these activities. Requiring additional State-level NEPA compliance prior to approving changes in which CPs would be authorized for managed harvesting or routine grazing, in addition to any changes in the current PNS, timing, length or frequency of managed harvesting or grazing established for individual States, ensures potential negative impacts to coastal zones would be addressed on a local scale. A site-specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure, which would identify and address any potential negative impacts to coastal zones posed by managed harvesting or routine grazing. No significant negative impacts to coastal zones would occur from implementation of Alternative 2.

4.8.8 Provision 7 (NASS Cash Rental Rates)

4.8.8.1 Background/Methodology

Analysis of the potential impacts on coastal zone resources under Provision 7 is qualitative. In general, retiring land from agricultural production and establishing conserving vegetative covers benefits coastal zone resources.

4.8.8.2 No Action Alternative

Under the No Action Alternative, the existing annual rental payment rules with a soil productivity adjustment as described in Chapter 1 would continue to be implemented. Furthermore, Targeted Signup incentives (for CREP, non-CREP CCRP, and initiatives) would remain unchanged. In accordance with a procedure that became effective October 1, 2009 maintenance incentives remain the same for contracts executed before that date, but for contracts executed after that date, maintenance incentives are reduced to zero for General Signup practices (CRP-644). Under the existing program, benefits to CZM areas would continue to accrue within FY 2010 to FY 2012 in largely the same places: any geographic shift in the distribution of enrollments would change in response to scheduled expiring acres, but not due to continuation of existing rental rates. Both the No Action Alternative and Alternative 1 would maintain participation in General and Targeted Signups at similar levels nationally and have similar effects at that scale. In comparison, Alternative 2 may not achieve Targeted Signup enrollment goals, thus the No Action Alternative is more beneficial, but not substantially so. No significantly negative impacts to CZM areas would occur from continuation of the program as currently constituted.

4.8.8.3 *Alternative 1*

For new General Signup contracts after December 1, 2009, updated NASS market dryland and irrigated rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) may be increased to ensure program acreage targets would be achieved. Maintenance incentives are reduced to zero for General Signup practices in accordance with the procedure that became effective October 1, 2009 (CRP-644). Because some areas would realize higher CRP payments than others would, regional shifts in enrolled acres may occur, but overall participation in the program would not decrease. Both General and Targeted Signup enrollment goals at current levels would likely be met under this alternative. The impacts of Alternative 1 would therefore be similar to the No Action Alternative but more beneficial than Alternative 2, which if implemented may not reach Targeted Signup goals. No significant negative impacts to coastal zones would occur under Alternative 1.

4.8.8.4 *Alternative 2*

Alternative 2 would use updated NASS market dryland and irrigated rental rates with soil productivity adjustments for all contracts executed after December 1, 2009 while incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) would remain the same as the current program. Maintenance incentives are reduced to zero for General Signup practices in accordance with a procedure that became effective October 1, 2009 (CRP-644). As no additional incentives would be offered to assure program acreage goals would still be met, this alternative in comparison to the others considered would have more potential negative impacts for coastal zone resources. Because some areas would realize higher CRP payments than others would, regional shifts in enrolled acres may occur. As detailed in Section 4.11.8.4 Socioeconomic Resources, overall participation in the General or Targeted Signups would not decrease substantially, assuming a 4.5 million acre Targeted Signup goal, which is the existing condition. No significant negative impacts to coastal zones would occur from implementation of Alternative 2.

4.8.9 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives)

4.8.9.1 *Background/Methodology*

The potential impacts to coastal zone resources of the alternatives proposed to address this provision are qualitatively analyzed. In general, providing incentives for reducing agricultural production and establishing conserving vegetative covers benefits coastal zone resources.

4.8.9.2 *No Action Alternative*

Section 1244(a) Beginning Farmers and Ranchers currently provides for incentives to be offered to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs. Continuation of the ability to offer incentives stands to indirectly benefit coastal zone resources by taking marginal lands out of agricultural production and establishing long-term resource conserving covers. There could be short-term, adverse impacts to coastal zone resources related to establishment and site preparation activities that have the potential to add nutrients and pesticides to surface water. To reduce these potential short-term impacts to

coastal zone resources, a site-specific conservation plan for each area would be prepared and site-specific BMPs would be used to mitigate any adverse impacts of implementing specific CPs. These impacts would only last until the CP would be permanently established and are considered minor compared to the overall long-term benefits of the CPs. These temporary impacts could be expected to last anywhere between one and three years.

However, because Alternative 1 and 2 also expand to offer incentives to socially disadvantaged farmers and ranchers as well, both of these alternatives would potentially benefit coastal zone resources more than the No Action Alternative. As discussed in Section 3.12 Environmental Justice, because the pool of farmers and ranchers that meet the definition of socially disadvantaged would be relatively small, no significant negative impacts to coastal zone resources would occur under the No Action Alternative.

4.8.9.3 Alternative 1

Alternative 1 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for cost share rates at least 25 percent above otherwise applicable rates (up to 90 percent), and advance payments of up to 30 percent of the amount determined for the purchase of materials and services. The USDA budget would require PAYGO offset which could potentially reduce other program services. Alternative 1 provides the most incentive for the affected populations to participate in the program, enhancing the potential of reaching the full enrollment of authorized acres in CRP; however, given the relatively small population that would qualify for these incentives, the impact of this alternative on coastal zone resources would be not substantially different from the No Action Alternative or Alternative 2. No significantly negative impacts to coastal zone resources would occur under Alternative 1.

4.8.9.4 Alternative 2

Under Alternative 2, there would be incentives added for socially disadvantaged, farmers, ranchers, and Indian Tribes to increase their access to conservation programs, most likely for CPs that currently are eligible for SIPs. Increased incentives would help take agriculture land out of production, establish conservation cover, and reduce nutrient and pesticide releases to surface waters, thus resulting in beneficial impacts to coastal zone resources; however, the required PAYGO offset could potentially reduce other program services. Alternative 2 would be less beneficial as compared to Alternative 1, but of greater benefit than the No Action Alternative. As discussed above, the size of the affected population would be relatively small, thus, no significantly negative impacts to coastal zone resources would occur under Alternative 2.

4.8.10 Provision 9 (Pollinator Conservation)

4.8.10.1 Background/Methodology

Analysis of the potential impacts to Coastal Zone Management areas of the alternatives proposed to implement this provision is qualitative. Measures to benefit pollinators may have both positive and negative impacts on water quality and quantity, and thus, CZM areas. In general, any activity that would remove vegetative cover could negatively impact coastal zones.

4.8.10.2 No Action Alternative

Currently, only general methods to reduce impacts to pollinators are offered in NRCS practice standards and technical guides (e.g., spot treatment of herbicides and pesticides, not harvesting at peak flowering). In addition, SAFE projects that target benefiting pollinators may also be implemented.

The impacts of the No Action Alternative on coastal zones are similar to those discussed for surface water in Section 4.6.10.1. Many methods to benefit pollinators have little potential to negatively impact coastal zones, but installation of SAFE projects and management activities to maintain the health and vigor of certain types of vegetative stands that ultimately benefit pollinators, such as disking and prescribed burns, have the potential to negatively impact CZM areas if not carefully applied. Adherence to NRCS practice standards for installation, establishment, and management, and tailoring the Conservation Plan to the individual lands enrolled, should adequately protect coastal areas. Most CRP acreages are not directly in the coastal zone; however, long-term CRP actions in watersheds would transfer downstream and result in positive impacts to coastal resources. The CZMA requires Federal activities that are reasonably likely to affect use of lands or waters, or natural resources of the coastal zone to be consistent to the maximum extent practicable with the enforceable policies of the State's Coastal Zone Management Plan. Therefore, the No Action Alternative would be consistent to the maximum extent practicable with the enforceable policies of applicable State coastal zone management plans.

The No Action Alternative would have impacts similar to Alternative 2, but would potentially be more beneficial to coastal zones than Alternative 1, which would devote acreage to a new CP with potentially fewer direct benefits for coastal zones (such as wetland creation and restoration). No significant negative impacts to CZM areas would occur from current procedures concerning pollinators.

4.8.10.3 Alternative 1

Under Alternative 1 a new Pollinator Habitat Conservation Practice would be created with a goal of up to five percent of enrolled acres into new pollinator friendly habitat. In addition, existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators by including plant species beneficial for pollinators at specified composition rates, and other such practices.

The impacts of Alternative 1 on coastal zones would be similar to those discussed in Section 4.6.10.2 for surface water. Indirect benefits from modifying CPs on behalf of pollinators include a reduction in the sediment, nutrient, and pesticide pollution loading potential to surface water and thus coastal zones. Creation of a CP that would apportion 1.6 million acres (based upon a maximum of 32 million acres in the program) could potentially reduce enrollments under CPs that directly benefit coastal zones, such as wetland creation or restoration practices, or indirectly reduce soil erosion at a more substantive rate (such as buffer practices). As such, implementation of Alternative 1 could increase sediment, nutrient, and pesticide pollution loading potential to CZM areas; however, as the overall proportion of all CRP acres devoted to pollinators would be small, this potential negative impact on coastal zones would be negligible. Alternative 1 would be less beneficial to CZM areas than either the No Action Alternative or

Alternative 2; however, because the overall proportion of all CRP acres devoted to pollinators under Alternative 1 would be small, this potentially negative impact on coastal zones would not be significant.

4.8.10.4 Alternative 2

Under Alternative 2, only the existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators. The encouragement of habitat to support pollinators would indirectly impact the coastal zone. The change to more pollinator conservation habitat would in turn reduce the sediment, nutrient, and pesticide pollution loading to surface waters and wetlands and in turn, the coastal zone. This alternative would have little potential to impact coastal zone resources, but would be potentially more beneficial than Alternative 1; however, the degree of this benefit to wetlands would not be substantially different than either the No Action Alternative or Alternative 1. No significantly negative impacts to coastal zone resources would occur under Alternative 2.

4.9 SOIL RESOURCES

4.9.1 Significance Criteria

Impacts to soil resources would be considered significant if implementation of an action resulted in permanently increasing erosion, altered soil characteristics that threaten the viability of the conservation cover, or affected unique soil conditions.

4.9.2 Provision 1 (National Conservation Initiatives)

4.9.2.1 Background/Methodology

Analysis of the potential impact to soils posed by the alternatives proposed to implement this Provision is both quantitative and qualitative. Current estimates from a study completed by the Food and Agricultural Policy Research Institute (FAPRI 2007) indicates that, on average across the nation, soil erosion is reduced by an estimated 12.1 tons per acre per year (ac/yr) when land is taken out of agricultural production and enrolled in CRP. The amount of erosion reduction achieved by enrollment in CRP is partially related to how highly erosive soils are prior to enrollment. Acres enrolled under General Signup are more likely to be classified as HEL than those under Continuous Signup, which has no such land eligibility requirement.

4.9.2.2 No Action Alternative

National Conservation Priority Areas and payment incentives designed to encourage enrollment in these areas would continue as currently configured under the No Action Alternative. In addition, CREPs and initiatives implemented since the 2002 Farm Bill would also continue unchanged under this alternative. In 2008 it is estimated that CRP reduced soil erosion by about 447 million tons (FSA 2009c). Continuation of the current program would maintain benefits in soil reduction and increased soil quality; however, these benefits would likely be less than those achievable under Alternative 1, which proposes an initiative specifically targeting soils. The benefits of this alternative are also not very different from those attained by Alternative 2, which

continues current procedures, but includes a reduction in wetland initiatives. No significant negative impacts to soils would occur under the No Action Alternative.

4.9.2.3 Alternative 1

This alternative would address National CPAs, State, and to a certain extent regional conservation initiatives as currently implemented, but in addition, would offer three new national conservation initiatives under Continuous Signup: the Water Resource Protection Initiative, Highly Erodible Land Initiative, and Regional Restoration of Critical Wildlife Habitat Initiative. Implementation of the new initiatives requires PAYGO offset in the USDA budget. Of these new national conservation initiatives proposed for this alternative, only the Highly Erodible Land Initiative is likely to have a substantial impact on soils, specifically regarding soil loss. This option is to enroll up to 250,000 acres having an EI greater than 50. Figure 4.9-1 displays the counties identified by the 1997 National Resources Inventory as having an EI of 50 or greater. Given these soils are so highly erosive, it is not likely that they would be cropped as intensively as soils with lower erodibility indices. Nevertheless, using the methodology described above, it is likely that erosion from water and wind would be reduced under the Highly Erodible Land Initiative of this alternative by at least 48.4 tons ac/yr, resulting in a total reduction in soil erosion of 12.1 million tons. Establishment of vegetative covers protecting soil from erosion and increasing the organic content of soils would be realized by the other proposed national initiatives as well. Since the costs of these initiatives require offset in the USDA budget under PAYGO, total gains may be tempered if other program services are reduced. Alternative 1 is more beneficial for soils than the No Action Alternative or Alternative 2, but given the small amount of acreage set aside for this initiative, not substantially so. No significant negative impacts to soils would occur from implementation of Alternative 1.

4.9.2.4 Alternative 2

Under Alternative 2, no changes to existing National CPAs, CREPs, or national conservation initiatives would occur, except the wetlands initiative would be reduced. Establishing wetlands can reduce soil erosion along water banks, as wetlands reduce the velocity of and store excess runoff, diminishing downstream flooding. A reduction in wetland acres provides an opportunity to enroll more acres in General CRP that have greater benefits for soil erosion and soil quality, hence, Alternative 2 may be more beneficial for soils than the No Action Alternative. Implementation of Alternative 2 would be less beneficial for soils than Alternative 1 that includes an initiative targeting highly erosive soils; however, this reduction is not likely to be substantially negative since the associated acreage would be relatively small. Alternative 2 would still provide incentives for landowners to enroll in CRP, taking agricultural lands out of production and establishing soil resource conserving covers. Implementation of Alternative 2 would have no significant negative impacts to soils.

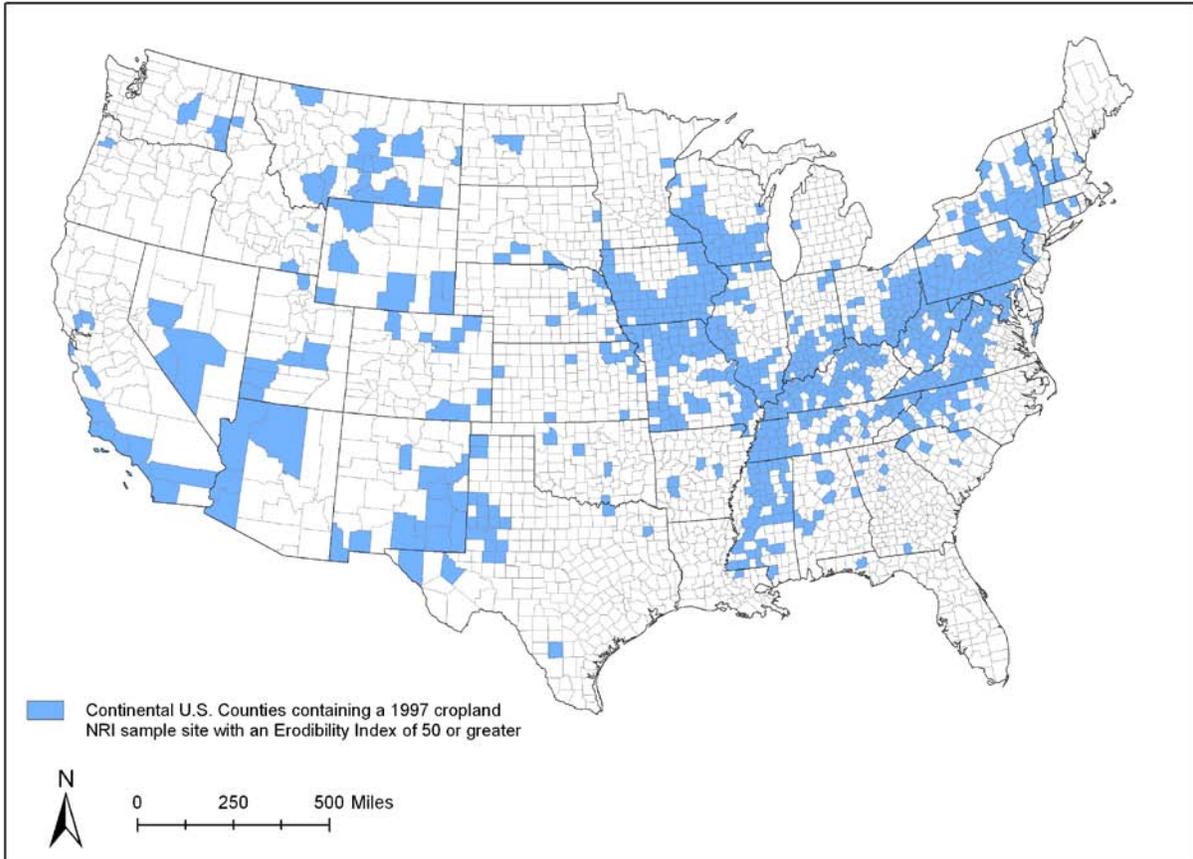


Figure 4.9-1. Counties with Soils Having an EI of 50 or Greater.

4.9.3 Provision 2 (Maximum Enrollment)

4.9.3.1 Background/Methodology

Analysis of this provision's potential impacts on soils under the alternatives considered below is both qualitative as well as quantitative on a broad scale. Enrollment of acres in practices with substantive reductions in soil erosion is beneficial, whereas any reduction in acres enrolled in the program could have negative impacts on soils, as lands would potentially remain in agricultural production.

4.9.3.2 No Action Alternative

This alternative apportions 27.5 million acres to CRP General Signup and Targeted Signups (Continuous) acreage to 4.5 million acres of the total 32 million acres authorized in FY 2010. Under the No Action Alternative, the balance between the General and Continuous sign-ups changes slightly from FY 2009 levels toward Continuous Sign-up priorities, most notably increasing acres for Farmable Wetlands, SAFE, and Initiatives. Regular Continuous practices are scheduled at two million acres.

The Food and Agricultural Policy Research Institute (FAPRI 2007) has estimated CRP lands enrolled under General Signup practices reduce soil erosion 12.1 tons ac/yr, thus, the No Action apportionment of acres to General practices would result in reducing soil erosion an estimated 333 million tons annually. Continuous Sign-up practices related to reducing wind and water induced soil erosion (CP5A Field Windbreak, CP24 Cross Wind Trap Strips, CP15 Contour Grass Strips) are expected to have a more positive impact on soil erosion rates than other Continuous CPs that focus on water quality or wildlife; however, greater reductions in soil erosion rates are achieved by retiring whole fields from agricultural production under General Signup.

Targeted Sign-ups for CREP, Farmable Wetlands, SAFE and Initiatives while likely to have a positive impact on water quality issues and wildlife, are less likely to have as much benefit for soil erosion and soil quality if they do not include CPs designed to directly address soil erosion.

Continuation of the No Action Alternative apportionment of the maximum 32 million acres authorized by the 2008 Farm Bill is potentially more beneficial for soils than Alternative 1, since more acres would be devoted to General Signup practices. It would also be more beneficial for soils than Alternative 2, which reduces the total number of acres authorized for the program. No significant negative impacts to soils would occur from the No Action Alternative.

4.9.3.3 Alternative 1

This alternative would maintain the maximum CRP acreage limit at 32 million acres, but apportions only 24 million acres to General Sign-up with eight million acres to Continuous Sign-up. Under this alternative, approximately 290 million tons of soil erosion would be reduced annually by General Signup acres; however, additional acres enrolled under Continuous Signup are potentially more beneficial for soils, if the number of acres devoted to CPs with the most potential for reductions in soil erosion (e.g., contour grass strips, windtraps, windbreak, and shelterbelt practices) are not substantially outnumbered by the other Continuous Signup acres. This alternative reduces General Signup acres which have the most potential to diminish soil erosion in comparison to agricultural production; therefore, Alternative 1 could be less beneficial for soils than the No Action Alternative; however, the difference would not be significantly negative since the total number of acres in the program would be maintained at 32 million acres. Compared to Alternative 2, Alternative 1 would maintain four million more acres in General Signup and nearly twice as many acres in Targeted Signups, hence, would be more beneficial for soil quality.

4.9.3.4 Alternative 2

This alternative calls for an across the board reduction in CRP acres from present levels to no more than 24 million acres in the program, with 20 million acres apportioned to General Signup and four million acres apportioned to Targeted Signups. This would be eight million acres less than either the No Action Alternative or Alternative 1. The apportionment of the acres among General Signup and Targeted Signups is similar to that of the No Action Alternative. Soil erosion reductions achieved from enrolling lands in General Signup under this alternative would be an estimated 242 million tons annually. This rate is about 27.5 percent less than the No Action Alternative and about 16.5 percent less than Alternative 1. Overall, the reduction of eight million

acres proposed by this alternative would be negative for soils; however, the relative impact of returning these acres to agricultural production on a national scale is small, considering there are currently about 406 million acres of active cropland in the lower 48 States (NASS 2009a). Implementation of Alternative 2 could have significantly negative impacts on soils at the local or State level in areas that have a large amount of acreage leaving the program due to contract expirations scheduled to occur from FY 2010 to FY 2012.

4.9.4 Provision 3 (Alfalfa Crop History)

4.9.4.1 Background/Methodology

Alfalfa is a long-lived perennial grown for forage or hay. Ground is typically tilled once for planting the crop, which may remain productive for four to 10 years (Jennings 2001). As discussed in the vegetation section, alfalfa is autotoxic, requiring rotation with another crop to refresh the ground and eventually allow another alfalfa crop to be planted. Alfalfa is therefore a low-till perennial ground cover that protects soil. It also fixes nitrogen in the soil, increasing the nutrient value of soils for plant life, and improves tilth. Retiring land from producing alfalfa for enrollment in CRP is less beneficial for soils than converting other lands used more intensively, but does benefit soils by reducing water erosion, depletion of soil nutrients, and decreasing soil salinity associated with irrigated alfalfa production. The impacts on soils of the alternatives considered to implement this provision are assessed qualitatively based on the relative potential of allowing more or less acres to qualify for enrollment in CRP.

4.9.4.2 No Action Alternative

Under the No Action Alternative the crop rotation practice would retain alfalfa in any rotation with multi-year grasses and legumes and/or summer fallow to meet crop history requirements. Currently, the crop rotation must have occurred from 1996 to 2001. Continuation of the program as established would not offer operators or landowners the opportunity to include lands planted in alfalfa alone in rotation with another agricultural commodity. It is not known how many acres in the CRP currently have qualified for enrollment under the existing provision, but as discussed in Chapter 2, it is expected to be fairly small. Continued implementation of this existing provision enables additional types of land to be enrolled in CRP; however, alfalfa is a perennial crop that provides surface cover year-round and is not tilled except for establishment. Enrollment of these types of acres (especially irrigated acres) into CRP does benefit soils, but not as much as enrolling lands that meet the crop history requirements of being cropped four of the previous six years: higher reductions in soil erosion are achieved by retiring agricultural lands that are tilled more often. The No Action Alternative may be slightly more beneficial for soils than either Alternative 1 or 2. Under the action alternatives, alfalfa alone in rotation with an eligible commodity may qualify for the program, which could conceivably result in more acres being able to qualify for CRP, but this may be offset by the new provision of having to meet a particular rotation interval rather than any rotation as permitted by current procedures. No significant negative impact to soils would occur from continuation of the existing provisions.

4.9.4.3 *Alternative 1*

Alternative 1 proposes a rotation interval of eight years comprised of six years of alfalfa and two years other eligible commodity, with the rotation occurring within the period of 2002 to 2007. More acres would qualify under Alternative 1 as opposed to Alternative 2, which has a longer rotation interval, but potentially less than the No Action Alternative which has no interval specified. As such, the provision would have negligible impacts on soils due to the limited number of acres that would be enrolled under the 32 million acre program cap from FY 2010 to FY 2012. No significant negative impacts to soils would occur from implementation of Alternative 1.

4.9.4.4 *Alternative 2*

Alternative 2 proposes a rotation interval of twelve years, consisting of 10 years of alfalfa and two years other eligible commodity, with the rotation occurring from 2002 to 2007. Fewer acres would qualify under this alternative in comparison to the No Action Alternative and Alternative 1; however, the impact to soils would not be significantly negative due to the small number of acres that could be enrolled under the 32 million acre program cap from FY 2010 to FY 2012.

4.9.5 Provision 4 (County Acreage Limitation Exception)

4.9.5.1 *Background/Methodology*

The analysis of the potential impacts of the alternatives on soils from implementation of the alternatives proposed for this provision is qualitative. In general, actions that result in more lands enrolled in CRP potentially benefit soils as lands are taken out of agricultural production and resource conserving covers are established.

4.9.5.2 *No Action Alternative*

Currently, no more than 25 percent of a county's cropland may be enrolled in CRP and WRP, except when it is determined there would not be an adverse effect to the local economy and operators are having difficulty complying with HEL conservation provisions, and excepting acreage enrolled under shelterbelt and windbreak practices. Currently there is not an upward limit on acreage in excess; however, the authority to enroll no more than 32 million acres in the program still applies, and any limitations on the allotment of acres for certain CPs or initiatives per State would not be waived. Allowing more lands to be enrolled in the program potentially takes land out of agricultural production and reduces soil erosion, while establishing long-term conservation covers increases the organic content and biota of soils. Implementation of the No Action Alternative benefits soils similar to that expected under Alternative 1, but would realize more benefits than Alternative 2, which except for additional acreage enrolled under CREP or Continuous Signup, caps additional CRP and WRP combined acreage at no more than 50 percent of a county's cropland. No significant negative impacts to soils would occur from continuation of the existing provisions.

4.9.5.3 *Alternative 1*

Under Alternative 1, a county may exercise its yes/no authority to allow additional acreage enrolled under CREP or Continuous CRP beyond the cap, which stipulates no more than 25

percent of a county's cropland may be enrolled in CRP and WRP combined, with no additional per county acreage limitation. This alternative benefits soils by potentially allowing the most land to be enrolled in CRP among the action alternatives, but would be more restrictive than the No Action Alternative, which would not limit additional acres only to CREP or Continuous CRP; however, this difference would not be substantial, since the total number of acres authorized for the program is still 32 million acres, and the rate at which existing contracts are expected to expire until 2012 would allow only a relatively small amount of additional acreage to be enrolled in the program. Further, historically only a small number of counties have exceeded the cap, which would not likely change under Alternative 1. Although there would be potential differences in impacts among the alternatives considered to implement this provision, no practical differences would likely occur based upon the limited number of counties expected to exercise this option. No significantly negative impacts to soils would occur under Alternative 1.

4.9.5.4 Alternative 2

Alternative 2 would enable a county to exercise its yes/no authority to exceed the 25 percent cap on county cropland being enrolled in both CRP and WRP at any one time under CREP and Continuous CRP signups, but up to a new limit of no more than 50 percent. This alternative would be more restrictive than either the No Action Alternative or Alternative 1, and would be potentially less beneficial for soils, but because of the 32 million acre program limit and the rate of attrition from expected contract expirations, coupled with the limited number of counties expected to exercise this option, the impacts to soils would not be significantly negative.

4.9.6 Provision 5 (Conservation Plan Management)

4.9.6.1 Background/Methodology

Analysis of the potential impacts on soils of the alternatives considered below is qualitative.

4.9.6.2 No Action Alternative

Currently, management as stipulated in the Conservation Plan is expected to occur and mid-contract management is required on contracts executed after FY2004, and is voluntary for contracts accepted before that year. Currently, each State has developed specific management requirements that ensure plant diversity and wildlife benefits while maintaining soil and water quality. State Committees must submit requests to exempt an MCM requirement for approval by the Conservation and Environmental Programs Division. Some MCM activities potentially negatively impact soils, such as disking, prescribed burns, and activities that could threaten the health and viability of the established vegetative cover (e.g., excessively short mowing); however, adherence to NRCS Practice Standards for conducting Prescribed Burns (338), Windbreak and Shelterbelt Renovation (650), Early Successional Habitat Management (647), Forage Harvest Management (511), and Forest Stand Improvement (666) minimize the potential for negative impacts, which are short-term and localized. Additionally, requiring MCM on an individual CP basis as a national standard imposes management that may not be applicable to local conditions, and requires centralized administration. Since the goal of MCM is to preserve the health and viability of the conservation cover, and this protects soil in the long-term, continuation of existing provisions would not be significantly negative for soils. Since MCM is

required for all CPs, the No Action Alternative has benefits similar to Alternative 2; but is more beneficial potentially than Alternative 1, where MCM would be undertaken only if included in the Conservation Plan.

4.9.6.3 *Alternative 1*

Alternative 1 would require Conservation Plan management throughout the contract term and MCM tasks to be completed only if included in that plan. Mid-contract management would not be required on an individual CP basis. This alternative would be easier to administer than either the No Action Alternative or Alternative 2, and would provide the greatest flexibility for only undertaking management tasks as may be applicable to local conditions. Negative impacts to soil could occur if appropriate MCM is not included in the plan. As such, this alternative would potentially be less beneficial for soils than either the No Action Alternative or Alternative 2, where individual CPs would require specific MCM be conducted. Alternative 1 would not result in significantly negative impacts to soils.

4.9.6.4 *Alternative 2*

Alternative 2 would require MCM on certain CPs as determined by individual State Technical Committees and MCM tasks if specified in the Conservation Plan. This alternative provides flexibility in requiring MCM in the Conservation Plan designed for a particular parcel of land, but also provides States the ability to specify MCM by CP as appropriate to their region. The benefits of Alternative 2 would therefore be similar to the No Action Alternative and Alternative 1. Implementation of Alternative 2 would not be significantly negative for soils.

4.9.7 Provision 6 (Harvesting CRP)

4.9.7.1 *Background/Methodology*

Haying and grazing could have both positive and negative impacts on soils depending upon cover management, the factor considered in measuring soil erosion with RUSLE that is potentially affected by these activities. Therefore, a qualitative discussion of changes to the cover management factor will be used to determine impacts. This discussion will include alterations to each subfactor associated with cover management as noted below.

Cover Management Factor (c) and Subfactors

The cover management equation is:

$$C = c_c g_c s_r r_h s_b s_c s_m$$

Where:

C = daily cover management factor

c_c = daily canopy subfactor

g_c = daily ground (surface) cover subfactor

s_r = daily soil surface roughness subfactor

r_h = daily ridge height subfactor

s_b = daily soil biomass subfactor

s_c = daily soil consolidation subfactor

s_m = daily antecedent soil moisture subfactor.

The daily canopy subfactor refers to the height and percent coverage of the daily canopy and how it affects water drop impact energy. A higher canopy allows water drops to collect and fall from a greater height increasing water drop energy. The gradient of canopy (location and density of canopy material) affects how waterdrops interact and the energy they maintain. Finally, canopy shape (triangle, inverted triangle, rectangle, etc.) affects what percent of the surface is covered by the canopy.

The ground cover subfactor includes the cover directly in contact with the soil surface that primarily affects rain drop impact and soil runoff. Ground cover can help with infiltration, slowing runoff and can reduce rain drop impact energy. Of note – canopy over ground cover is considered to be non-effective and is given no credit in the calculations.

The soil surface roughness subfactor is based on random roughness created by mechanical disturbance. It usually ranges from zero to three inches. Increased roughness generally creates depressions and weather resistant clods, increases infiltration, and increases hydraulic roughness that slows runoff.

The ridge height subfactor takes into account the height and orientation of ridges. The higher the ridges the more surface area available for soil erosion. Additionally, when ridges are oriented parallel to the overland flow path, rill-interill erosion will be increased.

The soil biomass subfactor estimates how soil biomass affects rill-interill erosion. Live root biomass helps reduce soil erosion in several ways: produce exudates, increases infiltration through transpiration, and mechanically holds the soil in place. Additionally, dead biomass and buried residue can also mechanically hold the soil in place.

The soil consolidation subfactor measures how loose the soil is depending upon soil disturbance. Soils that have been tilled, etc. have a higher susceptibility to erosion.

Any action that removes soil cover has the potential to increase soil erosion. In regards to cover management specifically, haying or grazing could impact the following characteristics:

Canopy height would be affected by both haying and grazing. In grasslands, altering the canopy height from approximately six to 12 inches to a minimum ranging from two to five inches results in a relatively short interval during which canopy height would be shortened until regrowth, providing less canopy cover. In upland wildlife habitat conservation covers, provisions ensuring adequate leaf area of woody shrubs and trees for recovery within the growing season ensure the canopy is preserved; however, canopy cover over groundcover is given no credit in assessing soil erodibility in RUSLE2 calculations. Therefore, for most conservation covers, this subfactor would not be a factor in soil loss.

Groundcover on conservation covers that are primarily grasses and legumes would be close to 100 percent except in areas where a certain amount of bare ground is required in order to target the needs of particular grassland bird species. Regardless of the percentage of existing grassland surface, groundcover would be minimally affected by haying and grazing actions,

especially since NRCS Forage Harvest Management 511 and State technical guidance requires a minimum height established per dominant plant species remains after either activity. Haying would reduce the canopy cover, but leave the groundcover. Grazing may also temporarily reduce groundcover through hoof action where livestock concentrate; however, both of these effects would be localized, temporary, and minimal.

As with groundcover, soil surface roughness may be minimally affected during haying and grazing in areas where equipment or livestock hooves alter the soil surface. In most cases, hooves and mechanical equipment may increase random roughness by creating depressions from tires and hooves throughout fields.

Any existing ridges across CRP lands should not be affected by haying and grazing activities which would not create or destroy any existing ridges as hay is harvested or livestock graze fields.

Live biomass in soils would not be affected by implementation of haying and grazing routines. Dead biomass may be increased, particularly during haying, as some cut hay is lost during the harvesting process. Too much thatch can inhibit water infiltration to soil.

Soil consolidation should remain unaffected by haying or grazing because neither requires tilling or other soil disturbance actions (aside from minimal disturbance due to equipment or livestock hooves).

4.9.7.2 No Action Alternative

As described in Chapters 1 and 2, currently there are several forms of harvest, haying, and grazing authorized on CRP. Payment reduction assessments vary by type and are not assessed under certain conditions for Limited Grazing. Prescribed grazing for the control of invasive species is currently only allowed to control kudzu. Generally these activities are not authorized during the PNS of ground nesting birds, and except for emergency haying or grazing, can only occur at most once every three years, varying by State. Haying or grazing may only occur if included in the Conservation Plan. In addition, a site-specific environmental evaluation conducted on those particular lands proposed for enrollment in CRP would be conducted, and the potential impacts of haying and/or grazing on those lands would be assessed at that time.

In 2007, CCC and FSA initiated studying the impacts of changing the frequency of managed haying and grazing under the 2002 Farm Bill provisions in 13 Midwestern and western States. In some cases, changing the dates of the PNS is also being considered. Principal conclusions concerning potential impacts to soils drawn from the 13 Environmental Assessments being completed are that haying and grazing have the potential to adversely impact soils if the amount of vegetation removed is excessive and prolonged, or too many grazing animals compact the soil. In addition, the managed haying and grazing EAs found no significant negative impacts to soils occur from increasing the frequency of these activities from once every five or 10 years to once every three. Rather, potentially significant impacts to soils could occur in settings with cool season grasses if haying or grazing occurs too early in midsummer; cutting dormant cool season grasses at this time could diminish the health and vigor of these plants. For warm season grasses, since these plants shift from producing leaves to flowers and seeds generally

in midsummer, extensive grazing or greater cutting by haying after this shift could cause substantial cover loss that would not recover prior to frost.

Provided adequate rest between haying and grazing episodes is attained, NRCS Conservation Practice Standards that address potential negative impacts (e.g., Forage Harvest Management 511 or Prescribed Grazing 528) are implemented, and haying or grazing is adjusted in response to resource conditions on the land just prior to undertaking these activities, then the long-term viability of the conservation cover is ensured, and soil quality is protected. More importantly, haying and grazing, if adequately controlled, mimic the historic disturbance regimes that maintain early succession grasslands, resulting in healthier CRP grass stands that will continue to protect soils.

As discussed in Chapter 2, the amount of acreage actually hayed or grazed on CRP since authorization by the 2002 Farm Bill is fairly low. Under the No Action Alternative it would be unlikely that there would be more than minor changes to historical rates of hay production and grazing on CRP acres based on the existing constraints. As discussed in Section 4.11.7.2, current production levels are fairly small when compared to total production levels within the combined counties containing those CRP acres, and total production at the State level. It can be assumed that the potential negative effects to soils would remain minor. As currently authorized prescribed grazing is limited to controlling kudzu only, continuation of current procedures is potentially less beneficial for soils than either of the action alternatives, as this tool would not be available to CRP participants. No significant negative impacts to soils would occur from continuation of existing provisions for haying and grazing.

4.9.7.3 Alternative 1

Under Alternative 1, only those CPs currently authorized for managed haying and grazing, incidental grazing (gleaning), and harvest (biomass) would be authorized for harvest or routine grazing (including gleaning). Any change by States to the established PNS, period (timing) of harvest and routine grazing, length of these activities, and frequency of routine grazing and harvest would require individual analysis under NEPA by those State Technical Committees desiring such changes. Additionally, prescribed grazing would be allowed for control of invasive species other than kudzu with no reduction of the annual rental rate, so long as the activity was part of the prescribed control plan included in the Conservation Plan. If implemented, prescribed grazing for control of invasive plant species would not be authorized for CP23, CP23A, non-grass related CP25, CP27, CP31, or CP39-41.

The indirect and direct impacts of Alternative 1 to soil would be similar to the No Action Alternative and Alternative 2, except the action alternatives would allow prescribed grazing for control of invasive plants other than kudzu, potentially more beneficial to soil. Negative impacts may be minimized by employing the same BMPs and following NRCS practice standards as described for the No Action Alternative. Harvesting (haying) and routine grazing benefits the health and vigor of the vegetative cover, limiting the potential for increasing soil erosion through vegetative loss. Expanding the use of prescribed grazing under this alternative for control of additional invasive plant species other than kudzu protects soils by ensuring the conservation cover is healthy and viable in the long-term. Following NRCS Practice Standards and implementing BMPs would reduce potential negative impacts to soils through maintaining

adequate ground cover or litter. Requiring additional State-level NEPA analysis of changes to the PNS, timing, and frequency of harvesting and routine grazing ensures potential negative environmental impacts are determined and addressed on a local scale. A site-specific environmental evaluation would be conducted for particular lands proposed for enrollment in CRP and the potential impacts from haying and grazing would be assessed at that time. No significant negative impacts to soil resources would occur under this alternative if the Conservation Plan is followed and adapted to resource conditions just prior to haying or grazing, the CPs authorized for harvest or routine grazing do not change, and State-level NEPA would be completed for any proposed changes to the PNS, timing, and frequency of these activities prior to implementation.

4.9.7.4 Alternative 2

Alternative 2 provisions are the same as Alternative 1, but differ in that changes to CPs authorized for managed harvesting or routine and prescribed grazing would be permitted under Alternative 2; however, changing the CPs authorized for managed harvest or routine grazing would require additional NEPA analysis by those State Technical Committees desiring such changes.

No significant negative impacts to soils would occur from managed harvesting or routine grazing if these activities are completed in accordance with existing standards, provisions, and guidelines, and the parameters for conducting these activities are stipulated in the Conservation Plan that is adjusted to resource conditions on the land prior to initiating these activities. Requiring additional State-level NEPA compliance prior to approving changes in which CPs are authorized for managed harvesting or routine grazing, in addition to any changes in the current PNS, timing, length or frequency of managed harvesting or grazing established for individual States, would ensure potential negative impacts to soils would be addressed on a local scale. A site specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure, which would identify and address any potential negative impacts to soils posed by managed harvesting or routine grazing. No significant negative impacts to soils would occur from implementation of Alternative 2. Alternative 2 impacts would be very similar to Alternative 1, but slightly more beneficial than the No Action Alternative, which only allows prescribed grazing for the control of kudzu.

4.9.8 Provision 7 (NASS Cash Rental Rates)

4.9.8.1 Background/Methodology

The analysis of the potential impacts on soils from implementation of the alternatives considered below is qualitative. Conservation Reserve Program payment structure provides incentives or disincentives to enroll in the program. In general, retiring land from agricultural production and establishing conserving vegetative covers benefits soils.

4.9.8.2 No Action Alternative

Under the No Action Alternative, the existing annual rental payment rules with a soil productivity adjustment as described in Chapter 1 would continue to be implemented. Furthermore, targeted signup incentives (for CREP, non-CREP CCRP, and initiatives) would remain unchanged. In

accordance with procedure that became effective October 1, 2009 (the beginning of FY 2010) maintenance incentives remain the same for contracts executed before that date, but for contracts executed after that date, maintenance incentives are reduced to zero for General Signup practices (CRP-644). Under the existing program of 32 million acres, about 85 percent of CRP acres are enrolled under General Signup and 15 percent under Continuous (Targeted) Signups. CRP rental payments are higher than cash (market) rental rates in some areas of the country; there is more of an incentive to enroll lands into CRP in those areas. As discussed in Section 4.9.8.3, enrollment in CRP in the areas with the most soil erosion (such as the Mississippi River Basin), and areas with large amounts of tilled agricultural lands, would benefit soils the most, but CRP rental rates are generally lower than market rates in several Mississippi River Basin states. Continued application of the current rental rates until FY 2012 would not likely result in any substantial geographic shifts in CRP acreage; rather, any shifts that occur would largely be related to expiring acreage. Furthermore, as discussed in Section 4.11.8.4, enrollment goals under both General and Targeted Signups would likely still be met utilizing current rates. The No Action Alternative is slightly less beneficial to soils than Alternative 1, since CRP rental rates are lower in regions of the country with high soil erosion rates. In comparison to Alternative 2 which utilizes NASS rental rates for all signup types plus existing Targeted Signup incentives, the No Action Alternative is less beneficial, but not substantially so, as application of Alternative 2 rates would be less likely to meet the current Targeted Signup goal of 4.5 million acres. No significantly negative impacts to soils would occur from continuation of the program as currently constituted.

4.9.8.3 Alternative 1

For new General Signup contracts entered into after December 1, 2009, updated NASS market dryland and irrigated rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for targeted signups (for CREP, non-CREP CCRP, and initiatives) would be increased to ensure program acreage targets would be achieved. Maintenance incentives are reduced to zero for General Signup practices in accordance with procedure that became effective October 1, 2009 (CRP-644). As determined by the socioeconomic analysis, both General and Targeted Signup goals similar to current levels would likely be met under Alternative 1. Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur, but overall participation in the program would not decrease substantially. Since NASS cash rental rates in the Pacific Northwest and the Mississippi Delta areas of the country would be higher than existing CRP rental rates, there would be more of an incentive to enroll lands into CRP in those areas. As described in Chapter 3, the areas of the country with the most soil erosion are the Lower Mississippi River basin, Chesapeake Bay watershed, parts of Iowa, Illinois and Missouri, the Atlantic Coastal Plain, and northwestern Texas. Incentives for enrolling in those areas stand to benefit soils more, assuming more soil erosion would be reduced; however, the difference from that achieved by the No Action Alternative would not be substantial on the national scale. The impacts of this alternative on soils would be similar to Alternative 2; although current CRP rates would apply to Targeted Signups, additional incentives could be offered to ensure targets are met. No significant negative impacts to soils would occur under this alternative.

4.9.8.4 *Alternative 2*

Alternative 2 would use updated NASS market dryland and irrigated rental rates with soil productivity adjustments for all contracts executed after December 1, 2009 while incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) would remain the same as the current program. Maintenance incentives are reduced to zero for General Signup practices in accordance with a procedure that became effective October 1, 2009 (CRP-644). Since no additional incentives would be offered to assure program acreage goals would still be met, this alternative in comparison to the others considered has more potential negative impacts for soils. Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur, such as in the Mississippi River Basin, benefiting SOC. As detailed in Section 4.11.8.4 Socioeconomic Resources, overall participation in the General or Targeted Signups would not decrease substantially, assuming a 4.5 million acre Targeted Signup goal, which is the existing condition. No significant negative impacts to soils would occur from implementation of Alternative 2.

4.9.9 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives)

4.9.9.1 *Background/Methodology*

The potential impacts to soils of the alternatives proposed to address this provision are qualitatively analyzed. Providing incentives to enroll agricultural lands in CRP benefits soils by establishing protective vegetative conservation covers.

4.9.9.2 *No Action Alternative*

Section 1244(a) Beginning Farmers and Ranchers currently provides for incentives to be offered to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs. Continuation of the ability to offer incentives stands to benefit soils since more participation in the program by the affected populations would potentially reduce soil erosion by taking marginal lands out of agricultural production and establishing long-term resource conserving covers; however, since both the action alternatives also expand to offer incentives to socially disadvantaged farmers and ranchers as well, both of these alternatives would potentially benefit soils more than the No Action Alternative. Additionally, as discussed in Chapter 3.12 Environmental Justice, since the pool of farmers and ranchers that meet the definition of socially disadvantaged is relatively small, no significant negative impacts to soils would occur from implementation of the program as currently configured.

4.9.9.3 *Alternative 1*

Alternative 1 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for cost share rates at least 25 percent above otherwise applicable rates (up to 90 percent), and advance payments of up to 30 percent of the amount determined for the purchase of materials and services. The USDA budget would require PAYGO offset which could potentially reduce services for other existing or potential participants in CRP. Alternative 1 provides the most incentive for the affected populations to participate in the program. This alternative would therefore potentially be more beneficial for soils since it would provide the most incentive to participate; however, given the relatively small population

that would qualify for these incentives, the impact of this alternative on soils would not significantly differ from the No Action Alternative or Alternative 2. No significant negative impacts to soil would occur from implementation of Alternative 1.

4.9.9.4 Alternative 2

Alternative 2 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for SIPs, most likely for CPs that currently are eligible for SIPs. Under this alternative the USDA budget would require a PAYGO offset, which could potentially reduce services for other existing or potential participants in CRP. This alternative would not provide as much incentive to enroll as Alternative 1; however, as discussed above, the size of the affected population and potential associated acreage would be relatively small; thus, no significantly negative impact to soils would occur from implementation of Alternative 2.

4.9.10 Provision 9 (Pollinator Conservation)

4.9.10.1 Background/Methodology

Management of habitat to benefit pollinators in certain vegetative stands includes activities that can impact soils if not carefully implemented. For example, in grasslands grazing, mowing, and prescribed burns maintain these plantings by preventing establishment of more woody species, and provide beneficial changes to vegetative stands such as increasing plant diversity and structure (Xerces 2009). The timing, technique, and scale of these activities are important in ensuring negative impacts to pollinators and vegetation that protects soil do not occur. Any activity that would threaten the long-term viability of the vegetative cover could negatively impact soils by promoting wind and water erosion.

Analysis of the potential impacts to soils of implementing the alternatives proposed to implement this provision is qualitative.

4.9.10.2 No Action Alternative

Currently only general methods to reduce impacts to pollinators are offered in NRCS practice standards and technical guides (e.g., spot treatment of herbicides and pesticides, not harvesting at peak flowering). In addition, SAFE projects that target benefiting pollinators may also be implemented. Many methods to benefit pollinators have little potential to impact soils, such as spot application of herbicides and pesticides, diverse plantings, and successive flowering over the entire season. Some pollinator species benefit from a particular percentage of bare soil (such as some types of bees), but not to an extent that would potentially increase soil erosion. The majority of native bees nest in the ground (Xerces 2009); however, management activities to maintain the health and vigor of certain types of vegetative stands that ultimately benefit pollinators have the potential to negatively impact soils if not carefully applied. Adherence to NRCS practice standards for this type of management, and tailoring the Conservation Plan to the individual lands enrolled, should adequately protect soils. No significant negative impacts to soils would occur from current procedures concerning pollinators.

4.9.10.3 Alternative 1

Under Alternative 1 a new Pollinator Habitat Conservation Practice would be created with a goal of up to five percent of enrolled acres into new pollinator friendly habitat. In addition, existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators by including plant species beneficial for pollinators at specified composition rates, and other such practices. Although modifying existing practices to benefit pollinators has no potential to negatively impact soils, creation of a CP that would apportion 1.6 million acres (based upon a maximum of 32 million acres in the program) could potentially reduce enrollments under CPs that directly benefit soil quality at a substantive rate (whole field General CRP, or practices such as contour grass strips). As such, implementation of Alternative 1 could negatively impact soil quality and would be potentially less beneficial either than the No Action Alternative or Alternative 2. This impact would not likely be severe since the overall proportion of all CRP acres devoted to pollinators would be small. No significant negative impacts to soils would occur under Alternative 1.

4.9.10.4 Alternative 2

Under this alternative only the existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators. As such, the impacts of this alternative to soils would be similar to those of the No Action Alternative. Alternative 2 would be potentially more beneficial than Alternative 1, which would enroll up to 1.6 million acres in a new CP that otherwise might be enrolled in practices that substantially address soil erosion; however, as discussed above, the degree of this impact to soils would not be significantly different than either the No Action Alternative or Alternative 1. No significant negative impacts to soils would occur from implementation of Alternative 2.

4.10 AIR QUALITY (CARBON SEQUESTRATION)

4.10.1 Significance Criteria

Impacts to air quality would be considered significant if implementation of an action reduced the rate of carbon sequestration to below pre-CRP practice levels or resulted in more CO₂ release to the atmosphere than which is sequestered over the long term.

4.10.2 Provision 1 (National Conservation Initiatives)

4.10.2.1 Background/Methodology

Analysis of the potential impact to carbon sequestration posed by the alternatives proposed to implement this provision is both quantitative and qualitative. Because there is a single atmosphere, where carbon is sequestered does not make a difference to air quality, as long as the excess carbon dioxide is removed; however, as described in Section 3.10, soil has the ability to store substantial amounts of carbon that contributes to measurable improvements in the amount of atmospheric carbon. Typical agricultural crop rotations for representative counties by MLRA in Table 4.10-1 have an average of 1.54 tons ac/yr of SOC sequestered while 16.19 tons ac/yr of SOC is sequestered when enrolled in CRP. Cropland converted to forestland

gained SOC at a rate about seven times greater than cropland converted to grassland. Figure 4.10-1 presents the MLRAs and their descriptions.

Table 4.10-1. Soil Organic Carbon by MLRA Representative Counties

MLRA	State	County	Crop	Tons of C/Ac. With Rotation	Tons of C/Ac in CRP
A	Washington	Jefferson	2yr/winter-wheat/3yrClover	2.27	19.7
B	Washington	Whitman	2yr winter-wheat/fallow	6.57	17.41
C	California	San Joaquin	Vegetables	0.16	17.41
D	Nevada	Humbolt	Spring Grain-sugar-beets	0.24	18.86
E	Montana	Cascade	Spring Wheat/fallow	-0.34	22.96
F	North Dakota	Adams	Spring wheat/fallow	0.18	17.86
G	Montana	Carter	Fallow/Winter wheat	0.26	12.95
H	Kansas	Wallace	Continuous winter wheat	1.74	12.95
I	Texas	Pecos	Cotton/fallow	-0.13	11.33
J	Texas	Washington	Continuous cotton	0.95	4.80
K	Wisconsin	Price	Corn/soybean	1.74	18.45
L	Michigan	Clare	Corn/soybean	1.88	18.67
M	Iowa	Boone	Corn/soybean	2.06	18.01
N	Arkansas	Stone	Corn/winter-wheat/soybean	1.83	16.15
O	Arkansas	Phillips	Continuous corn	8.19	16.15
P	Georgia	Clarke	Corn/winter-wheat/soybean	2.15	18.40
R	Maine	Aroostook	Continuous Vegetables	-1.03	19.48
S	New York	Ulster	Continuous Vegetables	1.73	18.90
T	South Carolina	Berkley	Continuous cotton	1.73	18.90
U	Florida	Okeechobee	Corn silage/winter wheat	0.07	20.61
			Average ¹	32.25/21=1.54	339.95/21=16.19

¹ All calculations are for non-hydric soils, under non-irrigated conditions, on silt loam soils in a 40 acre field. Soil organic carbon is estimated for typical rotations and for CRP in table 4.10-1 using the Voluntary Reporting of Greenhouse Gases-Carbon Management Evaluation Tool (COMET-VR) tool.

4.10.2.2 No Action Alternative

National Conservation Priority Areas and payment incentives designed to encourage enrollment in these areas would continue as currently configured under the No Action Alternative. In addition, CREPs and initiatives implemented since the 2002 Farm Bill would also continue unchanged under this alternative. It has been estimated by FSA that CRP sequestered more carbon on private lands than any other Federally administered program, totaling 48 million tons in 2008 (FSA 2009c). Continuation of the current program would maintain benefits in carbon sequestration; however, these benefits would likely be less than those achievable under Alternative 1, which includes an initiative addressing highly erosive soils. The benefits of this alternative would also not be very different from those attained by Alternative 2, which continues current procedures, but includes a reduction in wetland initiatives. No significant negative impacts to carbon sequestration would occur under the No Action Alternative.



Figure 4.10-1. Major Land Resource Areas (USDA-NRCS)

4.10.2.3 *Alternative 1*

This alternative would address National and State CPAs, State, and to a certain extent regional conservation initiatives as currently provided for, but in addition, would offer three new national conservation initiatives: the Water Resource Protection Initiative, Highly Erodible Land Initiative, and Regional Restoration of Critical Wildlife Habitat Initiative. Of these new national conservation initiatives proposed for this alternative, only the Highly Erodible Land Initiative would likely have a substantial impact on soil carbon sequestration. This option would enroll up to 250,000 acres having an EI greater than 50. These soils are severely erosive that they have very low or negative rates of carbon sequestration. Using the methodology as described above, this initiative would sequester over four million tons ac/yr of soil carbon, which is relatively small, thus the benefits to SOC would not substantially differ from either the No Action Alternative or Alternative 2. No significant negative impacts to soil carbon sequestration would occur from implementation of Alternative 1.

4.10.2.4 *Alternative 2*

Under Alternative 2, current procedures for addressing National, State, and regional conservation needs would continue, except the wetlands initiative would be reduced. Establishing wetlands can increase carbon sequestration. In one instance, above ground C storage was measured to be 37.5 Mg ha⁻¹ (16.7 t ac⁻¹) in depressional positions at their native

site, which was 3.5 times the C content in the standing crop at their paired cultivated site prior to harvest (Pennock 2005). The 750,000 acre wetlands initiative could provide for over 12.5 million tons of carbon sequestration. While wetlands are excellent carbon sinks, land that is being restored to a wetland condition is not nearly as carbon starved as lands that are typically enrolled in the CRP program as non-wetlands. Because of this, implementation of Alternative 2 would be less beneficial for carbon sequestration than the No Action Alternative and Alternative 1; however, this reduction in benefit would not likely be significantly negative due to the limited number of acres devoted to the wetland initiatives.

4.10.3 Provision 2 (Maximum Enrollment)

4.10.3.1 Background/Methodology

Analysis of this provision's potential impacts on carbon sequestration under the alternatives considered below is both qualitative as well as quantitative on a broad scale. Enrollment of acres in practices with substantial increases in carbon sequestration is beneficial, whereas any reduction in acres enrolled in the program could have negative impacts on carbon sequestration as lands would potentially remain in agricultural production. Carbon sequestration increases from an average of 1.54 tons ac/yr to 16.19 tons ac/yr on acres enrolled in CRP General Sign-up or Continuous Sign-up.

4.10.3.2 No Action Alternative

This alternative apportions 27.5 million acres to CRP General Signup and Targeted Signups (Continuous) acreage to 4.5 million of the total 32 million acres authorized in FY 2010. Under the No Action Alternative, the balance between the General and Continuous sign-ups changes slightly from FY 2009 levels toward Continuous Sign-up priorities, most notably increasing acres for Farmable Wetlands, SAFE, and Initiatives. Regular Continuous practices are scheduled at two million acres. A study completed by FAPRI estimating the soil carbon benefits of CRP found that without CRP, SOC in agriculturally productive land falls six percent over a 10 year period, but for the same period in CRP, SOC increases seven percent. This effect is estimated at an annual average of 23 million tons per year for all CRP field-practice land with the greatest gains in the Mississippi Delta and Southeastern States (FAPRI 2007).

Targeted Sign-ups for CREP, Farmable Wetlands, SAFE and Initiatives, while likely to have a positive impact on water quality issues and wildlife, are less likely to have as much benefit for soil erosion and carbon sequestration if they do not include CPs designed to directly address soil erosion.

Continuation of the No Action Alternative apportionment of the maximum 32 million acres authorized by the 2008 Farm Bill is potentially more beneficial for carbon sequestration than Alternative 1 that has fewer General Signup acres, or Alternative 2, which reduces the total number of acres authorized for the program. No significant negative impact to SOC is expected from the No Action Alternative.

4.10.3.3 Alternative 1

This alternative maintains the maximum acreage limit at 32 million acres, but apportions only 24 million acres to General Sign-up and eight million acres to Continuous Sign-up. This alternative would reduce General Signup acres which have the most potential to increase SOC in comparison to agricultural production; therefore, Alternative 1 could be less beneficial for carbon sequestration than the No Action Alternative; however, the difference would not be significantly negative since the total number of acres in the program would be maintained at 32 million acres.

Compared to Alternative 2, Alternative 1 would maintain four million more acres in General Signup acres and nearly twice as many acres in Targeted Signups, resulting in more carbon being sequestered.

4.10.3.4 Alternative 2

This alternative calls for an across the board reduction in CRP acres from present levels to no more than 24 million acres in the program, with 20 million acres apportioned to General Signup and four million apportioned to Targeted Signups. This would be eight million acres less than either the No Action Alternative or Alternative 1. The apportionment of the acres among General Signup and Targeted Signups is similar to that of the No Action Alternative. Conservation Reserve Program acres retain an average of 16.19 tons ac/yr of SOC compared to 1.54 tons ac/yr of SOC under typical crop rotations for a difference of 14.65 tons ac/yr of SOC. With a total reduction of eight million acres to be enrolled with this alternative, the potential to store 58 million tons ac/yr of SOC would be lost. Implementation of Alternative 2 could have significantly negative impacts on soil carbon sequestration rates at the local or State level, if there is a large amount of acreage leaving the program due to contract expirations scheduled to occur from FY 2010 to FY 2012.

4.10.4 Provision 3 (Alfalfa Crop History)

4.10.4.1 Background/Methodology

The impacts on carbon sequestration of the alternatives considered to implement this provision are assessed both quantitatively and qualitatively based on the relative potential of allowing more or less acres to qualify for enrollment in CRP. While this provision provides an incentive to enroll acres in CRP, because alfalfa is a crop that has the capability of retaining relatively high levels of SOC, enrolling these acres into the CRP program will be less beneficial than enrolling land that is cropped more intensively.

The COMET-VR was used to estimate SOC when changing from a rotation of four years of grass/legume hay and two years of corn to grass/legume CRP. The results are only an increase of 0.63 tons of SOC on a 40 acre field, an unsubstantial amount.

4.10.4.2 No Action Alternative

Under the No Action Alternative alfalfa in any rotation with multi-year grasses, legumes, summer fallow, and eligible agricultural commodity from 1996 to 2001 currently meet crop history requirements. Continuation of the program as established would not offer operators or landowners the opportunity to include lands planted in alfalfa alone in rotation with another

agricultural commodity. The No Action Alternative should not impact carbon sequestration; benefits would continue to accrue as they currently do for CRP.

No information is available to assess how many acres in the CRP currently have qualified for enrollment under this alternative, but as discussed in Chapter 2, it is expected to be fairly small. Continued implementation of this existing provision enables additional types of land to be enrolled in CRP. Enrollment of these types of acres into CRP does benefit SOC, but not as much as enrolling lands that meet the crop history requirements of being cropped four of the previous six years: higher levels of SOC sequestration are achieved by retiring agricultural lands that are tilled more often. The No Action Alternative may be slightly more beneficial for increasing carbon sequestration than either Alternative 1 or 2. Under the action alternatives, alfalfa alone in rotation with an eligible commodity may qualify for the program, which could conceivably result in more acres being able to qualify for CRP, but this may be offset by the new provision of having to meet a particular rotation interval rather than any rotation as permitted by current procedures. No significant negative impact to carbon sequestration would occur from continuation of the existing provisions, and no difference in carbon sequestration among the alternatives would likely occur.

4.10.4.3 Alternative 1

Alternative 1 proposes a rotation interval of eight years comprised of six years of alfalfa and two years of other eligible commodity; the rotation must have occurred between 2002 and 2007, and may be comprised of alfalfa alone instead of with multiyear grasses, legumes, or summer fallow. More acres would qualify under Alternative 1 as opposed to Alternative 2, but potentially less than the No Action Alternative. As such, the provision would have negligible impacts on carbon sequestration due to the limited number of acres available to enroll under the authorized 32 million program acres during FY 2010 to FY 2012. No significant negative impacts to carbon sequestration would occur from implementation of Alternative 1, and no difference among the alternatives impacts to carbon sequestration would likely occur.

4.10.4.4 Alternative 2

Alternative 2 proposes a rotation interval of twelve years, with 10 years of alfalfa alone and two years of other eligible commodity; the rotation must have occurred between 2002 and 2007. Fewer acres would qualify under this alternative that is more difficult to meet in comparison to the No Action Alternative and Alternative 1; however, the impact to carbon sequestration would not be significantly negative due to the small number of acres that could be enrolled under the 32 million acre program cap from FY 2010 to FY 2012. No difference in impacts to carbon sequestration among the alternatives to implement this provision would likely occur.

4.10.5 Provision 4 (County Acreage Limitation Exception)

4.10.5.1 Background/Methodology

The analysis of the potential impacts of the alternatives on carbon sequestration from implementation of the alternatives proposed is qualitative. In general, actions that result in more lands enrolled in CRP potentially benefit carbon sequestration as lands are taken out of agricultural production and resource conserving covers are established.

4.10.5.2 No Action Alternative

Currently, no more than 25 percent of a county's cropland may be enrolled in CRP and WRP, except when it is determined there would not be an adverse effect to the local economy and if operators in the county are having difficulties complying with highly erodible lands conservation requirements for working cropland, and acreage enrolled under shelterbelt and windbreak practices. There is not currently an upward limit on acreage in excess; however, the authority to enroll no more than 32 million acres in the program still applies, and any limitations on the allotment of acres for certain CPs or initiatives per State would not be waived. Allowing more lands to be enrolled in the program potentially takes land out of agricultural production and increases SOC sequestration. Implementation of the No Action Alternative benefits SOC similar to levels under Alternative 1, but would realize more benefits than Alternative 2, which except for additional acreage enrolled under CREP or Continuous Signup, caps additional CRP and WRP combined acreage at no more than 50 percent of a county's cropland. No significant negative impact to SOC sequestration would occur from continuation of the existing provisions.

4.10.5.3 Alternative 1

Under Alternative 1, a county may exercise its yes/no authority to allow additional acreage enrolled under CREP or Continuous CRP beyond the cap, which stipulates no more than 25 percent of a county's cropland may be enrolled in CRP and WRP combined, with no additional per county acreage limitation. This alternative benefits SOC sequestration by allowing the most land to be enrolled in CRP among the action alternatives, but is more restrictive than the No Action Alternative, which does not limit additional acres only to CREP or Continuous CRP; however, this difference would not be substantial, since the total number of acres authorized for the program is still 32 million acres, and the rate at which existing contracts are expected to expire until 2012 would allow only a relatively small amount of additional acreage to be enrolled in the program. Further, the number of counties excepting acreage and the amount of excepted acreage would not likely increase substantially beyond past levels, which have been relatively low. No significantly negative impact to SOC would occur under Alternative 1.

4.10.5.4 Alternative 2

Alternative 2 would enable a county to exercise its yes/no authority to exceed the 25 percent cap on county cropland being enrolled in both CRP and WRP at any one time under CREP and Continuous CRP signups, but up to a new limit of no more than 50 percent. Again, the number of excepted would not likely substantially change from past levels. This alternative would be more restrictive than either the No Action Alternative or Alternative 1, and would therefore be potentially less beneficial for SOC sequestration if acreage targets are not met, but because of the 32 million acre program limit and the rate of attrition from expected contract expirations, the impact to SOC sequestration would not be significantly negative.

4.10.6 Provision 5 (Conservation Plan Management)

4.10.6.1 Background/Methodology

Analysis of the potential impacts on SOC sequestration of the alternatives considered below is qualitative.

4.10.6.2 No Action Alternative

Currently, management as stipulated in the Conservation Plan is expected to occur and MCM is required for all CPs on contracts executed after FY 2004, and is voluntary for contracts accepted before that year. Each State has developed specific management requirements that ensure plant diversity and wildlife benefits while maintaining soil and water quality. State Committees must submit requests to exempt an MCM requirement for approval by the Conservation and Environmental Programs Division. Tillage and prescribed burns can have a short term negative impact on SOC sequestration; however these management tools generally result in improving the plants' ability to increase SOC in the long term; however, requiring MCM on an individual CP basis as a national standard imposes management that may not be applicable to local conditions. Overall, if controlled appropriately, negative impacts to SOC sequestration are short term and since the goal of MCM is to preserve the health and viability of the conservation cover in the long-term, continuation of existing provisions is not significantly negative for SOC sequestration. Since MCM is required for all CPs, the No Action Alternative has benefits similar to Alternative 2; but is more potentially beneficial than Alternative 1, where MCM would only be undertaken if included in the Conservation Plan.

4.10.6.3 Alternative 1

Alternative 1 would require Conservation Plan management throughout the contract term and MCM tasks to be completed only if included in that plan. Mid-contract management would not be required on an individual CP basis. This alternative would be easier to administer than either the No Action Alternative or Alternative 2, and would provide the greatest flexibility for only undertaking management tasks as may be applicable to local conditions. Negative impacts to SOC could occur if appropriate MCM is not included in the plan, an unlikely occurrence. As such, this alternative would potentially be less beneficial for SOC sequestration than either the No Action Alternative or Alternative 2, where individual CPs require specific MCM be conducted. No significantly negative impacts to SOC sequestration would occur under Alternative 1.

4.10.6.4 Alternative 2

Alternative 2 would require MCM on certain CPs as determined by individual State Technical Committees and MCM tasks if specified in the Conservation Plan. This alternative would provide both flexibility in requiring MCM in the Conservation Plan designed for a particular parcel of land, but also would provide States the ability to specify MCM by CP as appropriate to their region. The benefits of Alternative 2 would therefore be similar to the No Action Alternative and Alternative 1. Implementation of Alternative 2 would not be significantly negative for carbon sequestration.

4.10.7 Provision 6 (Harvesting CRP)

4.10.7.1 Background/Methodology

Analysis of the potential impacts on carbon sequestration of the alternatives considered below is qualitative

4.10.7.2 No Action Alternative

As described in Chapters 1 and 2, currently there are several forms of harvest, haying, and grazing authorized on CRP. Payment reduction assessments vary by type and are not assessed under certain conditions for Limited Grazing. Prescribed grazing for the control of invasive species is currently only allowed to control kudzu. Generally these activities are not authorized during the PNS of ground nesting birds, and except for emergency haying or grazing, can only occur at most once every three years, varying by State. Haying or grazing may only occur if included in the Conservation Plan. In addition, a site-specific environmental evaluation conducted on those particular lands proposed for enrollment in CRP would be conducted, and the potential impacts of haying and/or grazing on those lands would be assessed at that time.

The potential impacts to carbon sequestration of currently authorized forms of haying and grazing on CRP are similar to those discussed in Section 4.9.7.2 Soil Resources. Any activity that threatens the long-term viability of the conservation cover and increases soil erosion would adversely impact carbon sequestration. The No Action Alternative would not indirectly increase soil erosion and loss of SOC since it maintains vegetative cover and Conservation Practice Standard 511 Forage Harvest Management requires a minimum stubble height be retained to allow vegetation to recover by frost. Providing adequate rest between haying and grazing episodes is attained, NRCS Conservation Practice Standards that address potential negative impacts (e.g., Forage Harvest Management 511 or Prescribed Grazing 528) are implemented, and haying or grazing is adjusted in response to resource conditions on the land just prior to undertaking these activities, then the long-term viability of the conservation cover is ensured, and carbon sequestration enhanced. More importantly, haying and grazing, if adequately controlled, mimic the historic disturbance regimes that maintain early succession grasslands, resulting in healthier CRP grass stands that will continue to sequester carbon.

As discussed in Chapter 2, the amount of acreage actually hayed or grazed on CRP since authorization by the 2002 Farm Bill is fairly low. Under the No Action Alternative it would be unlikely that there would be more than minor changes to historical rates of hay production and grazing on CRP acres based on the existing constraints. It can be assumed that the potential negative effects to carbon sequestration would remain minor during FY 2010 to FY 2012. As currently prescribed grazing is limited to controlling kudzu only, continuation of current procedures is potentially less beneficial for carbon sequestration than either of the action alternatives, as this tool would not be available to CRP participants. No significant negative impacts to carbon sequestration would occur from continuation of existing provisions for haying and grazing.

4.10.7.3 Alternative 1

Under Alternative 1, only those CPs currently authorized for managed haying and grazing, incidental grazing (gleaning), and harvest (biomass) would be authorized for routine grazing (including gleaning) and harvest. Any change to the established PNS, period (timing) of routine grazing and harvest, length of harvest, and frequency of routine grazing and harvest by States would require individual analysis under NEPA by those State Technical Committees desiring changes. Prescribed Grazing for control of invasive plant species other than kudzu would be authorized, but not for CP23, CP23A, non-grass related CP25, CP27, CP31, or CP39-41, and if

implemented, would occur only in accordance with a control plan included in the Conservation Plan. A payment reduction commensurate with the economic value of the activity would be estimated on percentage basis related to the percent of year the authorized activity would occur. No payment reduction would be applied to prescribed grazing for the control of invasive species.

The indirect and direct impacts of Alternative 1 to carbon sequestration would be similar to the No Action Alternative and Alternative 2, except the action alternatives would allow prescribed grazing for control of invasive plants other than kudzu, potentially more beneficial to sequestering carbon by maintaining healthy conservation covers. Negative impacts may be minimized by employing the same BMPs and following NRCS practice standards as described for soil resources. Harvesting (haying) and routine grazing benefits the health and vigor of the vegetative cover, limiting the potential for increasing soil erosion through vegetative loss, and therefore, minimizing the potential for loss of SOC. Following NRCS practice standards and implementing BMPs would reduce potential negative impacts to carbon sequestration through maintaining adequate ground cover or litter and imposing harvest criteria that allow vegetation to recover prior to frost. Requiring additional State-level NEPA analysis of changes to the PNS, timing, and frequency of harvesting and routine grazing ensures potential negative environmental impacts would be determined and addressed on a local scale. A site-specific environmental evaluation would be conducted for particular lands proposed for enrollment in CRP and the potential impacts from managed harvest and routine grazing would be assessed at that time. No significant negative impacts to carbon sequestration would occur under this alternative if the Conservation Plan is followed and adapted to resource conditions just prior to harvesting or grazing, the CPs authorized for managed harvest or routine grazing do not change, and State-level NEPA is completed for any proposed changes to the PNS, timing, and frequency of these activities prior to implementation.

4.10.7.4 Alternative 2

Alternative 2 provisions are the same as Alternative 1, but differ in that changes to CPs authorized for managed harvesting or routine and prescribed grazing would be permitted under Alternative 2; however, the changes to CPs would require additional NEPA analysis by those State Technical Committees desiring such changes.

No significant negative impacts to carbon sequestration would occur from managed harvesting or routine grazing if these activities would be completed in accordance with existing standards, provisions, and guidelines, and the parameters for conducting these activities are stipulated in the Conservation Plan that is adjusted to resource conditions on the land prior to conducting these activities. Requiring additional State-level NEPA compliance prior to approving changes in which CPs are authorized for harvesting or routine grazing, in addition to any changes in the current PNS, timing, or frequency of harvesting or grazing established for individual States, would ensure potential negative impacts to carbon sequestration would be addressed on a local scale. A site specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedure, which would identify and address any potential negative impacts to carbon sequestration posed by managed harvesting or routine grazing. No significant negative impacts to carbon sequestration would occur from implementation of Alternative 2. Alternative 2 impacts would be very similar to Alternative 1, but

slightly more beneficial than the No Action Alternative, which only allows prescribed grazing for the control of kudzu.

4.10.8 Provision 7 (NASS Cash Rental Rates)

4.10.8.1 Background/Methodology

Analysis of the potential impacts on carbon sequestration of the alternatives considered below is qualitative. CRP payment structure provides incentives or disincentives to enroll in the program. In general, retiring land from agricultural production and establishing conserving vegetative covers benefits carbon sequestration.

4.10.8.2 No Action Alternative

Under the No Action Alternative, the existing annual rental payment procedures with a soil productivity adjustment as described in Chapter 1 would continue to be implemented. Furthermore, Targeted Signup incentives (for CREP, non-CREP CCRP, and initiatives) would remain unchanged. In accordance with a procedure that became effective October 1, 2009 maintenance incentives remain the same for contracts executed before that date, but for contracts executed after that date, maintenance incentives are reduced to zero for General Signup practices (CRP-644). Under the existing program of 32 million acres, about 85 percent of CRP acres are enrolled under General Signup and 15 percent under Continuous (Targeted) Signups. Because CRP rental payments are higher than cash (market) rental rates in some areas of the country, there is more of an incentive to enroll lands into CRP in those areas. As discussed in Section 4.9.8.3, enrollment in CRP in the areas with the most soil erosion and therefore higher losses of SOC (such as the Mississippi River Basin), and areas with large amounts of tilled agricultural lands, would benefit carbon sequestration the most, but CRP rental rates are generally lower than market rates in several Mississippi River Basin states. Continued application of the current rental payment structure until FY 2012 would not likely result in any substantial geographic shifts in CRP acreage; rather, any shifts that occur would largely be related to expiring acreage. Furthermore, as discussed in Section 4.11.8.4, enrollment goals under both General and Targeted Signups would likely still be met utilizing current rates. The No Action Alternative is slightly less beneficial to carbon sequestration than Alternative 1, since CRP rental rates are lower in regions of the country with high soil erosion rates. In comparison to Alternative 2 which would utilize NASS rental rates for all signup types plus existing Targeted Signup incentives, the No Action Alternative is less beneficial, but not substantially; application of Alternative 2 rates would be less likely to meet the current Targeted Signup goal of 4.5 million acres. No significantly negative impacts to carbon sequestration would occur from continuation of the program as currently constituted.

4.10.8.3 Alternative 1

For new General Signup contracts after December 1, 2009, updated NASS market dry-land and irrigated rental rates with soil productivity adjustments would be used to make annual rental payments. Incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) would be increased to ensure program acreage targets would be achieved, but current rental rate payment structure would apply to these signups. Maintenance incentives are reduced to zero for

General Signup practices in accordance with procedure that became effective October 1, 2009 (CRP-644). Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur, but overall participation in the program would not substantially decrease. Alternative 1 would be slightly more beneficial to carbon sequestration than the No Action Alternative, as NASS cash rental rates would be higher than CRP rental rates in the Mississippi River Basin that has high rates of soil erosion. As determined by the socioeconomic analysis, both General and Targeted Signup enrollment goals similar to current levels would likely be met under Alternative 1. The impacts of this alternative on carbon sequestration would be similar to Alternative 2; although current CRP rates would apply to Targeted Signups, additional incentives could be offered to ensure targets are met. No significant negative impacts to carbon sequestration would occur under Alternative 1.

4.10.8.4 Alternative 2

Alternative 2 would use updated NASS market dryland and irrigated rental rates with soil productivity adjustments for all contracts executed after December 1, 2009 while incentives for Targeted Signups (for CREP, non-CREP CCRP, and initiatives) would remain the same as the current program. Maintenance incentives are reduced to zero for General Signup practices in accordance with a procedure that became effective October 1, 2009 (CRP-644). Since no additional incentives would be offered to assure program acreage goals would still be met, this alternative, in comparison to the others considered, has more potential negative impacts for carbon sequestration. Because some areas would realize higher CRP payments than others, regional shifts in enrolled acres may occur, such as in the Mississippi River Basin, benefiting carbon sequestration. As detailed in Section 4.11.8.4 Socioeconomic Resources, overall participation in the General or Targeted Signups would not decrease substantially, assuming a 4.5 million acre Targeted Signup goal, which is the existing condition. No significant negative impacts to SOC would occur from implementation of Alternative 2.

4.10.9 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives)

4.10.9.1 Background/Methodology

The potential impacts to SOC sequestration of the alternatives proposed to address this provision are qualitatively analyzed. Providing incentives to enroll agricultural lands in CRP benefits carbon sequestration by establishing protective vegetative conservation covers and reducing soil erosion. These incentives improve the potential of enrolling lands in CRP up to the authorized limit of 32 million acres.

4.10.9.2 No Action Alternative

Section 1244(a) Beginning Farmers and Ranchers currently provide the ability to offer incentives to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs. Continuation of the ability to offer incentives stands to benefit carbon sequestration since more participation in the program by the affected populations would potentially increase carbon sequestration by taking marginal lands out of agricultural production and establishing long-term resource conserving covers; however, since both the action alternatives also expand to offer incentives to socially disadvantaged farmers and ranchers as

well, both of these alternatives would potentially benefit carbon sequestration more than the No Action Alternative. As discussed in Chapter 3.12 Environmental Justice, since the pool of farmers and ranchers that would meet the definition of socially disadvantaged is relatively small, no significant negative impact to carbon sequestration would occur from implementation of the program as currently configured.

4.10.9.3 Alternative 1

Alternative 1 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for cost share rates at least 25 percent above otherwise applicable rates (up to 90 percent), and advance payments of up to 30 percent of the amount determined for the purchase of materials and services. The USDA budget would require PAYGO offset which could potentially reduce other program services. Alternative 1 would provide the most incentive for the affected populations to participate in the program, enhancing the potential of reaching the full enrollment of authorized acres in CRP. As such, this alternative would be more beneficial than the No Action Alternative, since it would extend benefits to socially disadvantaged farmers and ranchers. Given the relatively small population that would qualify for these incentives; however, the impact of this alternative on carbon sequestration would not be not substantially different from that of the No Action Alternative or Alternative 2. No significant negative impacts to carbon sequestration would occur from implementation of Alternative 1.

4.10.9.4 Alternative 2

Alternative 2 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for signup incentives, most likely for CPs that currently are eligible for SIPs. The USDA budget would require PAYGO offset which could potentially reduce other program services. This alternative would not provide as much incentive to enroll as Alternative 1, but would be more beneficial than the No Action Alternative, since it would extend incentives to socially disadvantaged farmers and ranchers; however, as discussed above, the size of the affected population and potential associated acreage would be relatively small; thus, no significantly negative impact to carbon sequestration would occur from implementation of Alternative 2, and the impacts would not be substantially different from those of Alternative 1.

4.10.10 Provision 9 (Pollinator Conservation)

4.10.10.1 Background/Methodology

Management of habitat to benefit pollinators in certain vegetative stands includes activities that can impact soils if not carefully implemented. For example, in grasslands grazing, mowing, and prescribed burns maintain these plantings by preventing establishment of more woody species, and provide beneficial changes to vegetative stands such as increasing plant diversity and structure (Xerces 2009). The timing, technique, and scale of these activities are important in ensuring negative impacts to pollinators and vegetation do not occur. Any activity that would threaten the long-term viability of the vegetative cover could negatively impact carbon sequestration. Analysis of the potential impacts to carbon sequestration of the alternatives proposed to implement this provision is qualitative.

4.10.10.2 No Action Alternative

Currently only general methods to reduce impacts to pollinators are offered in NRCS practice standards and technical guides (e.g., spot treatment of herbicides and pesticides, not harvesting at peak flowering). In addition, SAFE projects that target benefiting pollinators may also be implemented. Many methods to benefit pollinators have little potential to impact soils, such as spot application of herbicides and pesticides, diverse plantings, and successive flowering over the entire season. Some pollinator species benefit from a particular percentage of bare soil (such as some types of bees), but not to an extent that would potentially decrease carbon sequestration. Installation of pollinator SAFE projects and subsequent management including activities such as mowing, disking, grazing, or prescribed burns may temporarily reduce vegetative cover and increase soil erosion, negatively impacting carbon sequestration, but adherence to existing conservation practice standards and guidelines and employment of BMPs minimize the potential for adverse impacts. No significant negative impact to carbon sequestration would occur from current procedures concerning pollinators. The impacts of existing provisions on carbon sequestration would be similar to Alternative 2 that would only modify existing CPs to benefit pollinators, but would potentially be more beneficial than Alternative 1, which may reduce acreage devoted to practices that substantially address carbon sequestration by creation of a new pollinator habitat CP.

4.10.10.3 Alternative 1

Under Alternative 1, a new Pollinator Habitat Conservation Practice would be created with a goal of up to five percent of enrolled acres into new pollinator friendly habitat. In addition, existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators by including plant species beneficial for pollinators at specified composition rates, and other such practices. Although modifying existing practices to benefit pollinators has no potential to negatively impact carbon sequestration, creation of a CP that would apportion 1.6 million acres (based upon a maximum of 32 million acres in the program) could potentially reduce enrollments under CPs that directly benefit carbon sequestration at a substantive rate (such as whole field General Signup forested acres). As such, implementation of Alternative 1 could negatively impact carbon sequestration and would be less beneficial either than the No Action Alternative or Alternative 2. This impact would not likely be severe since the overall proportion of all CRP acres devoted to pollinators would be small. No significant negative impacts to carbon sequestration would occur under Alternative 1.

4.10.10.4 Alternative 2

Under this alternative only the existing conservation practices for wildlife, grass, buffer strip, windbreak, shelterbelt, and trees would be modified to benefit native and managed pollinators. This alternative would have little potential to impact carbon sequestration, but would be potentially more beneficial than Alternative 1 since more acres could be devoted to practices with substantial carbon sequestration benefits, but would have impacts similar to the No Action Alternative; however, as discussed above, the degree of this benefit to carbon sequestration would not be substantially different than either the No Action Alternative or Alternative 1. No

significant negative impact to carbon sequestration would occur from implementation of Alternative 2.

4.11 SOCIOECONOMICS

4.11.1 Significance Criteria

A significant impact to socioeconomic conditions can be defined as a change that is outside the normal or anticipated range of those conditions that would flow through the remainder of the economy and community creating substantial adverse effects in housing, employment, demographic trends, and business sectors. For small percentage changes in individual attributes, it would be unlikely that the changes would result in significant impacts at the lowest level of analysis (i.e. county). Changes to the statewide or national economy of greater than agriculture's normal contribution could be considered significant, as this could affect the general economic climate of other industries on a much greater scale.

Additional changes in demographic trends (i.e., population movements) would be considered significant if a substantial percentage of the population were to enter or leave a particular area based on the changing economic conditions associated with the alternatives analyzed, rather than unrelated projected changes or changes generated by economic activities as a whole.

4.11.2 Provision 1 (National Conservation Initiatives)

4.11.2.1 Background/Methodology

The CRP currently has national conservation initiatives and goals under the following CPs: Upland Bird Habitat, Bottomland Hardwood Trees, Non-floodplain and playa Wetland Restoration, Floodplain Wetland restoration, Longleaf Pine plantings, Prairie Pothole duck nesting habitat, and SAFE initiatives. Analysis of the potential impacts to the socioeconomic conditions posed by the alternatives to implement this provision is both qualitative and quantitative.

4.11.2.2 No Action Alternative

Under the No Action Alternative, the current National and State CPA, CREP, and existing initiatives would remain unchanged to address national, state, and regional initiatives. State and regional conservation initiatives are implemented through Continuous and CREP enrollment procedures that pay participating landowners fixed soil-adjusted rental rates adjusted for the productivity of the three most prevalent soils on the parcels, typically with a premium of 20 percent or much greater under CREP initiatives. The higher payment rates and highly targeted nature of CREPs provide greater economic benefits to participating landowners and greater environmental benefits over non-CREP acres within the same areas. Because acreage totals for all initiatives have been small, broader local-economy or market effects have been generally minimal.

Under the No Action Alternative, initiative acres would remain a small part of the overall CRP (approximately 2.9 percent of currently enrolled CRP acres as of October 2009) and would continue under current policy to follow the same generalized guidelines. As of October 2009, the

enrolled acres within the initiatives accounted for 38.3 percent of the acreage goals (2.35 million acres) for these combined initiatives.

Average rental rates per acre by initiative were located within the FY 2008 CRP Annual Summary (FSA 2009c). Based on a weighted average of the existing initiatives, an estimated average rental payment would be \$83.93 per acre. In FY 2008, these initiatives accounted for \$41.7 million, which would be 2.1 percent of the FY 2009 CRP budget (0.04 percent of the FY 2009 USDA budget) (FSA 2009c).

It would be unlikely that by selecting the No Action Alternative that there would be other than negligible socioeconomic effects, which would not result in significant negative effects to the overall socioeconomic conditions. The No Action Alternative and Alternative 2 would have similar effects, as the latter would continue existing measures but reduce wetland initiatives sign-up. This alternative would cost less than Alternative 1 with new initiatives.

4.11.2.3 Alternative 1

Selecting Alternative 1 would result in the implementation of three new National-level Initiatives with a maximum combined acreage limitation of 1.5 million acres to be enrolled during FY 2010, through FY 2012, with an apportionment of 0.5 million acres per year. Under this alternative, there would be no monetary cap; however, funding for these initiatives would require PAYGO offset that must come from another area of the USDA budget (e.g., CRP).

Using the weighted average rental rate from FY 2008 (\$83.93), the new initiatives implemented under Alternative 1 could cost an additional \$42.0 million per year from FY 2010 to FY 2012 when compared to the No Action Alternative, using this average per acre rental rate at maximum enrollment of 1.5 million acres. This would account for approximately 0.03 percent of the FY 2009 USDA budget or 2.1 percent of the FY 2009 CRP budget. If the per acre rental rate for the proposed initiatives was as high as the highest average rental rate of the existing initiatives, then per year cost would be approximately \$48.5 million (assuming \$97.04 per acre, which is the average rental rate for CP23A – Wetland Restoration [Non-Floodplain]). This would account for approximately 0.04 percent of the FY 2009 USDA budget or 2.5 percent of the FY 2009 CRP budget.

Selecting this alternative would redistribute funds from one or more portions of the USDA annual budget into the costs for these new initiatives, which may or may not reduce USDA services. Alternative 1 would cost more than Alternative 2, assuming the new initiatives would be put in place with the existing initiatives, but the reduced wetland initiative as proposed by the latter involves so few acres, the difference would not be substantial. No significant negative impacts to the socioeconomic conditions would occur from implementation of Alternative 1.

4.11.2.4 Alternative 2

Under Alternative 2, no changes to existing National CPAs, CREPs, or national conservation initiatives would occur, except the wetlands initiative would be reduced. This reduction in wetland initiative acres could affect up to 750,000 acres (250,000 acre goal of CP23A and 500,000 acre goal of CP23). As of October 2009, CP23A was at 30.7 percent of the goal acreage and CP23 was at 29.3 percent of the goal acreage.

Selecting Alternative 2 would create similar effects to the No Action Alternative; however, the wetland restoration initiative acreage cap would be reduced. Based on the existing initiatives total acres and average rental rate per acre, the combined initiatives pay approximately \$41.7 million in annual rental rates with CP23 and CP23A accounting for approximately \$14.5 million (34.8 percent of initiative spending FY 2008).

A reduction in the wetland restoration initiative acreage cap would be unlikely to create measurable socioeconomic effects since the number of acres would be relatively few and those acres could still be enrolled under the overall CRP acreage limitations under a different CP. Selecting this alternative could redistribute where CRP acreage is located based on the acreage reduction from wetland restoration; however, since only a maximum 0.75 million acres are authorized for enrollment under the wetland initiative, this would not be a substantial change compared to the No Action Alternative. The socioeconomic impacts of Alternative 2 would therefore be similar to the No Action Alternative and Alternative 1. No significant negative socioeconomic impacts would occur under Alternative 2.

4.11.3 Provision 2 (Maximum Enrollment)

4.11.3.1 Background/Methodology

Socioeconomic costs and benefits associated with CRP acreage would largely decline commensurately with the acreage and payment totals. There would be more soil erosion and fewer wildlife, water quality, air quality and recreation benefits, all of which have economic value if the expiring acres return to active agricultural crop production. There would be lower government expenditures and taxpayer burden due to fewer rent payments and cost-share payments going to fewer participating farmers. Since Continuous and CREP Signups are far more targeted and enrollment is not competitive, the socioeconomic impacts depend critically on how specific initiatives are scaled up or down in relation to target acreage and specific conservation initiatives. Socioeconomic impacts of Targeted Signups tend to be smaller because the acreage totals are smaller and tend to have less influence on agricultural markets or local economies.

Analysis of the potential impacts to the socioeconomic conditions posed by the alternatives to implement this provision is both qualitative and quantitative.

4.11.3.2 No Action Alternative

Under the No Action Alternative, the CRP acreage cap would be adjusted to the 32 million acre maximum limit by FY 2010 with that consisting of 27.5 million acres to General Signup and 4.5 million acres to Targeted Signup. As discussed in Chapter 2, scheduled contract expirations in FY 2010 will drop program acreage below the 32 million acre cap, which may now be filled by certain contract extensions offered in May 2009. As of October 2009, annual rental payments for all General Signup acres (26.7 million acres) were \$1,194 million with an average annual rental payment of \$44.64 per acre (FSA 2009a). Targeted Signup combined acres (4.4 million acres) annual rental payments were \$449 million with an average rental rate payment of \$102.77 per acre. In FY 2008, FSA expenditures included \$25.2 million in SIPs, \$43.2 million in

PIPs and \$0.9 million in wetland incentives, totaling \$69.3 million (3.5 percent of the FY 2009 CRP budget or 0.06 percent of the FY 2009 USDA budget).

Not all acreage currently in CRP and about to expire can be re-enrolled under the new provision. With fewer acres authorized to be enrolled to maintain the 32 million acre level as stipulated for the No Action Alternative, there would be more competition for enrollment from FY 2010 to FY 2012. With more competition for fewer contracts, future General Signups could see more competitive bidding from potential enrollees. Particularly for offers near the margin of acceptance, more competition should encourage landowners to offer improved cover practices with higher EBI points or offer lower rental rates. These changes would reduce government expenditures, but also reduce monetary benefits to participating farmers. The general increase in competition for enrollment could improve environmental outcomes on parcels that are enrolled or re-enrolled.

Since Continuous and CREP Signups are not competitive and Targeted Signup acres are relatively small under the No Action Alternative (about 14.1 percent of all CRP), the proportion in comparison to General Signup acreage would not have significant negative impacts on agricultural markets or local economies given the general disbursement of targeted acres and small individual acreage enrollments.

Continuation of the program under the No Action Alternative would not result in a significant change that is outside the normal or anticipated range of those conditions that would flow through the remainder of the economy and community. No significant adverse effects in housing, employment, demographic trends, and business sectors would be created by implementation of this alternative. Costs to implement the program under the No Action Alternative may be lower than Alternative 1 that includes more Targeted Signup acreage, and more than Alternative 2, which further reduces the authorized CRP acreage.

4.11.3.3 Alternative 1

Selecting Alternative 1 would set the CRP acreage limitation at 32 million acres, apportioning 24 million for General Signup and eight million acres for Targeted Signups. This alternative would substitute greater Targeted Signups for less General Signup, which would not result in significant impacts to the overall socioeconomic conditions. In comparison to the No Action Alternative, this alternative would tend to increase government expenditures since payment rates on Targeted Signups would generally be well above those in General Signups, resulting in greater income transfers to landowners enrolled. Since Targeted Signup CPs offer SIPs and PIPs, an increase in these acres would require PAYGO budget offset that may result in reduced services in other program areas or areas of the USDA budget. Compared to the No Action Alternative, Alternative 1 could enroll an additional 3.5 million acres under Targeted Signups. Seventeen CPs and the wellhead protection program offer SIPs of \$100 per acre and PIPs at 40 percent of the practice cost, once installed. An additional four CPs offer PIPs without any SIPs associated. If the additional 3.5 million acres were enrolled under one of the 17 eligible CPs, it could generate a total SIP expenditure of \$350 million between FY 2010 to FY 2012 (17.9 percent of the FY 2009 CRP budget and 0.3 percent of the FY 2009 USDA budget).

In comparison to the other alternatives, acreage enrolled under this alternative would also be distributed differently across geography and individual landowners, however not to a substantial degree. Fewer available General Signup acres would likely increase competition for enrollment, increasing average EBI scores, and tending to lower rental rates. This would occur because lower-scoring parcels would now be rejected, leaving fewer higher-scoring parcels. The additional competition for enrollment would be acute in the first few years because only a fraction of expiring acreage would be re-enrolled.

Also, landowners would likely be enticed to submit more competitive bids than they would if more acreage were accepted. Many landowners who may have been nearly certain of acceptance while requesting the maximum rental rates in their offers would now reconsider the probability of acceptance and may request lower rates. They may also offer more EBI-enhancing cover practices. There would also be added uncertainty during the enrollment process, because landowners would be uncertain about the EBI threshold necessary for acceptance, given this change from the past. Greater uncertainty would also cause more competitive bidding, with higher-scoring cover practices and lower offered rental rates. Income transfers to General Signup participants would decline in comparison to the No Action Alternative, even for many of those whose offers are accepted, since offers would trend generally lower.

Continuation of the program under Alternative 1 would not result in a significant change that is outside the normal or anticipated range of those conditions that would flow through the remainder of the economy and community. No significant adverse effects in housing, employment, demographic trends, and business sectors would be created by implementation of this alternative.

4.11.3.4 Alternative 2

Selecting Alternative 2 would set the CRP acreage limitation at 24 million acres, apportioning 20 million for General Signup and four million acres for Targeted Signups. The General Signup enrollment would be allotted at 2.5 million acres in FY 2010 and FY 2011 and an additional 3.5 million acres in FY 2012. With General Signup totals declining, and with a large portion of acreage already locked into the program, additional enrollments would be extremely limited and only highest EBI parcels are likely to be accepted. Effects to Targeted Signups would be similar to the No Action Alternative. If CRP acreage were reduced to 20 million acres for General Signup this could reduce the annual rental payments approximately \$301.2 million from the October 2009 levels (25.2 percent reduction at the average \$44.64 per acre rate). If Targeted Signups were limited to four million acres an estimated reduction in annual rental payments would be approximately \$41.1 million from the October 2009 levels (9.1 percent reduction at the average \$102.77 rate). Compared to Alternative 1 there would be much lower SIP expenditures under Alternative 2.

Alternative 2 would result in a marked reduction in program expenditures and payments to farmers in areas with large amounts of expiring acreage. A large portion of land exiting the program would return to agricultural production, and so effects on general economic activity, even in areas with large acreages of CRP contracts expiring, are expected to be minimal. Because Alternative 2 would most likely be implemented under conditions of high commodity

prices, effects on local economic activity are as likely to be modestly positive as they are to be modestly negative.

Continuation of the program under Alternative 2 would not result in a significant change that is outside the normal or anticipated range of those conditions that would flow through the remainder of the economy and community. Substantial adverse effects in housing, employment, demographic trends, and business sectors would not occur from implementation of Alternative 2. In some locations, however, there may be lost recreation opportunities and services associated with those opportunities. These losses would generally be offset by gains in agricultural-related economic opportunities. Costs to implement the program under Alternative 2 would likely decline in comparison to Alternative 1 and the No Action Alternative, and would likely decline more than commensurately with the acreage reduction.

4.11.4 Provision 3 (Alfalfa Crop History)

4.11.4.1 Background/Methodology

Alfalfa is a legume species with an average life cycle of three to 12 years depending upon variety and local environmental conditions (i.e., climate, soils, etc.). This species is also autotoxic, requiring a crop rotation into another species prior to new seedings of alfalfa. Alfalfa is a highly desirable hay, haylage, and silage product primarily in dairy states due to its high protein and highly digestible fiber content. Appendix F provides the by state total for alfalfa hay harvested from 2002 to 2007. As indicated in Section 2.6.3.1, during that period the United States harvested an annual average of 22.1 million acres of alfalfa hay with the highest concentrations being in Wisconsin, Minnesota, Iowa, Nebraska, and Idaho. Analysis of the potential impacts to the socioeconomic conditions posed by the alternatives to implement this provision is both qualitative and quantitative. Alfalfa acreage is presented at both the national and at an example state level (e.g., Wisconsin) to provide an analysis at varying scales.

4.11.4.2 No Action Alternative

Under the No Action Alternative, alfalfa acreage in any rotation with multi-year grasses, legumes, and summer fallow is considered an eligible commodity if the rotation occurred in the years from 1996 to 2001 as part of six year cropping history established by the 2002 Farm Bill.

Table 4.11-1 illustrates the cropping history for alfalfa hay during the period from 1996 to 2008 and the amount of new seedings of alfalfa and alfalfa mixes in the United States and in Wisconsin. Since 1996, acres of alfalfa harvested for hay have been generally declining with a peak in 1999 of 24.1 million acres. The net change in alfalfa acres was estimated by subtracting the previous year's harvested acres plus the new seedings from the current year's harvested acres. During the eligible cropping history years (1996 to 2001) for this alternative, approximately 17.3 million acres were rotated out of alfalfa. In 2008, U.S. operators planted approximately 324.8 million acres in crops. As a percentage of available cropland which could be enrolled in CRP, all potential acres of alfalfa account for 6.2 percent.

Table 4.11-1. United States Cropping History for Alfalfa Hay and New Seedings of Alfalfa Mixes (1996-2008, thousands of acres)

Crop Type	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
United States													
New Seedings		3,737	3,549	3,436	3,065	3,260	3,282	3,119	2,793	3,290	3,184	2,828	2,699
Harvested - Hay	24,206	23,551	23,592	24,066	23,463	23,952	22,923	23,527	21,697	22,359	21,138	21,126	20,980
Net Change		-4,392	-3,508	-2,962	-3,668	-2,771	-4,311	-2,515	-4,623	-2,628	-4,405	-2,840	-2,845
Wisconsin													
All Alfalfa (Hay + Haylage)	2,950	2,900	2,900	3,000	2,600	2,500	2,500	2,400	2,450	2,400	2,400	2,350	2,450
New Seedings		650	600	600	400	400	500	550	500	650	500	370	420
Net Change in All Alfalfa		-700	-600	-500	-800	-500	-500	-650	-450	-700	-500	-420	-320

Source: NASS 2009b (New seedings of alfalfa US 1996-2008), (Harvested Alfalfa US 1996-2008), (All Alfalfa, Wisconsin 1996-2008), (New seedings of alfalfa Wisconsin 1996-2008).

In Wisconsin, the leading producer of all alfalfa throughout most of the decade, alfalfa acres harvested averaged 2.6 million acres, with new seedings averaging just over 0.5 million acres per year during 1996-2008. Approximately 3.1 million acres were rotated out of alfalfa production during the eligible crop history years in Wisconsin (combined total from 1996 to 2001).

Alfalfa is a high value hay product with an average (1996-2008) premium over other hay of 29.7 percent, with a high premium of 41.9 percent in 2001 (NASS 2009b [Value of Alfalfa Hay]). Alfalfa hay had an average price per ton of \$172 in 2008 with other hay valued at \$121 per ton (NASS 2009b, [Value of Other Hay Dry]). The average value of alfalfa hay from 1996 to 2008 was \$335.48 per acre, with a relatively low profit margin that is highly dependent upon yield per acre. Additionally, in 2007 approximately 30 percent of harvested acreage was irrigated, indicating high investment acres for the operator.

The potential acreage enrolled under this provision would be relatively minor, given the generalized amount of acreage to be potentially enrolled in CRP from FY 2010 to FY 2012. The 2003 National Resources Inventory (NRI) indicated that approximately 100.2 million acres of cropland was considered HEL (27.2 percent) on approximately 367.9 million acres of land considered cropland (NRCS 2007). These HEL acres would generate higher EBI scores and be more likely to be enrolled in CRP.

Under the No Action Alternative, approximately 4.5 million acres, 4.4 million acres, and 5.6 million acres would be available to be enrolled under the CRP acreage limitations based on expiring acres in FY 2010 through FY 2012, respectively. Given that approximately 17.3 million acres of alfalfa would be eligible for enrollment under this provision, it can be further reduced by the amount of acres irrigated (6.5 million) totaling 10.8 million acres. Additionally, if the same percentage of alfalfa acres were grown on HEL acres as overall cropland, it could be assumed that there would be approximately 3.7 million acres of HEL eligible alfalfa acres (14.4 percent of

total harvested alfalfa acres 2001). This acreage amount is approximately the same amount of acreage taken out of alfalfa production on an annual average basis for crop rotation, fallow, or removal from agricultural practices, which percentagewise cannot be determined based on available data.

Those acres of alfalfa to be enrolled in CRP would likely be those acres that consistently produce yields that create negative returns on operator investment under both alfalfa and with its non-alfalfa rotation, or those acres which an operator may be transitioning out of active agricultural practices. In the U.S., on average from 1996 to 2008, acres of alfalfa hay harvested declined 1.1 percent per year (0.3 million acres), indicating relative consistency in the overall industry in terms of total area. It would be unlikely that overall market conditions for this commodity would create a large enrollment from the potentially eligible acres; however, local conditions could drive geographic pockets into higher percentage enrollments of these eligible acres. Given the small amount of room under the acreage cap for CRP, it would be anticipated that there would be much greater competition for the available enrollment, which indicates that only those acres with the highest EBI scores would be accepted, thereby further limiting the amount of acres from alfalfa production enrolling into CRP.

Implementing the No Action Alternative would create socioeconomic benefits for a small population of operators that would be eligible under the alfalfa cropping history; this impact would not be significant. Given the relatively small amount of acres that would be eligible, the general annual acreage limitation for CRP, and the small anticipated percentage of operators expected to participate in CRP, the benefits would be positive and primarily local. Small reductions in ancillary services for agricultural production (i.e., fertilization, insecticides, seed source) would be anticipated; however, this effect would be limited given the amount of small number of acres anticipated to be enrolled.

Compared to the action alternatives, since the No Action Alternative would not impose a rotation interval, more acres could potentially qualify, but this may be offset by requiring alfalfa be rotated with multi-year grasses and/or legumes or summer fallow, and an eligible commodity; however, the difference among alternatives would be negligible and no significant negative socioeconomic impacts would occur from continuation of current procedures.

4.11.4.3 Alternative 1

Alternative 1 would allow alfalfa alone as an eligible commodity to meet CRP crop history if the rotation interval is eight years consisting of at least six years of alfalfa and two years of an eligible commodity with the rotation occurring between 2002 and 2007. From 2002 to 2007, approximately 19.9 million acres were rotated out of alfalfa, which was approximately 95.8 percent of the total harvested acres in 2008. Under Alternative 1 the rotation interval would be more difficult to meet as the general length of alfalfa production from one seeding ranges from three to four years for a highly productive stand; but stands could be maintained for up to 10 years (see Section 4.1.4.3 Vegetation discussion). Acres of harvested alfalfa hay have been relatively stable during the period from 1996 to 2008, as illustrated in Table 4.11-1. As such, the amount of acreage that would be eligible to be enrolled in CRP under the 32 million acre program authorized limit under this provision would still be relatively minor. Fewer acres could qualify for enrollment under Alternative 1 in comparison to the No Action Alternative, which has

no specified rotation interval, but more than Alternative 2, which has an even longer rotation interval requirement, but these differences would be small. No significantly negative socioeconomic impacts would occur from implementation of Alternative 1.

4.11.4.4 Alternative 2

Alternative 2 would allow alfalfa alone as an eligible commodity to meet CRP crop history if the rotation interval is 12 years consisting of at least 10 years of alfalfa and two years of an eligible commodity with the rotation occurring between 2002 and 2007. Alternative 2 would be anticipated to have a similar amount or fewer eligible acres as Alternative 1, given the increased stand interval and amount of acres rotated out of alfalfa during the applicable crop history years. Selecting Alternative 2 would likely create similar effects to the No Action Alternative, which would be positive at the combined producer level, and not significant. This alternative lengthens the cropping history in alfalfa. Acres of harvested alfalfa hay have been relatively stable during the period from 1996 to 2008, as illustrated in Table 4.11-1. As such, the amount of acreage that would be eligible to be enrolled in CRP under this provision would be relatively minor, since the pool of available acres under the 32 million acre program cap until FY 2012 is relatively small. The socioeconomic impacts of this alternative would therefore be similar to the No Action Alternative and Alternative 1, and would not be significantly negative.

4.11.5 Provision 4 (County Acreage Limitation)

4.11.5.1 Background/Methodology

Theoretically, acreage caps in General Signups, when binding, cause greater competition for enrollment within the counties that have the caps and less competition for enrollment in counties without the acreage caps. When caps do bind, higher EBI scores are needed for enrollment in the capped counties and this can cause landowners to submit more competitive offers. Outside the capped counties, more acreage is accepted, but this effect is very limited given so few counties have binding acreage caps. Relaxing acreage caps, therefore, allows more land to be enrolled in areas with generally high EBI scores, but provides less of an incentive for landowners in those areas to propose costly EBI-enhancing cover practices, or request rental rates below the maximum. Analysis of the potential impacts to the socioeconomic conditions posed by the alternatives to implement this provision is both qualitative and quantitative.

4.11.5.2 No Action Alternative

Under the No Action Alternative, the exception of acreage above the 25 percent county cap could occur on any acreage enrolled under CRP and WRP found to not adversely affect the local economy and in areas where operators are having difficulties complying with highly erodible lands conservation requirements for active cropland. Additionally, shelterbelt and windbreak CPs are excepted under current regulation. Under the No Action Alternative, FSA would continue to determine whether removing the 25 percent cap would result in an adverse effect to the local economy by conducting a survey of county elected officials, the Chamber of Commerce, and local business leaders. Presently no additional cap is imposed.

As described in Section 2.6.4.1, currently there are 24 counties throughout the entire U.S. that exceed the 25 percent cap for CRP and WRP enrollment for a total of 0.4 million excepted acres

(1.2 percent of current CRP enrollment). This indicates potentially minor effects associated with an overall CRP acreage limit in combination with the local 25 percent acreage cap for counties. The case-by-case basis approach, with supporting documentation by local advocates, tailors CRP enrollment to best meet local circumstances and conservation goals

When compared to the other alternatives, the No Action Alternative would allow the greatest amount of potential eligible acres excepted because, unlike the other alternatives, either General or Continuous signups could be excepted from the cap, and no additional capped level would be established.

4.11.5.3 Alternative 1

Alternative 1 would allow county governments to exercise yes/no authority to exceed the 25 percent county acreage cap for additional CREP or Continuous Signup enrollments, with no additional cropland cap imposed. Selecting Alternative 1 would not be likely to create more than minor socioeconomic effects at the national scale. Under Alternative 1, county government officials would have yes/no authority to exceed the 25 percent county acreage cap without a maximum county acreage cap limitation; however, the exception would be constrained by the annual overall CRP acreage limitation. Since the authorized CRP total acreage cap is limited to 32 million acres with room for enrollment of only about 14.5 million acres between FY 2010 and FY 2012, the pool of acres under the cap is small; fewer acres would likely be excepted from county cropland caps during that period. Also, the amount of acres to potentially be excepted would be highly dependent upon Continuous CPs and National, State, and Regional Initiatives which could be in place. As well, historically very few counties have exceeded the 25 percent cap with minimal additional acres, which is not expected would change under Alternative 1. Additionally, local effects would be varied based on the amount of additional cropland acreage to be enrolled within each county; however, the requirement for a determination of “no adverse effect” to the local economy would still be in place to ensure continued socioeconomic conditions of the community. Alternative 1 would potentially except fewer eligible acres than the No Action Alternative. When compared to Alternative 2, Alternative 1 would have more potentially eligible acres that could be excepted since there would not be an additional cap limitation. While these are potential differences in impacts among the alternatives considered to implement this provision, no practical differences would likely occur given the small number of acres excepted to date. No significant negative socioeconomic impacts would occur under Alternative 1.

4.11.5.4 Alternative 2

Alternative 2 would allow county governments to exercise yes/no authority to exceed the 25 percent county acreage cap for additional CREP or Continuous Signup enrollments with a new limit of no more than 50 percent of a given county's cropland enrolled. Selecting Alternative 2 would be unlikely to create more than minor socioeconomic effects at the national scale, similar to Alternative 1; however, those effects should be less given the 50 percent county acreage cap limitation. The additional acreage cap further limits the potential negative socioeconomic effects from this provision, by further reducing the potential amount of acreage that could be excepted. The number of counties choosing to exercise this option would not likely substantially increase, given past program history. Alternative 2 would have the least allowable excess acres given the

50 percent cap and constraint of only acres enrolled through Continuous Signups. Although there would be this potential difference in impacts in comparison to the No Action Alternative and Alternative 1, no practical difference would occur given the small amount of acreage that would be excepted from the cap. No significantly negative socioeconomic impacts would occur from implementation of Alternative 2.

4.11.6 Provision 5 (Conservation Plan Management)

4.11.6.1 Background/Methodology

To analyze the effects of MCM activities, a price point was estimated based on an estimated average cost share per acre value of \$10 per acre and number of acres to be enrolled in CRP published in the 2008 CRP Annual Summary (FSA 2009c). This methodology provides a potential average cost scenario based on the number of acres enrolled in CRP from FY 2004 to FY 2009 and then predicted enrollment for the years FY 2010 to FY 2012. Analysis of the potential impacts to the socioeconomic conditions posed by the alternatives to implement this provision is both qualitative and quantitative.

4.11.6.2 No Action Alternative

Under the No Action Alternative, Conservation Plan management is expected and mid-contract management is required for all individual CPs on all contracts signed after FY 2004, and voluntary for prior authorized contracts. Currently, each State has developed specific management requirements that ensure plant diversity and wildlife benefits while maintaining soil and water quality. Mid-contract management has been excepted on certain CPs in some states based on local conditions. Mid-contract management activities are cost-shared at a 50 percent rate. As described in Section 2.6.5.1, there are approximately 0.3 million contracts enrolled after FY 2004, accounting for just under 9.5 million acres which require MCM, unless otherwise excepted. Mid-contract management activities must be included as part of the approved Conservation Plan. These activities may include prescribed burns, tree thinning, disking, interseeding, mowing, and herbicide application for control of invasive species. Some CPs may require multiple MCM activities, depending upon the CP and the location of the enrolled acres (e.g., multiple prescribed burns for pine initiatives in Mississippi). The CRP participant must ensure that a conservation cover does not fail through the fault of the participant, or the participant must re-establish the conservation cover at their own expense or return all monies paid to the participant. Mid-contract management activities are an additional expense to the participant and the FSA; however, they are meant to ensure the continued successful establishment of the conservation cover.

Mid-contact management average cost share value is approximately \$10 per acre. If all enrolled acres after FY 2004 now required a MCM cost share at the average cost-share level, that would account for an additional \$219.6 million if all MCM activities occurred within the same year; however, MCM costs are staggered by enrollment year and by length of contract. Table 4.11-2 illustrates the estimated FSA 50 percent cost share (using the average MCM cost share value), if all enrolled acres were under a 10 year contract with a MCM cost share value at the average 2008 rate.

Table 4.11-2. Estimated Mid-Contract Management FSA 50 Percent Cost Share

Acres	Enrollment FY	Mid-Contract Management FY	Mid-Contract Management Cost-Share Estimate
459,895	2005	2010	\$4,598,950
1,405,593	2006	2011	\$14,055,930
1,214,860	2007	2012	\$12,148,600
2,947,290	2008	2013	\$29,472,900
1,438,696	2009	2014	\$14,386,960
4,493,670 ^{/1}	2010	2015	\$44,936,700
4,419,981 ^{/1}	2011	2016	\$44,199,810
5,579,208 ^{/1}	2012	2017	\$55,792,080

Source FSA 2009c

Note: /1 Estimated Acres to be Enrolled per fiscal year

Implementing the No Action Alternative would generate minor localized benefits through the MCM activities. These activities could generate additional spending on ancillary services at the local level (e.g., herbicides, custom activities), which would provide a positive benefit for those receiving the funding. The operator would bear the burden to provide their portion of the cost-share, but would be offset by the cost-share and the annual payment. No significant negative socioeconomic impacts would occur from continuation of current procedure. The No Action Alternative would have the greatest level of costs for both FSA and combined operator levels when compared with the other alternatives.

4.11.6.3 Alternative 1

Alternative 1 would require Conservation Plan management throughout the term of the contract including MCM activities only if included in the Conservation Plan. Mid-contract management would not be required on an individual CP basis. Alternative 1 provides greater flexibility for the operator in conjunction with a conservation specialist to develop a Conservation Plan that fully meets local conditions, which may or may not require MCM activities. Selecting Alternative 1 would make management activities required throughout the contract as required by the Conservation Plan and with any MCM activities implemented as stipulated in the contract. This alternative would reduce the costs of management for some participants on their CRP acreage; however, it would not reduce the per year costs to FSA until FY 2014 or later, when the newly enrolled acreage becomes eligible for MCM. Selecting Alternative 1 would provide minor benefits to producers since the TSP would have the flexibility to choose MCM and they would receive the 50 percent cost share and annual payment to offset producer costs; the TSP could also choose not to require any MCM, thereby the participant would not bear the cost, but would be required to provide management of their conservation covers over the life of the contract, with any incurred costs to be offset by the contract payments. When compared to the No Action Alternative, there would be minor losses for ancillary service providers in the areas where MCM activities would not occur. When compared to Alternative 2, Alternative 1 would be anticipated

to have lower costs for both operators and the FSA over the life of the new contracts and no significant negative socioeconomic impacts would occur.

4.11.6.4 Alternative 2

Alternative 2 would require MCM on particular CPs as determined by the individual State Technical Committees, with additional management required if specified by the TSP in the Conservation Plan. This alternative provides flexibility in requiring MCM in the Conservation Plan designed for a particular parcel of land, but also provides States the ability to specify MCM by CP, as appropriate to their region. Alternative 2 would provide minor benefits to producers as participants would receive a 50 percent cost share and annual payment to offset MCM costs. Alternative 2 provides greater flexibility than the No Action Alternative, but less flexibility than Alternative 1, given the inclusion of State Technical Committee potentially mandating MCM of CPs. When compared to the No Action Alternative there would be minor losses for ancillary services providers in the areas where MCM activities would not occur. When compared to Alternative 1, Alternative 2 would be anticipated to have higher costs for both operators and FSA over the life of the new contracts, but no significant negative socioeconomic impacts.

4.11.7 Provision 6 (Harvesting CRP)

4.11.7.1 Background/Methodology

The CRP managed haying and grazing activities for 13 Western states has recently undertaken NEPA analysis for changes to the PNS, timing, and frequency of activities within those states. In most cases the overall NEPA analysis found only minor effects to environmental resources depending upon the proposed options for each State. Under the socioeconomic analysis, the primary limiting factors for grazing CRP acres were determined to be lack of infrastructure for cattle management, such as fencing and water availability. Managed grazing activities were found to be economically viable (i.e., a return in excess of the 25 percent annual rental rate payment reduction) on the majority of eligible acres in most of the states analyzed, even when varying the frequency and timing of grazing. Managed hay production was found to be economically feasible on the majority of CRP grass covers also under varied frequencies of haying and timing of the PNS. These factors would still be considered limiting within the constraints of Provision 6. In summary, more frequent haying or grazing, shorter PNS duration, and longer harvest seasons under either managed or emergency haying or grazing realize higher economic returns for the operator. Analysis of the potential impacts to the socioeconomic conditions posed by the alternatives to implement this provision is both qualitative and quantitative.

4.11.7.2 No Action Alternative

Under the No Action Alternative, several forms of authorized harvest, haying, and grazing could be conducted on eligible CRP acres. These forms include managed haying and grazing; emergency haying and grazing; incidental grazing; permissive grazing; and limited grazing for control of kudzu. These activities cannot occur during the PNS, which has been determined at the State level; also, timing, frequency, and length of activity have been set at the State level. The frequency of these activities cannot occur more than once every three years.

To determine the potential socioeconomic effects from harvesting CRP acres, existing data on all hay production activities (managed and emergency haying) and all grazing activities (managed, emergency, routine, prescriptive, and incidental) were analyzed and compared against relevant local and State production values. Haying and grazing data from 2007 was used for this analysis, since this was the most recent year for total value of agricultural production by State (NASS 2009a). Table 4.11-3 provides a comparison of hay production values from: 1) counties with haying of CRP acres; 2) the total value of hay production within those same counties; 3) total State hay production values; and 4) total agricultural values for the State. Only those states that had data by county were included within the analysis. Table 4.11-4 shows a similar comparison for grazing activities on CRP lands. Due to the high variability of forage production from one acre to another, an approximation of grazing value was determined as an average grazing fee per head per State or by the per acre cash rental value for pasture. In 2007 approximately 1.0 million acres of CRP was used for hay production and approximately 0.4 million acres of CRP were used for grazing activities.

Table 4.11-3. 2007 All Hay Production Estimated Values on CRP Acres in Relation to Local and State Production Values

State	Estimated Avg Total Hay Value from CRP (\$1,000)	25% Rental Rate Reduction	Total Value of Hay Production within Counties with CRP Haying (\$1,000)	Percent of Total County Hay Value	State 2007 Value Hay (\$1,000)	Percent of Avg Hay Value	Total Value of State Agricultural Production (2007) (\$1,000)	Percent of State Ag. Production
South Dakota	\$4,438	\$1,353	\$669,038	0.7%	\$685,650	0.6%	\$6,570,450	0.1%
Missouri	\$6,124	\$2,937	\$530,090	1.2%	\$746,372	0.8%	\$7,512,926	0.1%
Iowa	\$7,423	\$2,622	\$514,139	1.4%	\$547,440	1.4%	\$20,418,096	0.0%
Kansas	\$1,320	\$323	\$444,337	0.3%	\$614,770	0.2%	\$14,413,182	0.0%
Nebraska	\$1,968	\$737	\$418,865	0.5%	\$532,455	0.4%	\$15,506,035	0.0%
Minnesota	\$1,610	\$492	\$309,179	0.5%	\$468,780	0.3%	\$13,180,466	0.0%
North Dakota	\$5,400	\$2,298	\$285,000	1.9%	\$276,299	2.0%	\$6,084,218	0.1%
Montana	\$10	\$3	\$236,536	0.0%	\$400,760	0.0%	\$2,803,062	0.0%
Kentucky	\$1,189	\$833	\$235,078	0.5%	\$385,200	0.3%	\$4,824,561	0.0%
Wisconsin	\$345	\$170	\$229,483	0.2%	\$370,056	0.1%	\$8,967,358	0.0%
Colorado	\$613	\$67	\$170,968	0.4%	\$606,976	0.1%	\$6,061,134	0.0%
Ohio	\$490	\$200	\$140,216	0.3%	\$382,020	0.1%	\$7,070,212	0.0%
Indiana	\$447	\$156	\$134,058	0.3%	\$213,192	0.2%	\$8,271,291	0.0%
Illinois	\$2,004	\$758	\$98,272	2.0%	\$245,152	0.8%	\$13,329,107	0.0%
Alabama	\$164	\$56	\$71,683	0.2%	\$146,664	0.1%	\$4,415,550	0.0%
Washington	\$276	\$31	\$39,038	0.7%	\$498,224	0.1%	\$6,792,856	0.0%
Utah	\$14	\$1	\$37,539	0.0%	\$332,695	0.0%	\$1,415,678	0.0%
Wyoming	\$34	\$5	\$37,387	0.1%	\$255,932	0.0%	\$1,157,535	0.0%
New York	\$2	\$1	\$34,160	0.0%	\$330,552	0.0%	\$4,418,634	0.0%
North Carolina	\$45	\$27	\$24,760	0.2%	\$95,880	0.0%	\$10,313,628	0.0%
Tennessee	\$1,291	\$720	\$22,627	5.7%	\$249,375	0.5%	\$2,617,394	0.0%
South Carolina	\$5	\$1	\$11,738	0.0%	\$70,125	0.0%	\$2,352,681	0.0%
West Virginia	\$2	\$1	\$7,404	0.0%	\$79,053	0.0%	\$591,665	0.0%
Virginia	\$3	\$1	\$2,792	0.1%	\$316,494	0.0%	\$2,906,188	0.0%
New Mexico	\$10	\$1	\$2,050	0.5%	\$244,584	0.0%	\$2,175,080	0.0%

Source: FSA 2009c (All haying and grazing reports by county), NASS 2009a (State totals for agricultural production from 2007 agricultural census), NASS 2009b (All hay production statistics)

Table 4.11-4. 2007 Estimated All Grazing Values on CRP Acres in Relation to Local and State Production Values

State	Value of CRP Acres for Grazing (\$1,000)/1	Value of 25% Rental Rate Reduction (\$1,000)	Value of All Cattle Grazing in Counties with CRP Grazing (\$1,000) /2	Percent of Total Value	2007 Value of Grazing (\$1,000)/1	CRP Acres Grazing Value as a Percent of Total Value	2007 Value of State Agricultural Production (\$1,000)	CRP Grazing Value as a Percent of Total State Agricultural Production
Alabama	\$45	\$9	\$3,320	1.4%	\$234,432	0.0%	\$4,415,550	0.0%
California	\$289	\$56	\$44,925	0.6%	\$1,141,800	0.0%	\$33,885,064	0.0%
Colorado	\$403	\$90	\$337,032	0.1%	\$489,240	0.1%	\$6,061,134	0.0%
Idaho	\$2,156	\$739	\$163,777	1.3%	\$381,936	0.6%	\$5,688,765	0.0%
Illinois	\$103	\$29	\$6,670	1.5%	\$237,984	0.0%	\$13,329,107	0.0%
Indiana	\$10	\$2	\$1,310	0.8%	\$159,840	0.0%	\$8,271,291	0.0%
Iowa	\$1,504	\$333	\$50,601	3.0%	\$692,640	0.2%	\$20,418,096	0.0%
Kansas	\$506	\$5	\$469,258	0.1%	\$1,075,200	0.0%	\$14,413,182	0.0%
Kentucky	\$123	\$36	\$8,326	1.5%	\$436,896	0.0%	\$4,824,561	0.0%
Michigan	\$2	\$0	\$747	0.3%	\$188,256	0.0%	\$5,753,219	0.0%
Minnesota	\$154	\$41	\$20,128	0.8%	\$433,344	0.0%	\$13,180,466	0.0%
Mississippi	\$67	\$13	\$1,624	4.1%	\$165,168	0.0%	\$4,876,781	0.0%
Missouri	\$1,082	\$232	\$31,758	3.4%	\$781,440	0.1%	\$7,512,926	0.0%
Montana	\$2,087	\$900	\$393,661	0.5%	\$552,960	0.4%	\$2,803,062	0.1%
Nebraska	\$1,150	\$234	\$1,030,200	0.1%	\$1,995,000	0.1%	\$15,506,035	0.0%
New Mexico	\$52	\$50	\$61,200	0.1%	\$226,080	0.0%	\$2,175,080	0.0%
North Carolina	\$2	\$0	\$326	0.6%	\$150,960	0.0%	\$10,313,628	0.0%
North Dakota	\$258	\$57	\$247,938	0.1%	\$344,100	0.1%	\$6,084,218	0.0%
Ohio	\$41	\$11	\$2,438	1.7%	\$218,448	0.0%	\$7,070,212	0.0%
Oklahoma	\$350	\$154	\$149,040	0.2%	\$572,400	0.1%	\$5,806,061	0.0%
Oregon	\$207	\$3	\$48,048	0.4%	\$230,880	0.1%	\$4,386,143	0.0%
South Dakota	\$523	\$133	\$436,356	0.1%	\$1,021,200	0.1%	\$6,570,450	0.0%
Tennessee	\$40	\$10	\$3,078	1.3%	\$399,600	0.0%	\$2,617,394	0.0%
Texas	\$1,474	\$522	\$442,680	0.3%	\$1,668,000	0.1%	\$21,001,074	0.0%
Utah	\$485	\$255	\$45,156	1.1%	\$141,432	0.3%	\$1,415,678	0.0%
Virginia	\$1	\$0	\$237	0.5%	\$287,712	0.0%	\$2,906,188	0.0%
Washington	\$428	\$183	\$28,694	1.5%	\$202,464	0.2%	\$6,792,856	0.0%
West Virginia	\$11	\$3	\$237	4.8%	\$74,592	0.0%	\$591,665	0.0%
Wisconsin	\$83	\$13	\$20,202	0.4%	\$594,960	0.0%	\$8,967,358	0.0%
Wyoming	\$239	\$137	\$111,670	0.2%	\$276,276	0.1%	\$1,157,535	0.0%

Source: FSA 2009c (All haying and grazing reports by county), NASS 2009a (State totals for agricultural production from 2007 agricultural census), NASS 2009b (All hay production statistics)

Note: /1 = Value per acre was approximated by the annual cash rental rate per acre of pasture

/2 = Value of cattle grazing was approximated by the per head grazing fee per state or by the average grazing fee across the western states

On average, from 2005 to 2008, there were approximately 1.0 million acres of CRP hayed each year and 0.6 million acres of CRP grazed. The value of hay production in 2007 on CRP acres ranged from 5.7 percent of the total value of hay production within the combined counties where CRP acres were hayed, to as little as less than 0.1 percent. When compared to the statewide values for hay production, CRP acres ranged from 2.0 percent to as little as less than 0.1 percent. For statewide agricultural values of production, most States were below 0.1 percent. The value of grazing on CRP ranged from 4.8 percent of the total value of grazing within the combined counties where CRP grazing occurred to approximately 0.1 percent. As a percentage of total grazing value, CRP acres ranged from 0.6 percent to less than 0.1 percent. The comparison to the total State agricultural production was similar to that for hay production.

In 2007, emergency hay production accounted for approximately 5.0 percent of the total CRP acres hayed, while emergency grazing activities took place on approximately 39.8 percent of the total CRP acres grazed. On average, from 2005 to 2008, emergency haying accounted for 28.5 percent of CRP acres hayed and emergency grazing accounted for 58.1 percent of the CRP acres grazed. This indicates that haying practices, even with a 25 percent annual rental rate reduction, would be utilized for routine cyclic production; however, grazing CRP acres would more likely occur under emergency circumstances, which would likely be the result of a lack of appropriate grazing management infrastructure on those acres.

Under the No Action Alternative it would be unlikely that there would be more than minor changes to hay production and grazing on CRP acres based on the existing constraints. As such, current production practices are fairly small when compared to total production values within the combined counties containing those CRP acres and the total production at the State level. It can be assumed that the effects would remain minor due to: 1) the economic value of haying or grazing may not be worth the 25 percent reduction in annual rental rate payments and/or the transactions costs for obtaining permission to hay/graze may be too high; 2) generalized market effects on the hay market would likely be very small since hay quantities are generally small; and 3) broader economic effects would approach zero, since operators would only participate in haying or grazing if production value is worth at least the 25 percent payment reduction at the point where the marginal costs and benefits are equal; however, negative impacts could occur on a local level in less diversified areas.

The No Action Alternative creates small, positive socioeconomic effects for operators, which do not, in turn, create significant adverse effects to those operators that do not have or cannot utilize CRP acres for these harvesting activities. The No Action Alternative would create fewer benefits than the other alternatives, since the No Action Alternative does not include prescribed grazing for the control of invasive species other than kudzu, which have been documented to place a considerable burden on societal well being.

4.11.7.3 Alternative 1

Alternative 1 would allow only those CPs currently authorized for managed haying and grazing activities, incidental grazing, and biomass harvest to be authorized for managed harvest and routine grazing under the 2008 Farm Bill provisions. A rental payment reduction similar to the No Action Alternative would be imposed. Any change to the PNS, period of routine grazing and managed harvest, length, and frequency of routine grazing and managed harvest by States

would require individual analysis under NEPA by those State Technical Committees desiring those changes. Additionally, prescribed grazing would be allowed for control of invasive species other than kudzu with no reduction of the annual rental rate, so long as the activity was part of the prescribed control plan included in the Conservation Plan. If implemented, prescribed grazing for control of invasive plant species would not be authorized for CP23, CP23A, non-grass related CP25, CP27, CP31, or CP39-41.

Selecting Alternative 1 would result in only minor effects to the socioeconomic conditions similar to the No Action Alternative. Allowing prescribed grazing for the control of invasive plant species other than kudzu would realize substantial societal benefits – as discussed in Chapter 3.11 Socioeconomic Resources, invasive species damage causes lost national agricultural production in hundreds of millions of dollars a year. Requiring additional State-level NEPA analysis of changes to the PNS, timing, and frequency of managed harvesting and routine grazing ensures potential negative socioeconomic impacts are determined and addressed on a local scale. As such, the overall socioeconomic effects would be similar to the No Action Alternative, but slightly greater due to the potential biological control of invasive species. Alternatives 1 and 2 would be anticipated to create similar benefits; however, further NEPA analysis to change any of the provisions, including applicable CPs under Alternative 2, could create more localized benefits at the State level by further refining conditions for that State. No significant negative impacts to socioeconomic conditions would occur under Alternative 1.

4.11.7.4 Alternative 2

Alternative 2 provisions are the same as Alternative 1, but differ in that changes to CPs authorized for managed harvesting or routine and prescribed grazing would be permitted under Alternative 2; however, changing the CPs authorized for managed harvest or routine grazing would require additional NEPA analysis by those State Technical Committees desiring such changes.

Selecting Alternative 2 would result in only minor effects to the socioeconomic conditions. Pending NEPA analysis, Alternative 2 would allow managed harvest or routine grazing on additional CPs in contrast to the other alternatives analyzed. Any changes to be made (e.g., PNS dates, applicable CPs, timing of activities, length of activities) would require separate NEPA analyses for each affected state. The prescribed grazing activities would be similar to Alternative 1. As such, the overall socioeconomic effects would be similar to the No Action Alternative, but slightly greater due to the potential biological control of invasive species. Alternatives 1 and 2 would be anticipated to create similar benefits; however, further NEPA analysis to change any of the provisions, including applicable CPs under Alternative 2, could create more localized benefits at the State level by further refining conditions for that State. No significant negative socioeconomic impacts would occur from implementation of Alternative 2.

4.11.8 Provision 7 (NASS Cash Rental Rates)

4.11.8.1 Background/Methodology

If NASS survey-based rates are markedly different from historical rental rates and are used in place of past methods for setting annual rental rates, it could markedly change payment rates,

incentives for farmers to participate in CRP, and ultimately the total costs and benefits of CRP and the geographic distribution of enrollments. Data from the first NASS 2008 survey of rental data have been collected and show substantial differences from rates as estimated in the past, with positive differences in some areas and negative changes in other areas. Changes in annual rental rates may also affect offers from operators who do participate, including proposed cover practices and requested rental rates in competitive General Signups (see Section 3.11). The rental rates data reported by NASS give county-level or larger-area estimates for irrigated cropland, non-irrigated cropland, and pastureland. The analysis of the proposed changes focuses on rates for non-irrigated cropland because most CRP land was non-irrigated cropland prior to enrollment, and because FSA used estimates for non-irrigated cropland rates in past signups.

Current Methods for Rental Rates

Rental rates for General Signups and Targeted Signups are determined somewhat differently. Details about these specific adjustments are described in Chapter 3 and Appendix A. Underlying all rates, however, are soil-specific rental rates that are estimates for the agricultural production value of enrolled parcels. Currently, soil-specific rental rates are determined in a two-step process. In the first step, FSA estimates county average rental rates for non-irrigated cropland using an informal elicitation of experts from county offices. These rates are referred to as land value survey (LVS) rates. Average rental rates are adjusted for specific soils within each county. FSA provides county offices with a proposed adjustment for specific soils based on the proportional difference between the index value for each particular soil and the average soil index value in the county. Counties can use these soil adjustments or make their own soil adjustments, so long as, the average soil rental rate is maintained (upward adjustments for some soils have to be compensated by equally-sized downward adjustments for other soils).

Adjustments to Rental Rates

The NASS rental rates are county-level or larger geographic areas. For many counties there were not enough data points for NASS to release county-level estimates, so they reported crop district or state-level estimates instead. The analysis considers each area reporting a NASS rental rate estimate, whether that area is comprised of a county or some larger area. Comparisons are made with LVS rates for the same areas. When LVS rates from multiple counties need to be matched with a single NASS rental rate, a weighted average was taken, with the weights corresponding to the agricultural land area in each county.

Figure 4.11-1 plots the posted 2008 LVS against the 2008 NASS rates for non-irrigated cropland. Each point plotted represents an area for which there is a NASS reported rental rate, which may be an individual county or larger area as described above. For some areas the NASS rate is more than 50 percent above or below the LVS rate. The majority of areas have rental rates below the LVS rate but varying by less than 50 percent below the LVS rate.

Figure 4.11-2 shows differences between NASS and LVS rates geographically. Dots show the locations of CRP enrollments as of 2009 (FSA 2009a). Positive differences tend to be in the Pacific Northwest, particularly in the Palouse region of Washington, and in the Mississippi Delta region. Some regions with particularly high current enrollments of CRP, such as the panhandle of Texas, Oklahoma, and New Mexico, indicate substantial negative differences.

The rental rate differences presented figures 4.11-1 and 4.11-2 were used together with other variables in a regression model that predicts CRP enrollment. This model was then used to develop predictions for how CRP enrollments might change if baseline rental rates were changed from LVS rates to NASS survey based rates.

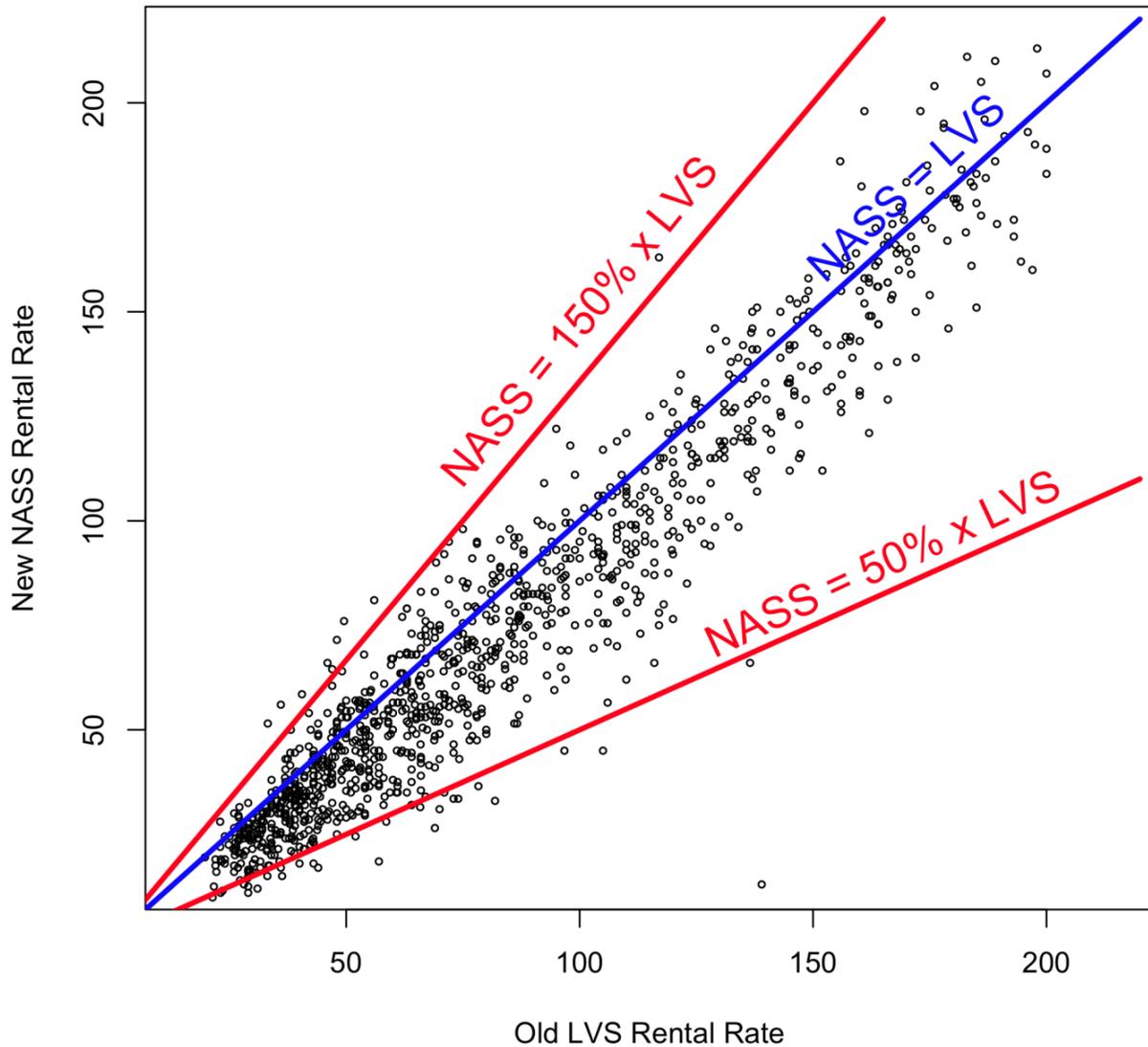


Figure 4.11-1. LVS Rates Versus NASS Rates

The main idea underlying the regression model is to relate enrollment acreage to posted rental rates. Holding all other factors constant, including actual market rates and land characteristics, a higher posted rental rate provides an incentive for more landowners to participate in CRP. Greater participation follows because higher posted rates would allow at least some landowners to earn greater rental income from CRP.

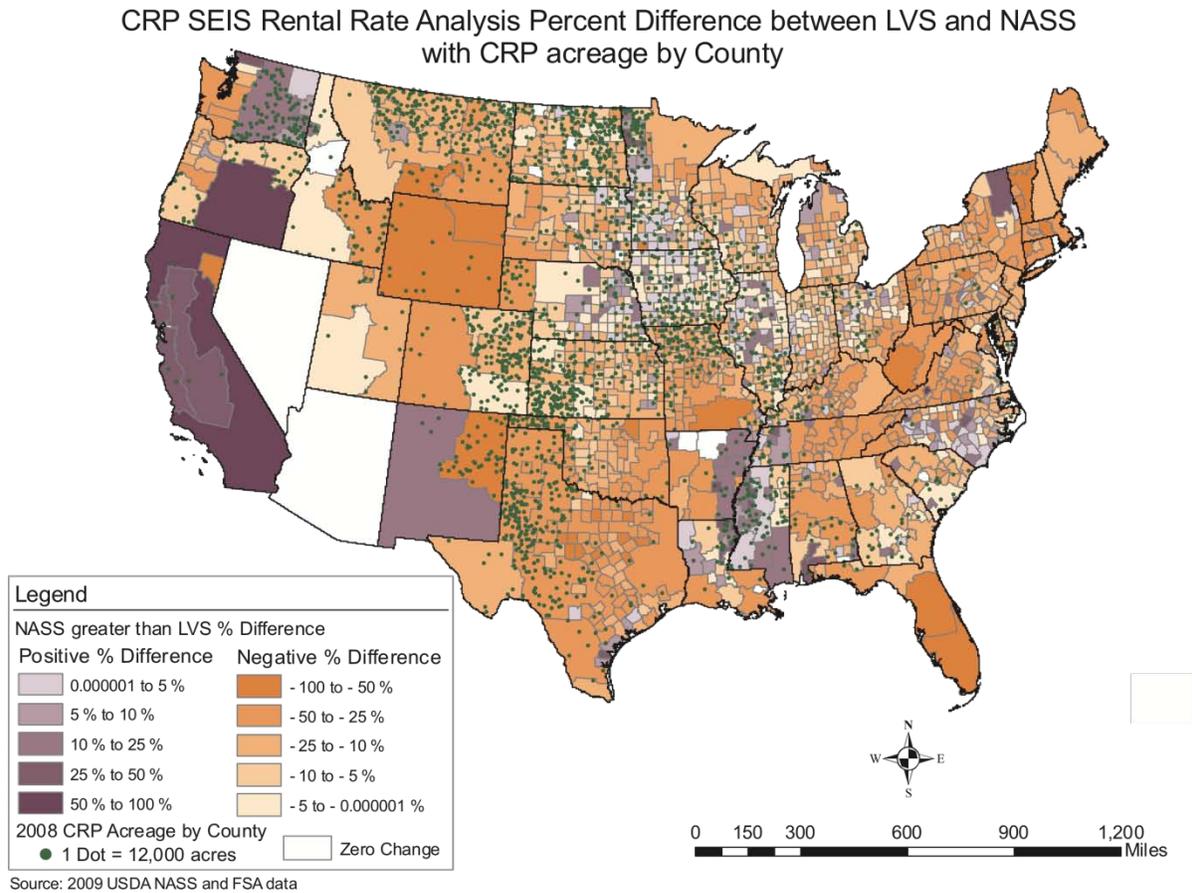


Figure 4.11-2. Rental Rate Analysis Percent Difference between LVS and NASS rates by County.

The crux of the analysis involves developing suitable controls so that comparisons between sample unit areas with different posted rates are otherwise similar. Past posted LVS rates for CRP presumably contained a certain amount of error that is unavoidable, especially given they were based on expert judgment, not actual rental rates. Comparisons are most plausible if they isolate the random errors in LVS rates.

Several features of the regression model make this key assumption as plausible as possible. First, in all specifications a separate indicator variable (a *fixed effect*) is included for each MLRA. Because some sample units do not fall exclusively within a single MLRA, the MLRA with the most land area in the sampling unit is assigned to the sample unit in this analysis. Including fixed effects for MLRAs narrows comparisons between different CRP enrollments and posted rates *within* MLRAs. Since MLRAs tend to have similar land characteristics, but overlap political and administrative areas, like States and counties, these fixed effects help to isolate variation in posted rental rates that are unlikely to be associated with unobserved factors, especially land characteristics.

Another key control variable is the NASS rental rate. Because NASS rental rates were obtained from a random sample of actual leases, they provide an objective measure of farmers' true opportunity costs. Thus, the essential comparison comes from differences in enrollment rates within MLRAs as they relate to differences between the posted rental rate and the NASS rental rate.

Other control variables include the amount of highly erodible cropland in the sample unit (area of pre-CRP cropland with an EI greater than or equal to eight) and the total agricultural area in the sample unit. These measures, plus location variables that account for Conservation Priority Areas and other factors, are critical because they serve as baselines for the amount of land likely to be eligible for CRP. Because the analysis considers total enrollment, these measures are estimated from the 1982 National Resources Inventory, which pre-dates establishment of CRP in 1986. More details about the regression model are provided in Appendix K.

Using parameters from the regression model, combined with some additional scaling assumptions (Appendix K), estimates were developed for the general geographical shift in enrollments stemming from a change in rental rates from LVS to NASS. These predictions are presented in Figure 4.11-3. Holding total 2008 CRP acreage fixed, Figure 4.11-3 illustrates how geographic patterns of enrollment would have been different if NASS rates were used in place of LVS rates. This presents an indication of the general long-run tendency if NASS rental rates were to be used indefinitely into the future and current CRP acreage were maintained, but does not represent a specific prediction for future enrollment. Further; future enrollments are constrained by past enrollments with ongoing rental contracts together with changing targets for total enrollment acreage. Predictions for specific alternative actions are examined below. Note that NASS rates are based on cash leases. In some regions of the country share or other kinds of lease agreements are relatively more prevalent. Nevertheless, because the model considers *local* (within MLRA) differences between posted and NASS-based lease rates, the incidence of share leases in comparison to cash leases are likely to be similar.

A separate and similarly specified model was developed for predicting Targeted Signup acreage enrollment. The main difference is that the Targeted Signup acreage model accounts for the censored nature of the data, with many counties having zero enrolled acreage.

4.11.8.2 No Action Alternative

Under the No Action Alternative, FSA would continue to use LVS rates but remove maintenance incentives associated with annual payments for all contracts under General Signup established after December 1, 2009. Prior to October 1, 2009, landowners could request \$1.00 to \$5.00 per acre per year, depending on the cover practice, as a maintenance fee. This maintenance fee has been reduced to zero for General Signup contracts executed after that date, effectively reducing the maximum rental rate that could be requested under General Signups. Rental rates for non-CREP CCRP would continue to be based on the LVS, but offers an additional 20 percent rental payment increase for certain CPs, and SIPs and PIPs. Rental rates for CREPs are based upon the LVS, but additional rental payment incentives vary by particular CREP; regular Continuous SIPs and PIPs would continue to be applied to CREP rates as well. Maintenance payments for Continuous Signup would range up to a maximum \$5 per acre, depending upon CP (see Appendix A).

Predicted Changes in CRP Acreages under Provision 7

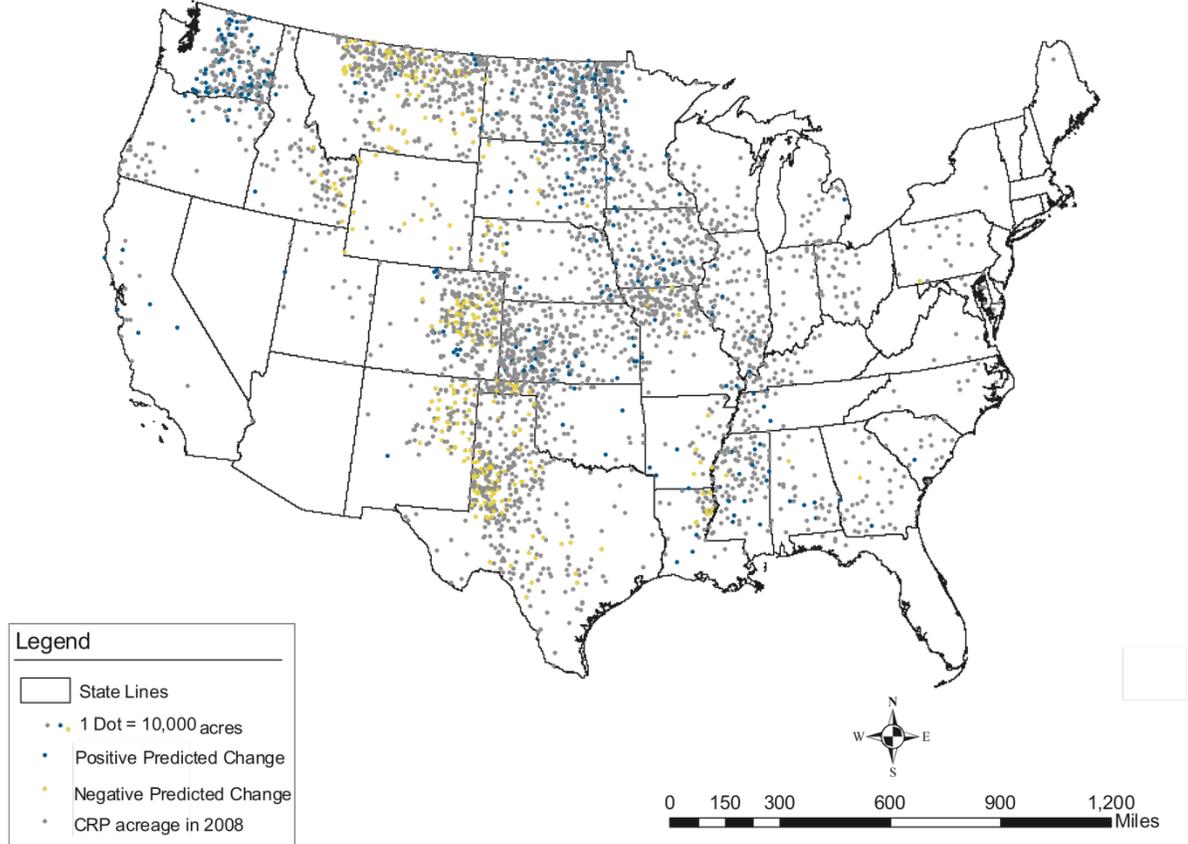


Figure 4.11-3. Long-Run Predicted Changes in CRP Acreage under Provision 7

The lower maximum rental rates would slightly reduce compensation to farmers who otherwise would have been able to offer the maximum rental rates plus full maintenance fee and still be virtually assured of having their General Signup offers accepted. Removal of maintenance fees may also slightly reduce participation rates.

The pattern of new enrollments after 2009 depends on the target acreage level, acreage in current contracts that will expire, and locations of expiring contracts, but would not be substantially influenced by removal of maintenance payments. Under the No Action Alternative, a total of 32 million acres are authorized for enrollment as of FY 2010. As of October 2009, about 26.7 million acres were enrolled in General Signup and about 4.3 million in CCRP. As shown in Table 2.6-3, a total of 11.8 million acres would expire from the program from FY 2010 to 2012, with a large proportion of expirations (24.9 percent) in Kansas and Texas. In FY 2009, the average General Signup rental payment was \$44/ac, average regular CCRP (non-CREP) was \$93/ac, and average CREP rental payments were \$129/ac. In order to meet Targeted Signup of 4.5 million acres under the No Action Alternative, LVS rates would need to increase an estimated 8.9 percent, which is well within the 20 percent incentives currently offered for

Targeted Signups. While there would be potential small local impacts due to some shifting of enrolled acres, on a national level changes would be minimal. Socioeconomic impacts of the No Action Alternative would be less than for either Alternatives 1 or 2 that would utilize NASS rental rates. No significant negative impacts would occur from continuing the current program with elimination of the maintenance fee.

4.11.8.3 Alternative 1

Under Alternative 1, for General Signups after December 1, 2009, annual payment rates would be determined by the updated NASS market dryland and irrigated rental rates with soil productivity adjustments. Targeted Signups would continue to utilize LVS rates, but rental payment incentives for Targeted Signups would be increased 20 percent to ensure acreage targets are achieved. The same SIPs and PIPs as the No Action Alternative would continue to apply. Maintenance payments would be reduced to zero for General Signups in accordance with procedures effective October 1, 2009.

Implementing Alternative 1 would cause a reduction in maximum rental rates in General Signups for most counties in comparison to the No Action Alternative. Based on the information available, there would be increases in maximum rental rates in a small number of counties. Implementing Alternative 1 would cause a general decrease in the number of offers in areas where NASS rental rates are below LVS rental rates; likewise, it would be anticipated that there would be an increased number of offers in areas with higher rental rates. Thus, these changes would likely cause a shift in the pattern of new enrollments.

These factors were combined with the pattern of historical enrollments to predict total new CRP enrollments between FY 2010 and FY 2012. Table 4.11-5 illustrates the predicted changes in State enrollments during the period. The analysis assumed, as a point of reference, the acreage targets discussed under Provision 2 are met.

Columns A and B in Table 4.11-5 provide enrollment estimates based on the 32 million acre CRP cap, while columns C and D provide enrollment estimates based on the 24 million acre CRP cap (see Section 4.11.3). In Table 4.11-5, columns A and C predict estimated enrollment by State using the existing LVS rates. Total enrollments would include these new enrollments plus current contracts that expire after FY 2012. Because data were not available for contracts that were previously extended, new enrollments do not account for these acres, which total about 3.45 million acres. Enrollment predictions should be considered an approximate guideline for where enrollments could occur, conditional on future enrollment criteria being otherwise similar to past enrollments.

In Table 4.11-5, columns B and D predict estimated enrollment based on the NASS rental rates under the assumption acreage targets would be met under the four scenarios considered. Implementing Alternative 1 would create a condition in which more counties would see rental rate reductions than increases, thereby the number of offers for General Signups may decline for any given acreage target. Fewer offers increases the potential that program enrollment goals at current levels would not be met; however, enrollments may increase in areas where NASS rental rates are higher than LVS rates such that enrollment goals would still be met. It would also be anticipated that those landowners would change offered CPs in General Signup offers.

Table 4.11-5. Total Projected New CRP Enrollments, FY 2010-2012, under LVS and NASS Rental Rates (1,000 acres)

State	A LVS Rates and 32 million acre target ¹	B NASS Rates and 32 million acre target ¹	C LVS Rates and 24 million acre target ²	D NASS Rates and 24 million acre target ²
ALABAMA	175	291	77	132
ARKANSAS	56	73	12	29
CALIFORNIA	21	91	6	32
COLORADO	1,665	1,182	920	694
CONNECTICUT	0	0	0	0
DELAWARE	1	3	0	0
FLORIDA	17	29	5	9
GEORGIA	89	124	14	22
IDAHO	376	275	184	125
ILLINOIS	222	370	16	60
INDIANA	57	94	7	17
IOWA	547	725	125	206
KANSAS	1,911	2,118	970	1,076
KENTUCKY	98	133	20	36
LOUISIANA	18	88	2	26
MAINE	13	12	7	7
MARYLAND	11	21	2	4
MASSACHUSETTS	0	0	0	0
MICHIGAN	42	95	6	19
MINNESOTA	426	717	118	229
MISSISSIPPI	242	364	71	128
MISSOURI	26	149	9	19
MONTANA	1,217	748	490	361
NEBRASKA	603	633	264	275
NEW HAMPSHIRE	0	0	0	0
NEW JERSEY	1	1	0	0
NEW MEXICO	202	42	62	25
NEW YORK	8	12	1	2
NORTH CAROLINA	34	58	10	16
NORTH DAKOTA	1,103	1,372	625	737
OHIO	57	111	6	14
OKLAHOMA	730	581	387	316
OREGON	162	207	21	45
PENNSYLVANIA	30	48	13	16
SOUTH CAROLINA	81	118	32	45
SOUTH DAKOTA	528	809	205	326
TENNESSEE	72	118	16	33
TEXAS	2,017	491	834	199
UTAH	201	195	104	103
VERMONT	0	0	0	0
VIRGINIA	15	18	4	6
WASHINGTON	500	1,140	111	409
WEST VIRGINIA	0	0	0	0
WISCONSIN	128	184	43	65
WYOMING	187	48	87	24
TOTAL ^(3,4)	13,889	13,888	5,886	5,887

Source: Combines model estimates with data on expiring acres (2010-2012) provided by FSA.

Notes:

¹ – Analyzes the effects from 32 million acre CRP cap (Provision 2 – No Action Alternative and Alternative 1)

² – Analyzes the effects from 24 million acre CRP cap (Provision 2 – Alternative 2)

³ – Total acres under LVS and NASS rate alternatives differ due to rounding

⁴ – Total acres enrolled exclude acres associated with recent contract extensions that were not indicated in FSA contract data. Accounting for acres under contract extensions that may expire by 2012, imply an additional 3.45 million acres.

Predicted enrollment differences illustrated in Table 4.11-5 do not account for these additional changes, which would likely be of secondary importance relative to participation decisions. Overall budgetary costs could increase or decrease relative to the No Action Alternative for any given acreage target.

Implementing Alternative 1 for Targeted Signups (Continuous CRP, CREP, SAFE, Farmable Wetlands, and Initiatives) could elicit greater participation. Expected increases in rental payments necessary to achieve target acreages under LVS and NASS county-level baseline rates are summarized in Table 4.11-6. Holding current initiatives fixed, increasing current rental rates by 20 percent would elicit more than enough participation to reach either 4.0 or 4.5 million acre targets. Changes of -18.5 and 8.9 percent would be required, far less than the 20 percent increase proposed in Alternative 1. But the 20 percent increase would, by itself and without establishment of new conservation initiatives, be insufficient for eliciting participation great enough to achieve the 8.0 million acres target (an increase of 100.4 percent would be needed). If, however, an 8.0 million acre target were selected, it would likely be accompanied by establishment of new conservation initiatives, which would attract greater participation. If new initiatives are established, acreage targets might be achieved with a 20 percent increase over current rates. It is not possible, however, to estimate participation in new initiatives using historical enrollment patterns.

Table 4.11-6. Estimated Change in Payment Rates Needed to Achieve Targeted Signups Goals Under LVS and NASS Baseline Rates

	Acreage Goal for Targeted Signups (Continuous CRP, CREP, SAFE, Farmable Wetlands, Initiatives)		
	4.5 million acres	8.0 million acres	4.0 million acres
LVS Baseline	+8.9%	+100.4%	-18.5%
NASS Baseline	+20.6%	+128.2%	-9.3%

While Alternative 1 would, over time, cause a substantial shift in the geographical pattern of acreage enrollments, these changes would still be small relative to the size of local and national economic activities. It may be that some locations losing CRP enrollments would experience negative impacts to local business sectors that cater to recreation activities and positive impacts to business sectors related to agriculture, and vice-versa for some locations gaining CRP enrollments. But existing evidence (e.g., Sullivan *et al.* 2004) shows that socioeconomic costs and benefits of CRP enrollments have generally netted close to zero total impacts, both locally and nationally. Therefore, no significantly negative socioeconomic impacts would occur from implementation of Alternative 1, but modest costs and benefits associated with a redistribution of CRP acreage would be larger than for the No Action Alternative, but less than Alternative 2.

4.11.8.4 *Alternative 2*

Under Alternative 2, for all new contracts executed after December 1, 2009, annual payment rates would be determined by the updated NASS market non-irrigated and irrigated rental rates with soil productivity adjustments. Rental payment incentives for Targeted Signups would remain the same as the current program as presented in Appendix A, along with the same SIPs and PIPs. Maintenance payments would be reduced to zero for General Signups in accordance with procedures effective October 1, 2009.

Under Alternative 2, total acreage enrollments would be similar to those anticipated under Alternative 1 because most CRP acreage is comprised of General Signup acres, and payment rates under Alternative 2 would be the same NASS-based rates as those under Alternative 1. Payment rates for Targeted Signups, however, would be much lower than those under Alternative 1 for the great majority of counties because: 1) NASS rates are lower than LVS rates for most counties, and 2) there would not be an additional 20 percent incentive above existing incentives as under Alternative 1. As a result, Targeted Signups would elicit less participation in most counties. In the small number of counties where NASS rates are more than 20 percent above LVS rates, participation would be expected to increase modestly.

A goal of 4.0 million acres could be achieved with NASS-based rates and current initiatives; however, under Alternative 2, the current goal of 4.5 million Targeted Signup acres would be missed by approximately 0.5 million acres, which would not be a significantly negative impact on socioeconomic resources. If the target was expanded to 8 million acres as considered under Provision 2, the goal would not be met utilizing NASS rates with existing initiatives.

4.11.9 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives)

4.11.9.1 *Background/Methodology*

Currently FSA estimates that approximately 1,900 Indian Tribal Ventures, the Bureau of Indian Affairs (counted as one venture), 458 limited resource farmers/ranchers, and 15,993 socially disadvantaged farmers/ranchers participate in the CRP with payments in 2008 totaling more than \$37.8 million (2.0 percent of total CRP 2008 outlays). The 2007 Agricultural Census estimated that there were more than 0.2 million minority operators and 1.0 million women operators (approximately 73,687 minority women operators). Additionally, the 2007 Agricultural Census indicated that there were approximately 53,123 American Indian or Alaska Native operators, and 14 percent of farms are operated by limited resource farmers/ranchers. Ahern and Newton (2009) estimated that there were approximately 0.7 million beginning farmers/ranchers and 0.1 million less-experienced farmers/ranchers on existing farms. Analysis of the potential impacts to the socioeconomic conditions posed by the alternatives to implement this provision is both qualitative and quantitative.

4.11.9.2 *No Action Alternative*

Section 1244(a) Beginning Farmers and Ranchers currently provides for incentives to be offered to beginning and limited resource farmers, ranchers, and Indian Tribes to participate in conservation programs. This incentive was created to assist these populations to “foster new farming and ranching opportunities and enhance long-term conservation stewardship.” The

incentives under the No Action Alternative would be to beginning farmers/ranchers, limited resource farmers/ranchers, and Indian Tribes. Continuation of the current program would have no significant impacts, either positive or negative. Both Alternatives 1 and 2 would provide greater benefits to these populations than the No Action Alternative, and expand benefits to socially disadvantaged farmers/ranchers.

4.11.9.3 Alternative 1

Alternative 1 would make beginning, limited resource, and socially disadvantaged farmers and ranchers and Indian Tribes eligible for cost share rates at least 25 percent above otherwise applicable rates (up to 90 percent) and advance payments of up to 30 percent of the amount determined for the purchase of materials and services. The USDA budget would require PAYGO offset which could potentially reduce other program services.

A population of approximately 1.1 million socially disadvantaged operators comprise 33.3 percent of all operators (includes male minority operators and all women operators), and 0.8 million beginning farmers/ranchers constituting 24.2 percent of all operators (combined beginning and less experienced operators), and 14 percent of American farms classed as limited resource currently pursuing active agricultural operations could take advantage of the opportunities provided by FSA if Alternative 1 were selected. The three categories cannot be combined into a total potential participant population, since a combined total could double-count a substantial percentage of individuals. Participation in CRP, by these populations, account for approximately 2.4 percent of the total contracts (as of September 2009), indicating an underrepresentation of these populations within the CRP. If a representative population (based on the total population of operators) could be induced into CRP through Alternative 1, it would require an increase in the number of contracts held by these populations between nine to 12 times greater. A more realistic projected population would be similar to the current percentage of contracts or potentially double the number of contracts.

Under Alternative 1, members of these populations enrolling in new CRP contracts could receive up to 90 percent cost share on all new applicable acres, which could generate an additional payment of approximately \$78.12 per acre (\$97.65 median cost share per acre, assuming 50 percent cost share for total per acre cost of \$195.30) for each eligible participant with approximately 30 percent (\$58.59 per acre) available as an advance payment for materials and services.

These populations, as a general segment of the agricultural operator population, are large enough to receive benefits from the selection of Alternative 1, if they were to participate in CRP; however, that benefit would be minimized based on the overall CRP acreage limitation from FY 2010 to FY 2012, and the percentage of these populations expected to participate in CRP. If a similar percentage of these populations as the current percentage (2.4 percent) were to enroll new acreage under CRP based on the acreage limitations, it could create an additional 8,000 or fewer contracts based on an average contract size of 45 acres (0.3 million acres). This could generate approximately \$27.0 million in additional cost-share payments to these populations, with the potential for approximately \$20.2 million to be advanced for materials and services. For these populations within the CRP, Alternative 1 would not create significant socioeconomic effects overall, but could create local benefits, though they would be minor given the small

overall population size expected to participate. Alternative 1 would provide greater benefits to these populations than either the No Action Alternative, since it is more inclusive, or Alternative 2, which restricts benefits to Continuous Signup incentives.

4.11.9.4 Alternative 2

Selecting Alternative 2 would expand incentives to include not only beginning or limited resource farmers and ranchers as well as Tribes, but also socially disadvantaged farmers/ranchers. Alternative 2 would make these populations eligible for additional SIPs for practices that already include such incentives. Similar to Alternative 1, this provision would include a population of approximately 1.1 million socially disadvantaged operators (33.3 percent of total operators), 0.8 million beginning farmers/ranchers (24.2 percent of total operators), and farms classed as limited resource (14 percent of American farms in 2007); however, the incentives to be provided to these groups would be limited to CPs that are currently eligible for SIPs, which limit the acreage to Continuous Signup acreage, reducing the amount of eligible acres (CPs 5, 8, 16, 17, 21, 22, 23, 23A, 27 through 33, and 36 through 38).

In general, SIPs provide a one-time payment as a defined dollar amount or as a percentage payment. Based on CPs eligible for SIPs in Signups 35 and 36, there were approximately 0.5 million acres enrolled with an outlay in SIPs for FY 2008 of \$25.2 million (approximately \$45.87 per acre). Using the same assumptions as Alternative 1, if 2.4 percent of the participants in the eligible CPs were from an incentivized population, then approximately 12,000 acres would be enrolled by those populations, providing an additional \$0.6 million to these populations as incentive payments. Additionally, as with other SIPs, a PAYGO offset in the USDA budget would be required. This example is based on the current proportion of CRP participants; the range of overall incentive payments could be higher or lower, but would be anticipated to be less than Alternative 1. As such, Alternative 2 would provide minor benefits to these populations; however, it would be unlikely to create a much larger percentage of these populations to participate in CRP. Alternative 2 would provide greater benefits than the No Action Alternative; but it would be off-set by the PAYGO requirements of redistribution, which could reduce other program services with minor secondary socioeconomic effects. No significant negative impacts to socioeconomic resources would occur from implementation of Alternative 2.

4.11.10 Provision 9 (Pollinator Conservation)

4.11.10.1 Background/Methodology

Analysis of the potential impacts to socioeconomic conditions by the alternatives proposed to implement this provision is qualitative.

4.11.10.2 No Action Alternative

Under the No Action Alternative, pollinator conservation is limited to the general methods described by the NRCS to reduce impacts to pollinators and State initiatives, such as the Michigan SAFE Native Pollinator goals. The latter SAFE project offers up to 90 percent cost share for preparation and establishment of the enhanced pollinator conservation planting, as well as a \$100 per acre one-time signing bonus, and an annual rental payment, including payments for maintenance. Socioeconomic effects would be seen if the pollinator population

diminishes, causing farms to lose their productivity. These economic effects are discussed in Section 3.11.10. It would be unlikely that by selecting the No Action Alternative there would be significant socioeconomic effects. When compared to Alternatives 1 and 2, the No Action Alternative would result in fewer costs for new plantings and changes to the application of agricultural chemicals.

4.11.10.3 Alternative 1

Under Alternative 1, existing CPs would be modified to benefit native and managed pollinators and a new Pollinator Habitat CP would be created. The new Pollinator Habitat CP would have a goal of including up to five percent of the enrolled acres in new pollinator friendly habitat. Under this provision, only the new acres enrolled in CRP would be eligible for the Pollinator Habitat CP, which could be a maximum 1.6 million acres. The new Pollinator Habitat CP could be similar to the Michigan CRP-SAFE Native Pollinator project. Currently, there are no acres enrolled in the Michigan CRP-SAFE Native Pollinator project; however, if the program was fully enrolled, the value to operators could reach approximately \$1,023 per acre over a ten year period. Using the Michigan CRP-SAFE program as an example, the new Pollinator Habitat CP could cost FSA approximately \$1.6 billion over a 10-year period (\$163.7 million per year). The participants in the CP cost share would be approximately \$94.22 per acre over the ten year period.

Under Alternative 1, adjustments would also be made to existing CPs to include benefits to pollinators by practices such as changing the plant species to native grasses or wildflowers and reduction of treatments or using only spot treatments of herbicide and pesticides on site. Monetary benefits to the participant can also be derived by increasing the number of pollinators on a farm and their consequent contribution to the farm productivity, including many benefits as explained in Chapter 3. By selecting Alternative 1, with the combination of a new Pollinator Habitat CP and improvements to existing CPs, it would be unlikely that there would be significant socioeconomic effects due to the small potential size of the program in comparison to other CRP CPs, even though there would be anticipated cost increases associated with vegetative planting mix changes and changes to the application and amounts of agricultural chemicals. When compared to Alternative 2 and the No Action Alternative, Alternative 1 would result in the most societal benefits, but would have the greatest amount of associated costs, at the program level and at the operator level.

4.11.10.4 Alternative 2

By selecting Alternative 2, only the existing CPs would be modified to benefit native pollinators. The benefits could include changes in plant species to native grasses or wildflowers or reduction of treatments or spot treatment of agricultural chemical use. This alternative would require management practices to be adjusted to be pollinator friendly and would not incur any PAYGO budgetary compensations that may impact services to other CRP programs or services. The monetary benefits associated with these types of practices would result from the increased numbers of pollinators on a farm and their contribution to the farm productivity. The economic benefits associated with pollinators are explained in detail in Chapter 3. It would be unlikely that by selecting Alternative 2 that there would be significant socioeconomic effects. When compared to the No Action Alternative and Alternative 1, Alternative 2 would have greater

benefits and more costs than the No Action Alternative, but both less benefits and less costs than Alternative 1.

4.12 ENVIRONMENTAL JUSTICE

4.12.1 Significance Criteria

Environmental justice is achieved when everyone, regardless of race, culture, or income, enjoys the same degree of protection from environmental and health hazards and has equal access to the decision-making process. Significant environmental justice impacts would result if access to decision-making documents were denied or if any adverse environmental or health effects occurred from an action that would disproportionately affect minority or low-income populations.

4.12.2 Provision 1 (National Conservation Initiatives)

4.12.2.1 *Background/Methodology*

The FSA actively ensures that minority and low income populations have access and information about FSA programs. The FSA maintains an Outreach and Education Program (OEP) providing information and technical assistance about FSA programs to farmers and ranchers. The OEP has a goal of increasing participation of underserved populations, including limited resource farmers and socially disadvantaged farmers. Additionally, OEP staff work with States' staff to encourage socially disadvantaged groups to participate in local governance activities, which is key to ensuring meaningful participation of those groups in FSA programs. OEP staff also work with community groups, colleges, minority associations, and tribally-controlled colleges to provide technical assistance, training, and enhanced program delivery to those populations.

The FSA also has an Office of Civil Rights, which includes the Compliance and Program Analysis Branch. The Compliance Branch ensures nondiscrimination in program delivery, including CRP. The Compliance and Program Analysis Branch is required to review and approve each Civil Rights Impact Analysis (CRIA), which is required prior to issue of any significant new FSA regulation. CRIA are required by USDA Directive 4300-4.

Analysis of the potential impacts to minority and low income populations by the alternatives proposed to implement this provision is qualitative. The Environmental Justice analysis of this provision determines if there would be disproportionate adverse effects to these populations from all potential actions analyzed within this document.

4.12.2.2 *No Action Alternative*

National Conservation Priority Areas and payment incentives designed to encourage enrollment within these areas would continue as currently configured under the No Action Alternative. Additionally, CREPs and initiatives implemented since the 2002 Farm Bill would continue unchanged as part of this alternative. The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status.

The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. This is based upon several findings as follows. Because CRP eligibility criteria are established by regulatory means, there would be no subjective component inherent in it to obscure the fair and equitable distribution of funds. Further, the use of State Committees or State offices to review local decisions made at the county office level aids in the checks and balances and helps to prevent discriminatory behavior or favoritism. County FSA committees are required to ensure that all groups of producers are represented on the county committee, including females and minorities. The county committee will recommend a county committee advisor (previously termed “minority advisor”) as necessary to ensure that the interest of under-represented producers are fairly represented. Deadlines for submission of program applications are uniform for all applicants and any extension of deadlines would be established by the Deputy Administrator for Farm Programs rather than individual states or counties establishing deadlines, potentially in an arbitrary and capricious manner. Further, rules and program information are widely distributed in the Federal Register, national and local press releases, websites, and newsletters. The FSA has also contracted with cooperatives and land grant universities to provide technical assistance to minority farmers in completing applications for loans and for servicing. Finally, FSA has rules and procedures for producers to appeal adverse decisions. As such, the No Action Alternative would not result in highly adverse nor disproportionate impacts to minority or low income populations, thus, no environmental justice inequity would occur.

When compared to Alternative 1, the No Action Alternative would have less probability of creating negligible adverse impacts, since the No Action Alternative would not create a new PAYGO condition that would require a redistribution of budget funds for any new initiatives. The No Action Alternative and Alternative 2 would result in a similar outcome of no significant disproportionate impacts since existing mechanisms for conservation initiatives would remain with only a reduction in the cap for the wetland initiative under Alternative 2. Since the wetland initiative has not reached its current acreage cap, this reduction would redistribute acres back into the pool of authorized acres.

4.12.2.3 Alternative 1

Under Alternative 1, three new National conservation initiatives would be created with a combined acreage limitation of 1.5 million acres under the 32 million acre CRP acreage limitation (4.7 percent of acres). Funding for these new initiatives would require a PAYGO offset in the USDA budget. The PAYGO redistribution would be conducted to ensure it would not result in secondary disproportionate adverse impacts to minority or low-income populations.

The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, Alternative 1 would not result in to minority or low income populations, thereby, not creating an environmental justice inequity.

When compared to the No Action Alternative and Alternative 2, Alternative 1 would have a greater probability of creating negligible adverse impacts due to the new PAYGO offset for new initiatives; however, the PAYGO offset would be conducted to ensure no secondary adverse

impacts would occur to minority or low-income operators, thereby ensuring no significant disproportionate nor highly adverse impacts to environmental justice populations would occur.

4.12.2.4 Alternative 2

Under Alternative 2, existing mechanisms to address State, Regional, and National conservation initiatives would be maintained with a reduction in the acreage limitation for wetland restoration initiatives. The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, Alternative 2 would not result in highly adverse nor disproportionate impacts to minority or low income populations, thereby, no environmental justice inequity would occur.

When compared to the No Action Alternative, Alternative 2 would have similar effects as the No Action Alternative, with the exception of more acres to be potentially enrolled under the General Signup. Alternative 2 would have a lower probability of negligible adverse impacts than Alternative 1 due to the PAYGO offset.

4.12.3 Provision 2 (Maximum Enrollment)

4.12.3.1 Background/Methodology

Analysis of the potential impacts to minority and low income populations by the alternatives proposed to implement this provision is qualitative. The Environmental Justice analysis of this provision determines if there would be disproportionate highly adverse effects to these populations from all potential actions analyzed within this document. For additional discussion on the FSA programs related to Environmental Justice, see Section 4.12.2.1.

4.12.3.2 No Action Alternative

Under the No Action Alternative, the CRP acreage cap limitation would remain at current levels of 32 million acres with 27.5 million acres apportioned for General Signup and 4.5 million to Targeted Signups. This alternative would not result in disproportionate impacts to minority or low income populations since the existing mechanism to qualify operators for enrollment would be used. Those mechanisms have been fully analyzed and found to be in compliance with nondiscriminatory program delivery. The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status.

Under the No Action Alternative all eligible operators would have the same eligibility criteria for the enrollment of new acres into CRP. The Draft CRIA (FSA 2008d) indicates that, *“The eligibility criteria are sound and reasonable for the distribution of Federal funds. Because the criteria for participation are being established by regulatory means, there would be no subjective component inherent in it to obscure the fair and equitable distribution of funds. Further, use of the State committees or State offices to review local decisions made at the county office level aids in the checks and balances and helps to prevent discriminatory behavior or favoritism. In addition, county FSA committees are required to ensure that all groups of producers are*

represented on the county committee, including females and minorities. The county committee will recommend a county committee advisor (previously termed “minority advisor”) as necessary to ensure that the interest of under-represented producers are fairly represented. This includes the appointment of a tribal representative as a county committee advisor to represent Native American interests in the county or area.”

The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. For additional discussion on the findings of the draft CRIA, see Section 4.12.2.2. As such, the No Action Alternative would not result in highly adverse nor disproportionate impacts to minority or low income populations, thereby, not creating an environmental justice inequity.

When the No Action Alternative is compared with Alternative 1, the anticipated effects of the two alternatives would be similar given the same overall acreage limitation would be applicable. Alternative 2 would have the potential to create adverse effects to certain environmental components and socioeconomic conditions, which would be greater than the effects anticipated from the No Action Alternative; however, those effects would be applicable to all operators equally.

4.12.3.3 Alternative 1

Under Alternative 1, the CRP acreage cap limitation would be 32 million acres with 24 million acres apportioned for General Signup and eight million acres for targeted signups. Given the overall acreage limitation would be the same for Alternative 1 and the No Action Alternative, effects to minority and low-income populations would be similar. The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, Alternative 1 would not result in disproportionate nor highly adverse impacts to minority or low income populations, thereby, no environmental justice inequity would occur.

The anticipated effects to minority and low-income populations would be similar for Alternative 1 and the No Action Alternative, which would be negligible and not significantly negative; however, when compared to Alternative 2, Alternative 1 would result in less adverse effects.

4.12.3.4 Alternative 2

Under Alternative 2, the CRP acreage cap limitation would be 24 million acres with 20 million apportioned for General Signup and four million for Targeted Signups. Alternative 2 would result in adverse effects to some environmental components from the reduction of the overall acreage limitation. Some of these effects could be significant at the local scale, but not significantly negative at the national scale of the program. Given that all eligible operators would have an equal chance to participate in the CRP, and that expiring acres is on a set contractual schedule, it would not be anticipated that one group of operators would bear a disproportionate burden of the adverse effects. The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not disproportionately nor highly adversely impact minorities, women, or persons with disabilities. As such, Alternative 2 would not result in

significant disproportionate impacts to minority or low income populations, and no environmental justice inequity would occur.

Alternative 2 would have the greater potential for adverse effects than either of the other alternatives due to the reduction in the overall acreage limitation for CRP; however, since the reduced acreage limitation is applicable to all operators, no significant disproportionate effects would be anticipated from any alternative.

4.12.4 Provision 3 (Alfalfa Crop History)

4.12.4.1 Background/Methodology

Analysis of the potential impacts to minority and low income populations by the alternatives proposed to implement this provision is qualitative. The Environmental Justice analysis of this provision determines if there would be disproportionate highly adverse effects to these populations from all potential actions analyzed within this document. For additional discussion on the FSA programs related to Environmental Justice, see Section 4.12.2.1.

4.12.4.2 No Action Alternative

Under the No Action Alternative, alfalfa acreage in rotation with other crops would be considered an eligible commodity if the rotation occurred in the years from 1996 to 2001 as part of six year cropping history. All eligible operators would have an equal opportunity to enroll acreage under this Provision in combination with the overall CRP acreage limitation. The anticipated amount of eligible acres would be small in comparison to total cropland planted in other eligible commodities within the U.S. The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status.

The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not highly adversely nor disproportionately impact minorities, women, or persons with disabilities. For additional discussion on the findings of the draft CRIA, see Section 4.12.2.2.

When the No Action Alternative is compared to Alternatives 1 and 2, the anticipated effects would be similar given the small amount of acreage eligible under this provision; however, additional acreage could be eligible under the No Action Alternative compared to the other alternatives since no particular rotation interval would be required. As such, the No Action Alternative would not result in highly adverse nor disproportionate impacts to minority or low income populations that would cause an environmental justice inequity.

4.12.4.3 Alternative 1

Alternative 1 would allow alfalfa grown alone in rotation with an eligible commodity to meet CRP crop history if the rotation interval is eight years, consisting of at least six years of alfalfa and two years of an eligible commodity, with the rotation occurring within 2002 to 2007. All eligible operators would have an equal opportunity to enroll acreage under this provision in combination with the overall CRP program acreage limitation. The anticipated amount of eligible acres would

be small in comparison to total cropland planted in other eligible commodities within the U.S that would meet other crop history requirements.

The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008b) has determined that CRP would not highly adversely, nor disproportionately impact minorities, women, or persons with disabilities since all eligible operators would have equal opportunity to enroll acreage. As such, Alternative 1 would not result in significant highly adverse or disproportionate impacts to minority or low income populations or environmental justice inequity.

When Alternative 1 is compared to the No Action Alternative and Alternative 2, the effects would be similar given the small amount of acreage eligible under this provision; however, fewer acres would be eligible than the No Action Alternative that has no rotation interval requirement, but possibly more than Alternative 2, which has a stricter rotation schedule.

4.12.4.4 Alternative 2

Alternative 2 is the same as Alternative 1, except the crop history rotation interval would be 12 years consisting of at least 10 years of alfalfa and two years of an eligible commodity, with the rotation occurring within 2002 to 2007. The anticipated amount of eligible acres would be small in comparison to cropland planted in other eligible commodities within the U.S. that would meet other CRP crop history requirements. When Alternative 2 is compared to the No Action Alternative and Alternative 1, the anticipated effects would be similar given the small amount of acreage eligible under this provision; however, Alternative 2 may qualify less acreage as eligible for CRP than under Alternative 1 and the No Action Alternative due to the stricter rotation requirement.

The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not highly adversely nor disproportionately impact minorities, women, or persons with disabilities. As all eligible operators would have an equal opportunity to enroll acreage under this provision, Alternative 2 would not result in significant highly adverse or disproportionate impacts to minority or low income populations, thus no environmental justice inequity would occur.

4.12.5 Provision 4 (County Acreage Limitation Exception)

4.12.5.1 Background/Methodology

Analysis of the potential impacts to minority and low income populations by the alternatives proposed to implement this provision is qualitative. The Environmental Justice analysis of this provision determines if there would be disproportionate, highly adverse effects to these populations from all potential actions analyzed within this document. For additional discussion on the FSA programs related to Environmental Justice, see Section 4.12.2.1.

4.12.5.2 No Action Alternative

Under the No Action Alternative, the exception to enroll acreage above the 25 percent county cropland cap could occur on any acreage enrolled under CRP and WRP found to not adversely affect the local economy and in areas where operators have difficulties complying with HEL conservation requirements for active cropland. Acreage could also be excepted for shelterbelts

and windbreaks CPs as well. No additional county cropland limit cap would be imposed. As indicated previously, only 24 counties in the U.S. currently have greater than 25 percent of their cropland acreage enrolled in CRP and WRP. Section 4.11 indicated that studies show, over the long-term, CRP enrollment has not contributed to or exacerbated adverse local socioeconomic conditions, even in counties with a high percentage of cropland enrolled. Since this provision has not created adverse environmental or socioeconomic conditions in the past, continuation of the current practices at the 32 million acre program limit would also not likely create adverse effects; especially since the amount of acreage excepted across the entire program is small (approximately 1.2 percent of total CRP currently enrolled acres).

The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not highly adversely nor disproportionately impact minorities, women, or persons with disabilities since all operators have an equal opportunity to enroll. For additional discussion on the findings of the draft CRIA, see Section 4.12.2.2. As such, the No Action Alternative would not result in highly adverse nor significant disproportionate impacts to minority or low income populations that would cause an environmental justice inequity.

4.12.5.3 Alternative 1

Alternative 1 would allow county governments to exercise yes/no authority to exceed the 25 percent county cropland acreage cap, but only for additional CREP or Continuous Signup enrollments, with no additional cap imposed. Other requirements as described for the No Action Alternative would apply to Alternative 1 as well. Under the 32 million CRP acreage restriction, this alternative would limit the potential excepted acres to a smaller amount than current conditions, given that only Targeted Signup acres would be eligible. This alternative could except more cropland acreage for enrollment than Alternative 2, which would set the new county acreage cap at 50 percent of the county cropland.

The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities since all operators have an equal opportunity to enroll. As such, Alternative 1 would not result in significant anticipated disproportionate impacts to minority or low income populations that would create an environmental justice inequity.

4.12.5.4 Alternative 2

Alternative 2 would be the same as Alternative 1, but would allow county governments to exercise yes/no authority to exceed the 25 percent county acreage cap for additional CREP or Continuous Signup enrollments with a new limit of no more than 50 percent. Alternative 2 would potentially provide for fewer acres to be excepted than the other alternatives considered, given the new county cap limitation combined with Targeted Signup acreage limitation.

The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities since all operators have an equal opportunity to enroll. As such, Alternative 2 would not result in significant highly adverse disproportionate impacts to minority or low income populations that would create an environmental justice inequity.

4.12.6 Provision 5 (Conservation Plan Management)

4.12.6.1 Background/Methodology

Analysis of the potential impacts to minority and low income populations by the alternatives proposed to implement this Provision is qualitative. The Environmental Justice analysis of this Provision determines if there would be disproportionate adverse effects to these populations from all potential aspects analyzed within this document. For additional discussion on the FSA programs related to Environmental Justice, see Section 4.12.2.1.

4.12.6.2 No Action Alternative

Under the No Action Alternative, Conservation Plan management is expected and MCM is required for all individual CPs on all contracts signed after FY 2004, and is voluntary for contracts accepted before that year. Mid-contract management has been excepted on certain CPs in some states based on local conditions. Mid-contract management activities are cost-shared at a 50 percent rate. This provision is applied equally to all operators across all contracts signed after FY 2004. The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status.

There could be a higher burden on low-income operators to complete MCM activities; however, that burden is off-set through the cost-share and technical assistance provided by the FSA and conservation specialists.

The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. For additional discussion on the findings of the draft CRIA, see Section 4.12.2.2. As such, the No Action Alternative would not result in significant anticipated disproportionate impacts to minority or low income populations, thereby, not creating an environmental justice inequity.

When compared to Alternatives 1 and 2, the No Action Alternative could create a greater burden on low-income operators through the mandatory MCM. The burden would be off-set by the cost share and technical assistance.

4.12.6.3 Alternative 1

Alternative 1 would require Conservation Plan management throughout the term of the contract with MCM as stipulated in the Conservation Plan. Mid-contract management would not be required on an individual CP basis. Alternative 1 provides greater flexibility for only undertaking management tasks as may be applicable to local conditions, which may or may not require MCM activities. If MCM is not included in the Conservation Plan, there could be a reduced monetary burden on low-income operators, which would be a short-term benefit to those operators; however, all operators are responsible for ensuring successful CP covers; and MCM activities approved as part of the Conservation Plan would have a cost-share of 50 percent.

The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, Alternative 1 would not result in significant anticipated disproportionate impacts to minority or low income populations, thereby, not creating an environmental justice inequity.

Alternative 1 could create a lower burden on low-income operators when compared to the No Action Alternative and Alternative 2 since mandatory MCM would not be required for all or part of the CPs.

4.12.6.4 Alternative 2

Alternative 2 would require Conservation Plan management throughout the term of the contract with MCM activities to be included in the Conservation Plan. Mid-contract management would be required on certain CPs as determined by the individual State Technical Committees. Alternative 2 provides greater flexibility over the No Action Alternative, but less flexibility than Alternative 1, given the inclusion of State Technical Committee mandatory MCM CPs. If MCM is not required, this could reduce the monetary burden on low-income operators, which would be a short-term benefit to those operators; however, all operators are responsible for ensuring successful CP covers; and MCM activities approved as part of the Conservation Plan would have a cost-share of 50 percent.

The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, Alternative 2 would not result in significant anticipated disproportionate impacts to minority or low income populations, thereby, not creating an environmental justice inequity.

Alternative 2 would create less burden on low-income operators than the No Action Alternative, but could create a greater burden than Alternative 1, since it would be anticipated that mandatory MCM could be required on certain CPs in certain states.

4.12.7 Provision 6 (Harvesting CRP)

4.12.7.1 Background/Methodology

Analysis of the potential impacts to minority and low income populations by the alternatives proposed to implement this provision is qualitative. The Environmental Justice analysis of this provision determines if there would be disproportionate highly adverse effects to these populations from all potential actions analyzed within this document. For additional discussion on the FSA programs related to Environmental Justice, see Section 4.12.2.1.

4.12.7.2 No Action Alternative

Under the No Action Alternative, haying and grazing activities on CRP would continue as provided for by the 2002 Farm Bill. A rental payment reduction for actual acreage hayed or grazed as it applies to managed, emergency, or limited grazing procedures would be made. As shown in Section 4.11.7, the amount of CRP acres utilized for harvest or grazing are small compared to the overall CRP acres. Recently undertaken NEPA analysis of proposed changes

to the timing, frequency, length of harvest or grazing, and in some cases PNS, of 13 States has found, in general, environmental and socioeconomic effects would be minor, with both beneficial and adverse effects to be highly location and wildlife species dependent. When compared to Alternatives 1 and 2, the No Action Alternative has fewer overall benefits, since it limits prescribed grazing for control of invasive kudzu only.

Currently harvest and grazing provisions were fully analyzed and found to be in compliance with nondiscrimination in program delivery of the 2002 Farm Bill. The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status. Additionally, the draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. For additional discussion on the findings of the draft CRIA, see Section 4.12.2.2. The procedures for harvesting or grazing CRP apply equally to CRP participants with lands enrolled in CPs eligible for harvest or grazing and the same percentage of rental payment reduction is applied to all operators. As such, the No Action Alternative would not result in significant highly adverse disproportionate impacts to minority or low income populations that would create an environmental justice inequity.

4.12.7.3 Alternative 1

Alternative 1 would allow only those CPs currently authorized for harvest and grazing activities for routine grazing and managed harvest. Any change to the PNS, period, length, or frequency of routine grazing and managed harvest requires individual analysis under NEPA by those State Technical Committees desiring those changes. Prescribed grazing to control invasive plant species other than kudzu would be authorized, but not for CPs 23 and 23A, non-grass related CP 25, or CP27, CP31, or CP39 through 41. Prescribed grazing would only occur in accordance with a control plan under the approved Conservation Plan. No payment reduction would be required with prescribed grazing, but a 25 percent rental payment reduction for managed harvest or routine grazing would apply. Alternative 1 could generate greater benefits than the No Action Alternative since prescribed grazing would be expanded to control additional invasive species, but similar benefits to Alternative 2. Further NEPA analysis by the State Technical Committees desiring changes to period, length, or frequency of managed harvest or routine grazing, as well as the PNS, would ensure that changes would not result in significant adverse environmental, socioeconomic, or environmental justice effects.

The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status. Additionally, the draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. The procedures for managed harvesting or routine grazing CRP would apply equally to CRP participants with lands enrolled in CPs eligible for these activities who elect to undertake such harvests, and the same percentage of rental payment reduction would be applied to all operators. As such, Alternative 1 would not

result in significant anticipated disproportionate impacts to minority or low income populations, thereby, not creating an environmental justice inequity.

4.12.7.4 Alternative 2

Alternative 2 would require additional NEPA analysis for any change to CPs, as well as change to the PNS, period, length, and frequency of routine grazing and managed harvest, and/or prescribed grazing. Prescribed grazing would be conducted the same as described for Alternative 1. Payment reductions would be commensurate with the economic value of the activity on a percentage basis related to the percent of the year the authorized activity occurs, currently proposed at 25 percent. Alternative 2 could generate greater benefits than the No Action Alternative, but similar benefits to Alternative 1. Further NEPA analysis by the State Technical Committees to change the CPs authorized for managed harvest and routine grazing, in addition to the other potential changes as described above, would ensure that changes would not result in significant adverse environmental, socioeconomic, and environmental justice effects.

The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status. Additionally, the draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. The procedures for managed harvesting or routine grazing CRP would apply equally to CRP participants with lands enrolled in CPs eligible for these activities who elect to undertake such harvests, and the same percentage of rental payment reduction would be applied to all operators. As such, Alternative 2 would not result in significant highly adverse disproportionate impacts to minority or low income populations that would create an environmental justice inequity.

4.12.8 Provision 7 (NASS Cash Rental Rates)

4.12.8.1 Background/Methodology

Analysis of the potential impacts to minority and low income populations by the alternatives proposed to implement this provision is qualitative. The Environmental Justice analysis of this provision determines if there would be disproportionate adverse effects to these populations from all potential aspects actions analyzed within this document. For additional discussion on the FSA programs related to Environmental Justice, see Section 4.12.2.1.

4.12.8.2 No Action Alternative

Under the No Action Alternative, current mechanisms to determine rental rates would be used. Additionally, Targeted Signup incentives would remain unchanged, while maintenance payments for contracts signed after October 1, 2009 would be reduced to zero for General Signup practices. Geographic shifts in enrolled acreage from now until FY 2012 would occur most likely in response to expiring contracts and associated acreage, not continuation of current rental payment procedures. The distribution in enrolled acreage would differ from that which would likely occur under the action alternatives that would utilize cash rental rates that may be

higher or lower than current rates. The socioeconomic analysis has determined that current enrollment goals would likely be met with continuation of current rental payment procedures as enough financial incentive exists for offerers to enroll. Continuation of current rental payment structure would result in the majority of counties having higher CRP payments than would occur under the action alternatives.

The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status. The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. For additional discussion on the findings of the draft CRIA, see Section 4.12.2.2. As such, the No Action Alternative would not result in significant highly adverse disproportionate impacts to minority or low income populations that would create an environmental justice inequity.

4.12.8.3 Alternative 1

Under Alternative 1, for General Signups after December 1, 2009, annual payment rates would be determined by the updated NASS market dryland and irrigated rental rates with soil productivity adjustments. Incentives for Targeted Signups may be increased to ensure acreage targets are achieved. Maintenance payments would be reduced to zero for General Signups in accordance with procedures effective October 1, 2009.

This change in rates would likely change the geographic distribution of newly enrolled CRP acreage. Based on Table 4.11-9, Virginia, Colorado, New York, Wyoming, Florida, Idaho, Oklahoma, and New Mexico would be anticipated to have CRP enrollment decline by greater than 25 percent based on a 32 million acre CRP limitation. Only New Mexico, as a state population, would be considered a concentrated minority area (57.9 percent population minority). States gaining acres (greater than 50 percent) from the change in rates would be Louisiana, California, Arkansas, Minnesota, Washington, Ohio, Mississippi, Illinois, and Maryland. Of these states, California would be considered a concentrated minority area, while Mississippi, would be considered a concentrated poverty area. Overall the change in rates would affect States containing high minority and low income populations both positively and negatively; however, the effects would not be disproportionate to those populations.

Based on Table 4.11-9 at a 24 million acre CRP limitation, Colorado, Missouri, Virginia, Wyoming, Florida, Idaho, Oklahoma, and New Mexico would be anticipated to have CRP enrollment decline by greater than 25 percent based on Alternative 1. Only New Mexico, as a state population would be considered a concentrated minority area (57.9 percent population minority). States gaining acres (greater than 50 percent) from the change in rates would be Louisiana, California, Arkansas, Minnesota, Washington, Ohio, Mississippi, Illinois, Oregon, Iowa, Tennessee, Indiana, and Maryland. Of these states, California would be considered a concentrated minority area, while Mississippi, would be considered a concentrated poverty area. Overall the change in rates would affect states containing high minority and low income populations both positively and negatively; however, the effects would not be disproportionate to those populations.

Selecting Alternative 1 would increase emphasis on targeted acres by increasing incentive payments for those acres to ensure meeting those targeted acreage caps. As described in 4.11.8.3, rates based on NASS data would need to increase from current LVS levels by slightly more than 20 percent to reach a 4.5 million Targeted Signup acreage goal, and more than 128 percent to reach an eight million acre goal; and could decline by more than nine percent to reach a four million acre goal. This would be anticipated to lead to a shift in geographic distribution of targeted acres; however, that shift would occur over a multi-year period and be a relatively small part of the overall CRP. Alternative 1 when compared to the No Action Alternative would geographically alter the distribution of CRP acres and for the majority of the counties would lower CRP General Signup annual rental payments. Alternative 1 Targeted Signup payments would be higher than those under Alternative 2, since the latter would use NASS rates for Targeted Signup with no additional incentive payments.

The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status. Additionally, the draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, Alternative 1 would not result in significant highly adverse disproportionate impacts to minority or low income populations and no environmental justice inequity would be created.

4.12.8.4 Alternative 2

Under Alternative 2, for all signups (General and Continuous) after December 1, 2009, annual CRP rental payment rates would be determined by the updated NASS market dryland and irrigated rental rates with soil productivity adjustments. Incentives for Targeted Signups would remain the same as the current program. Maintenance payments would be reduced to zero for General Signups in accordance with procedures effective October 1, 2009.

Selecting Alternative 2 would change the mechanism to determine rental rates from existing LVS rates to posted NASS survey rates. This would likely change the geographic distribution of newly enrolled CRP acreage at both a 32 million acre CRP limitation and a 24 million acre CRP limitation. Under Alternative 2, total acreage enrollments would be similar to those anticipated under Alternative 1 because most CRP acreage is comprised of General Signup acres, and payment rates under Alternative 2 would be the same NASS-based rates as those under Alternative 1. Section 4.11.8.4 indicates that targeted acreage goals would likely not be met under this alternative if incentive payments were to remain at current levels and current enrollment goals, however, not by a substantial amount. Compared to the No Action Alternative, Alternative 2 would result in lower CRP rental payments for the majority of counties.

The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status. Additionally, the draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. For additional discussion on the findings

of the draft CRIA, see Section 4.12.2.2. Alternative 2 would be unlikely to result in any adverse impacts to minority or low-income populations since CRP is voluntary and ranking mechanisms for General Signup are largely based on the approved EBI methodology. As such, Alternative 2 would not result in significant highly adverse disproportionate impacts to minority or low income populations that would cause an environmental justice inequity.

Alternatives 1 and 2, when compared to the No Action Alternative would geographically alter the distribution of CRP acres and would be anticipated to reduce annual rental payments across all participants. Alternative 2, when compared to Alternative 1 would generate fewer acres into targeted signups due to lower overall rates; however,

4.12.9 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentive)

4.12.9.1 Background/Methodology

Analysis of the potential impacts to minority and low income populations by the alternatives proposed to implement this provision is qualitative. The Environmental Justice analysis of this provision determines if there would be disproportionate adverse effects to these populations from all potential aspects analyzed within this document. For additional discussion on the FSA programs related to Environmental Justice, see Section 4.12.2.1.

4.12.9.2 No Action Alternative

Under the No Action Alternative, certain incentives would be provided to beginning farmers/ranchers, limited resource farmers/ranchers, and Indian tribes. The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status. For additional discussion on the findings of the draft CRIA, see Section 4.12.2.2. The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, the No Action Alternative would not result in significant anticipated disproportionate impacts to minority or low income populations, thereby, not creating an environmental justice inequity.

When compared to Alternatives 1 and 2, the No Action Alternative provides benefits to fewer potential recipients. Unlike Alternatives 1 and 2, the No Action Alternative does not specifically provide incentives for socially disadvantaged operators.

4.12.9.3 Alternative 1

Selecting Alternative 1 would expand incentives to include existing categories, as well as socially disadvantaged farmers/ranchers. This provision would include a population of approximately 1.1 million socially disadvantaged operators (33.3 percent of total operators) and 0.8 million beginning farmers/ranchers (24.2 percent of total operators). Alternative 1 would expand opportunities for cost share incentive and advance payments for materials and services for minority and low income populations. Alternative 1 would require a PAYGO offset which could potentially reduce services for other existing or potential participants in CRP.

The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status. Additionally, the draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, Alternative 1 would not result in significant anticipated disproportionate impacts to minority or low income populations, thereby, not creating an environmental justice inequity.

Alternatives 1 and 2, when compared to the No Action Alternative, provide incentive benefits to a larger population. Alternative 1, when compared to the No Action Alternative and Alternative 2, would provide benefits to assist in the establishment of successful conservation covers and provide greater upfront assistance on the costs of establishing and maintaining conservation practices.

4.12.9.4 Alternative 2

Selecting Alternative 2 would expand incentives to include existing categories, as well as, socially disadvantaged farmers/ranchers. Similar to Alternative 1, this provision would include a population of approximately 1.1 million socially disadvantaged operators (33.3 percent of total operators) and 0.8 million beginning farmers/ranchers (24.2 percent of total operators); however, the incentives to be provided to these groups would be limited to CPs that are currently eligible for SIPs and would require a PAYGO offset in the USDA budget which could potentially reduce services for other existing or potential participants in CRP.

The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status. Additionally, the draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, Alternative 2 would not result in significant anticipated disproportionate impacts to minority or low income populations, thereby, not creating an environmental justice inequity.

Alternatives 1 and 2, when compared to the No Action Alternative, provide incentive benefits to a larger population. Alternative 2, when compared to the No Action Alternative and Alternative 1, would provide benefits at the initial enrollment of acreage.

4.12.10 Provision 9 (Pollinator Conservation)

4.12.10.1 Background/Methodology

Analysis of the potential impacts to minority and low income populations by the alternatives proposed to implement this provision is qualitative. The Environmental Justice analysis of this provision determines if there would be disproportionate adverse effects to these populations from all potential actions analyzed within this document. For additional discussion on the FSA programs related to Environmental Justice, see Section 4.12.2.1.

4.12.10.2 No Action Alternative

Under the No Action Alternative, pollinator conservation is limited to the general methods described by the NRCS to reduce impacts to pollinators and state initiatives, such as the Michigan SAFE Native Pollinator project. The No Action Alternative would cost participants less for establishment and maintenance in comparison to the action alternatives which would establish more costly vegetation and certain management treatments such as the hand application of herbicides.

The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status. For additional discussion on the findings of the draft CRIA, see Section 4.12.2.2. The draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, the No Action Alternative would not result in significant highly adverse disproportionate impacts to minority or low income populations and no environmental justice inequity would occur.

4.12.10.3 Alternative 1

Under Alternative 1, a new Pollinator Habitat CP would be created that would enroll a maximum 1.6 million acres while existing CPs would be modified to benefit native and managed pollinators. Alternative 1 would provide greater benefits to pollinators than both the No Action Alternative and Alternative 2. Some habitat requirements for pollinators and management required to maintain that habitat are less beneficial for certain other types of wildlife, but as long as the Conservation Plan and applicable standards, provisions, and guidelines are followed, the potential negative environmental impacts would be minimized and not significantly adverse. Alternative 1 would cost participants more to establish and maintain than the other alternatives considered, but given the limited amount of acreage that would be devoted to the new Pollinator Habitat CP, not substantially so.

The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status. Additionally, the draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. Enrollment in the new Pollinator Habitat CP would be voluntary, and the same rules for maximizing benefits of other CPs for pollinators would apply to all participants, with additional costs partially offset by cost share for plants, establishment, and certain management. As such, Alternative 1 would not result in significant highly adverse disproportionate impacts to minority or low income populations thus no environmental justice inequity would occur.

4.12.10.4 Alternative 2

Under Alternative 2, existing CPs would be modified to benefit native and managed pollinators. Similar to Alternative 1, this may negatively impact certain other wildlife, but not at a significantly

adverse level. Alternative 2 would provide greater benefits to pollinators when compared to the and may cost the participant more than the No Action Alternative, but would have fewer benefits than Alternative 1 but cost the participant for establishment and management at levels comparable to Alternative 1.

The Office of Civil Rights has determined that the CRP and its inherent provisions is a voluntary program open to all eligible participants, including minorities, women, and persons with disabilities with no regard of their race, color, national origin, sex, age, disability, or marital/familial status. Additionally, the draft CRIA for the 2008 Farm Bill Interim Rule for CRP (FSA 2008d) has determined that the program would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. Enrollment in CRP is voluntary and the same rules governing pollinators would be applied to all participants. Increased costs to the participant would not be substantial and would be partially offset by cost share. As such, Alternative 2 would not result in significant highly adverse disproportionate impacts to minority or low income populations that would cause an environmental justice inequity.

4.13 RECREATION

4.13.1 Significance Criteria

Overall trends in outdoor recreation participation in the United States have been positive in both the number of participants and the number of participant days. Based on these on-going trends as well as parallel data that can be derived from CRP outdoor recreation effects, impacts to recreational resources would be considered significant if there were long-term reductions in recreational participation or expenditures after implementation of an action and establishment of a new equilibrium.

4.13.2 Provision 1 (National Conservation Initiatives)

4.13.2.1 Background/Methodology

As indicated by numerous research efforts over the life of the CRP (See Section 3.2) both terrestrial and aquatic wildlife have benefited from the program and water quality has improved through reduced sedimentation and pollutant loading of surface waters. Lands enrolled in CRP offer recreational opportunities in the form of wildlife viewing, hunting, fishing, and boating. The analysis of the potential impacts to outdoor recreation posed by the alternatives proposed to implement this provision is quantitative and qualitative.

4.13.2.2 No Action Alternative

Under the No Action Alternative, the current National and State CPA, CREP and initiatives mechanisms would remain unchanged to address National, State, and Regional conservation needs. State and Regional Conservation Initiatives are implemented through Continuous and CREP enrollment procedures that pay participating landowners fixed soil-adjusted rental rates adjusted for the productivity of the three most prevalent soils on the parcels, typically with a premium of 20 percent or much greater under CREP initiatives.

Over time, direct economic benefits associated with wildlife and CRP have been associated with only wildlife viewing activities and pheasant hunting, which originated with Feather, Hellerstein, and Hansen (1999) whose study was based on enrollment as of 1992. This study estimated a wildlife value from wildlife viewing of \$347.0 million per year, from pheasant hunting at \$80.0 million per year, and from freshwater-based recreation at \$39.6 million per year. Sullivan *et al.* (2004) updates these values with an analysis that continues through enrollments as of 2000. The latter found that wildlife viewing benefits accrued from CRP has increased to \$650.0 million per year and that pheasant hunting benefits had increased to \$87.0 million per year. Hansen (2007) provides the most recent estimates of the overall economic benefits associated with CRP, including recreation, though the estimates are incomplete and understate the full value of measurable benefits. Hansen (2007) estimated similar total values for benefits with slight changes in the geographic distribution. This analysis follows previous studies, which due to lack of available data, have excluded some substantial recreational uses of CRP acres, such as large game hunting and waterfowl hunting. Hansen's analyses were based on CRP enrollment as of August 2006.

Overall, wildlife and water benefits have increased through time as the CRP focus has shifted from primarily soil conservation to a multi-goal strategy that would equally consider wildlife and water quality values. The inclusion of specific initiatives targeting certain species or habitats has created greater local benefits, while still overall increasing benefits to wildlife. Anecdotal evidence indicates that CRP acres are often used as part of private hunting leases for most game species in the U.S., including waterfowl, white-tail deer, pheasants and other grassland bird game species. This is borne out by the number of real estate interests advertising hunting leases on or near CRP acres. Additionally, Bangsund, Leistritz, and Hodur (2002) evaluated data collected on pheasant, waterfowl, and deer hunting in North Dakota on hunters in pre-CRP (1982-1986) and post-CRP periods (1996-2000), finding that the number of hunters within North Dakota increased, which was directly attributable to CRP acreage. They estimated that 90 percent of the increase in pheasant hunters was directly attributable to CRP, while for waterfowl and deer hunting, those values were 60 percent and 70 percent, respectively. They found that recreational hunting revenues did not fully compensate for lost agricultural revenues on CRP acres; however, as they acknowledge, they did not take into account benefits associated from non-consumptive wildlife use or the value of conservation benefits. The combination of soil conservation, which improves water quality through reduced erosion, and wildlife habitat enhancement CPs have created greater opportunity for both consumptive (e.g., hunting) and non-consumptive (e.g., wildlife watching, boating) outdoor recreation.

Since the current CRP, as analyzed under the No Action Alternative, provides wildlife and water quality benefits that positively affect outdoor recreation, there would be no anticipated changes from the baseline condition, and no significant negative impacts to recreation would therefore occur. The No Action Alternative would result in impacts similar to the action alternatives as the overall number of acres authorized for enrollment would be the same, but certain recreation associated with high priority critical wildlife habitat or water quality would be more greatly enhanced on a regional basis under Alternative 1. but this would involve a relatively small amount of acreage devoted to new initiatives. Alternative 2 with the reduction in the wetland initiatives acreage cap would potentially decrease aquatic based recreation or recreation

associated with waterfowl and a corresponding increase in terrestrial recreation, but the involved acreage would be minor. No significant negative impacts to recreation would occur under the No Action Alternative.

4.13.2.3 *Alternative 1*

Selecting Alternative 1 would result in the implementation of three new National-level Initiatives with a maximum combined acreage limitation of 1.5 million acres to be enrolled during FY 2010 to FY 2012, with an apportionment of 0.5 million acres per year. Under this alternative, there would be no monetary cap; however, funding for these initiatives would be PAYGO and must come from another area of the USDA budget (e.g., CRP). Selecting Alternative 1 would create focus on water quality through protection of waters and reduced soil erosion from HEL and on critical wildlife habitat needs.

Alternative 1 would result in minor benefits to outdoor recreation, which would be somewhat offset by the required redistribution of funding, which may create adverse secondary effects. By selecting Alternative 1, there would be the potential for positive outdoor recreation effects; however, the effects would be limited based on the limited acreage enrollment for these new initiatives. By creating long-term benefits to surface water quality, Alternative 1 would positively influence freshwater based recreation activities through cleaner surface waters, which provide greater opportunities for recreational boating and for freshwater fishing if fish numbers increase due to improved water quality. The new critical habitat initiative would create positive societal non-monetary benefits through the continued existence of any declining wildlife species. Additionally, there could be small, local positive monetary benefits, in the longer term from eco-tourism activities (e.g., rare bird sighting tours as part of the Gulf Coast Birding Trail), if the critical habitat initiative were to increase the numbers of specific declining species. Other outdoor recreation benefits could accrue on newly enrolled acres if those acres were part of larger wildlife corridors or generally increased surface water quality over a larger watershed. Otherwise, general outdoor recreation benefits would be local and primarily minor. Alternative 1, when compared to the No Action Alternative and Alternative 2, would provide more targeted benefits than the other alternatives considered, but maintain recreation values similar to these other alternatives. No significant negative impacts to recreation would occur from the implementation of Alternative 1.

4.13.2.4 *Alternative 2*

Alternative 2 would maintain the current measures to address conservation needs but would reduce wetland initiatives involving a maximum 0.75 million acres. Alternative 2 would create similar effects to the No Action Alternative but would slightly reduce wetland associated recreation such as boating, wildlife viewing, fishing, or hunting. As of October 2009, approximately 223,000 acres were enrolled in the affected wetland initiatives. The acreage involved would be minimal which would likely create minor, adverse effects.

These adverse effects would be most directly related the characteristics and importance of wetland habitats in major flyways. Reynolds *et al.* (2007) estimated that the CRP resulted in an additional two million ducks per year from the Prairie Pothole Region of the U.S. between 1992 and 2004, when compared to an absence of CRP. This was estimated from approximately 0.2

million acres of cropped wetlands and 0.6 million acres of non-cropped wetland directly impacted by CRP cover practices within the region (Reynolds *et al.* 2007). Additionally, when compared across international boundaries of the prairie pothole region, the U.S. has approximately 46 percent more puddle ducks per pond than Canada, indicating that the U.S. has become a net exporter of ducks within the region since the advent of CRP (Delta Waterfowl 2009).

According to the USFWS (2008b), waterfowl hunters account for approximately 10 percent of all hunters, with seven percent of all hunting trip related expenditures and six percent of hunting related equipment expenditures. In the 2006 National Hunting Survey, the USFWS estimated that there were approximately 1.3 million waterfowl hunters in the U.S. (USFWS 2008b). The USFWS also estimated that waterfowl hunters in 2006 spent approximately \$900.2 million, which generated a total industry output of \$2.3 billion. Comparatively, waterfowl hunters spent on average \$689 annually on waterfowl hunting with an estimated 10 days per year (\$69 per day of expenditures), while all hunters in the U.S. spent \$1,069 over 18 days per year (\$59 per day) (USFWS 2008b). A decline in the number of ducks within the U.S. could reduce the number of hunting days for waterfowl hunters creating a decline in expenditures; however, it would be highly dependent on annual climate conditions and geographic location. If a decline in wetland acres decreased the population of ducks to the point that the number of hunting days on average declined by one day across all waterfowl hunters, this could result in a 10 percent loss of expenditures,; which would likely not occur under Alternative 2. Since the acreage involved would be minimal and dispersed across the country, no significant impact would occur.

Alternative 2 would have similar benefits to recreation as the No Action Alternative but potentially fewer benefits to regional recreational values than could occur under Alternative 1. The reduction in the wetland initiative under Alternative 2 could shift more acreage to CPs that would provide terrestrial-based recreation opportunities when compared to the No Action Alternative and Alternative 1.

4.13.3 Provision 2 (Maximum Enrollment)

4.13.3.1 Background/Methodology

Overall, acreage in CRP has generated large wildlife and water quantity benefits. As discussed in Section 4.2.3, acreage enrolled in under General Signups versus Targeted Signups usually include larger continuous parcels (i.e., more whole field or whole farm contracts versus field buffers, etc.). These areas of more continuous habitat most often provide greater overall benefits to wildlife species than would acres enrolled in small more linear practices (Clark and Reeder 2007); however, smaller targeted acreage can provide high local benefits which creates “more bang for the buck” (Aillery 2006; Hansen and Hellerstein 2006; Lambert *et al.* 2007). The analysis of the potential impacts to outdoor recreation posed by the alternatives proposed to implement this provision is quantitative and qualitative.

4.13.3.2 No Action Alternative

Under the No Action Alternative, the CRP acreage cap would be maintained at the 32 million acre maximum limit, consisting of 27.5 million acres for General Signup and 4.5 million acres for

Targeted Signup. Under the No Action Alternative, wildlife benefits generated by CRP, which have been determined to be substantial, would be continued. As mentioned in Section 3.13, Hansen (2007) estimated wildlife benefits associated from CRP were \$737.0 million per year at an enrollment level of 36.3 million acres (gross average per acre of \$20.30 with a range from \$0.58 to \$55.43 by Farm Production Region [see Table 3.13-5]). Based on the average benefit per acre, the enrolled 32 million acres could generate approximately \$649.6 million in wildlife related benefits under the No Action Alternative. Benefits to recreational values and economy would continue to accrue from now until FY 2012 under the No Action Alternative with no significantly adverse effects. These benefits would be similar to those realized under Alternative 1 since the authorized program limit would be the same, but would be more beneficial than Alternative 2, which would reduce the program authorized acreage.

4.13.3.3 Alternative 1

Selecting Alternative 1 would set the CRP acreage limitation at 32 million acres, the same as the No Action Alternative, but apportioning 24 million acres for General Signup and eight million acres for Targeted Signups. Selecting Alternative 1 would result in similar outdoor recreation benefits associated with CRP as the No Action Alternative. As mentioned previously, certain partial field practices under Targeted Signup also have extensive local wildlife benefits, depending on surrounding land uses. As the proportion of General Signup acres declines, it would be anticipated that there would be more localized benefits from the initiatives and other Continuous Signups (e.g., river basin wide CREPs).

Alternative 1 would create outdoor recreation benefits similar to the No Action Alternative since the same number of program acres would be authorized, but more than Alternative 2, given the proposed reduction in total CRP acreage. No significant negative impacts would occur from implementing Alternative 1.

4.13.3.4 Alternative 2

Selecting Alternative 2 would set the CRP acreage limitation at 24 million acres, apportioning 20 million for General Signup and four million acres for Targeted Signups, a reduction of 8.0 million acres from compared to both the No Action Alternative and Alternative 1. This would result in a substantial decline in the estimated value of wildlife benefits. The reduced acreage cap could generate a decline of \$81.2 million to \$142.9 million in wildlife benefits, thereby substantially reducing overall wildlife benefits from 20.9 percent to 36.7 percent from the \$737 million estimated by Hansen (2007). Alternative 2 provides the least amount of outdoor recreation benefits when compared to the other two alternatives. Significant negative impacts may occur on a local level to recreation opportunities from the implementation of Alternative 2.

4.13.4 Provision 3 (Alfalfa Crop History)

4.13.4.1 Background/Methodology

In general, CRP CPs that create new wildlife habitat positively increase the benefits to outdoor recreation, both consumptive (e.g., waterfowl hunting) and non-consumptive (e.g., wildlife watching). Wildlife habitat, as established through CRP, generally provides a perennial or multi-year stand of vegetation with limited maintenance practices. This switch from annual species or

high maintenance (frequent disturbance) would improve cover, food, and reduce sediment loading carried in stormwater runoff (Jones-Farrand *et al.* 2007). Additionally, CPs that remove intensively produced crops (e.g., high chemical input crops) provide greater benefits through reduced transport of agricultural chemicals into water supplies, both surface and groundwater (FAPRI 2007). The analysis of the potential impacts to outdoor recreation posed by the alternatives proposed to implement this provision is qualitative.

4.13.4.2 No Action Alternative

Under the No Action Alternative, alfalfa acreage in any rotation with multiyear grasses, legumes, summer fallow and other eligible commodity crops would be considered eligible land for CRP if the rotation occurred in the years from 1996 to 2001.

Overall, this would be anticipated to be a small amount of acreage compared to cropland acreage meeting other CRP crop history requirements. Under this alternative there could be enrollment of acres in geographic areas with limited current CRP enrollment. The increase of CRP acreage in areas with low CRP acreage, but high incidence of alfalfa as a primary crop would benefit local outdoor recreation and overall national outdoor recreation benefits in general. This would be anticipated from the land use change from alfalfa or its crop rotation to CRP CPs, which increases wildlife habitat, decreases erosion, and increases water quality. Overall, the No Action Alternative would generate small positive effects to outdoor recreation. This alternative could qualify more land as eligible for CRP than the action alternatives that have stricter rotation schedules, but this may be offset by not allowing land planted to alfalfa alone in rotation with a commodity as eligible. No significant negative impacts would occur from the selection of the No Action Alternative.

4.13.4.3 Alternative 1

Alternative 1 would allow alfalfa alone in rotation with an eligible commodity to meet CRP crop history if the rotation interval is eight years consisting of at least six years of alfalfa and two years of an eligible commodity with the rotation occurring during 2002 to 2007. Selecting Alternative 1 would result in small increases in outdoor recreation benefits in areas with primary cropping history in alfalfa. It would be anticipated that additional acreage would become eligible as compared to the No Action Alternative; however, this may be offset by the stricter rotation schedule. Alternative 1 would likely qualify more land as eligible than Alternative 2 which would have an even stricter rotation schedule; however, the differences would be minor, and not substantial given the small amount of acreage involved. No significant negative impacts would occur from the implementation of Alternative 1.

4.13.4.4 Alternative 2

Alternative 2 would allow alfalfa grown alone in rotation with an eligible commodity to meet CRP crop history if the rotation interval is 12 years consisting of at least 10 years of alfalfa and two years of an eligible commodity, with the rotation occurring within 2002 to 2007. Selecting Alternative 2 would potentially result in the smallest increases in outdoor recreation benefits compared to the other alternatives, but the involved acreage would not be substantial. No significant negative impacts to recreation would occur from the implementation of Alternative 2.

4.13.5 Provision 4 (County Acreage Limitation Exception)

4.13.5.1 Background/Methodology

In general, CRP CPs that create new wildlife habitat and improve water quality positively increase the benefits to outdoor recreation, both consumptive and non-consumptive. Wildlife habitat, as established through CRP, generally provides a perennial or multi-year stand of vegetation with limited maintenance practices. This switch from annual species or high maintenance (frequent disturbance) would improve cover, food, and reduce sediment loading carried in stormwater runoff (Jones-Farrand *et al.* 2007). Additionally, CPs that remove intensively produced crops (e.g., high chemical input crops) provide greater benefits through reduced transport of agricultural chemicals into water supplies, both surface and groundwater (FAPRI 2007). Such actions would be beneficial to wildlife and enhance outdoor recreational opportunities. The analysis of the potential impacts to outdoor recreation posed by the alternatives proposed to implement this provision is qualitative.

4.13.5.2 No Action Alternative

Currently, no more than 25 percent of a county's cropland may be enrolled in CRP and WRP, except when it is determined there would not be an adverse effect to the local economy, and if operators in the county are having difficulties complying with highly erodible lands conservation requirements for working cropland, and excepting those acres enrolled under shelterbelt and windbreak practices. There is not currently an upward limit on acreage in excess; however, the authority to enroll no more than 32 million acres in the program still applies, and any limitations on the allotment of acres for certain CPs or initiatives per State would not be waived.

Allowing more acreage to be enrolled would result in benefits to wildlife and enhance outdoor recreational opportunities. Implementation of the No Action Alternative benefits recreation similar to that expected under Alternative 1, but would realize more potential benefits than Alternative 2, which except for additional acreage enrolled under CREP or Continuous Signup, caps additional CRP and WRP combined acreage at no more than 50 percent of a county's cropland. There are only 24 counties in the U.S. currently exceeding the cap equating to about 1.2 percent of CRP enrolled acreage, which would not likely substantially change under the action alternatives. Thus, there would be no practical difference between the impacts of the alternatives. No significant negative impacts to recreation would occur from continuation of the existing provisions under the No Action Alternative.

4.13.5.3 Alternative 1

Alternative 1 would allow county governments to exercise yes/no authority to exceed the 25 percent county acreage cap for additional CREP or Continuous Signup enrollments, with no additional cap imposed. This alternative potentially benefits recreation more than Alternative 2 by allowing more land to be enrolled in CRP, but would be more restrictive than the No Action Alternative, which does not limit additional acres only to CREP or Continuous CRP; however, this difference would be negligible because the total number of acres authorized for the program would still be 32 million acres, and the rate at which existing contracts are expected to expire until FY 2012 would allow only a relatively small amount of additional acreage to be enrolled in

the program. Similar to the No Action Alternative, Alternative 1 could create highly localized outdoor recreation benefits. Alternative 1 would have less potential benefits than the No Action Alternative, but greater potential benefits than Alternative 2. No significantly negative impacts would occur from the implementation of Alternative 1.

4.13.5.4 Alternative 2

Alternative 2 would allow county governments to exercise yes/no authority to exceed the 25 percent county acreage cap for additional CREP or Continuous Signup enrollments with a new limit of no more than 50 percent. Similar to the No Action Alternative and Alternative 1, Alternative 2 could create highly localized outdoor recreation benefits; however, that effect would be negligible given the small amount of acreage anticipated. Alternative 2 would potentially generate the fewest benefits, since it would impose an additional cap. No significantly negative impacts would occur from the implementation of Alternative 2.

4.13.6 Provision 5 (Conservation Plan Management)

4.13.6.1 Background/Methodology

This provision could provide enhanced outdoor recreation benefits by ensuring that proper techniques are utilized to create cover practices that become successfully established and achieve their conservation purpose. A greater percentage of successful cover practices has the potential to increase overall wildlife and water quality benefits contributing to recreation through establishment of new habitat, establishing more sustainable habitat, and the maintenance of that habitat over the term of the contract. The analysis of the potential impacts to outdoor recreation posed by the alternatives proposed to implement this provision is qualitative.

4.13.6.2 No Action Alternative

Under the No Action Alternative, Conservation Plan management is expected to occur and MCM is required for all individual CPs on all contracts signed after FY 2004, and is voluntary for contracts accepted before that year. Mid-contract management has been excepted on certain CPs in some states based on local conditions. Mid-contract management activities are cost-shared at a 50 percent rate. By requiring MCM, participants are required to actively manage their cover practices for successful establishment. Such successful establishment increases the value of wildlife habitat, which would increase the potential for wildlife to use that habitat, thereby creating a positive overall benefit for both consumptive and non-consumptive outdoor recreation activities. The Soil and Water Conservation Society along with the Environmental Defense Fund (2008) identified multiple studies that have shown the overall wildlife habitat benefits associated with MCM activities; however, practices that benefit some species would not be so beneficial for others, but as long as the Conservation Plan and applicable standards, provisions, and guidelines are followed, no significant adverse effects to environmental resources would occur and recreational values would be maintained. The No Action Alternative would be more beneficial than Alternative 1, with benefits comparable to Alternative 2. No significantly negative impacts would occur from the implementation of the No Action Alternative.

4.13.6.3 Alternative 1

Alternative 1 would require MCM only if included in the Conservation Plan. Mid-contract management would not be required on an individual CP basis. This provides the greatest flexibility for only undertaking management tasks as may be applicable to local conditions for the particular lands enrolled. Outdoor recreation benefits would be generated under Alternative 1 through the enrollment into CRP; however, those benefits may be reduced if appropriate MCM was not included in the Conservation Plan, but this would be an unlikely occurrence. Alternative 1 could result in reduced outdoor recreation benefits as compared to the No Action Alternative and Alternative 2, as management activities might be reduced; however, there would not be significantly negative impacts to outdoor recreation as the conservation cover would rarely fail.

4.13.6.4 Alternative 2

Under Alternative 2 mid-contract management would be required on certain CPs as determined by the individual State Technical Committees with additional management as determined appropriate by the NRCS conservationist or TSP for inclusion in the Conservation Plan. This alternative provides the most flexibility to undertake MCM activities only as applicable to the particular lands proposed for enrollment but also provides clear guidance to program participants. Long-term, beneficial impacts of Alternative 2 would therefore be similar to the No Action Alternative, but would be greater than for Alternative 1 where active management would be required only when stipulated in the conservation plan. No significantly negative impacts to recreation would occur from the implementation of Alternative 2.

4.13.7 Provision 6 (Harvesting CRP)

4.13.7.1 Background/Methodology

Provision 6 under the 2008 Farm Bill clarifies activities associated with haying, harvesting, and grazing on applicable CPs on enrolled CRP acres. Haying and grazing activities on CRP acreage, when properly used in conjunction with the approved conservation plan, can produce benefits to wildlife through necessary vegetation disturbances that maintain early successional grasslands and control unwanted invasive or noxious species. Activities that would impact conservation covers, wildlife, and water quality have the potential to impact recreational values. Analysis of the impacts of the alternatives considered to implement this provision is qualitative.

4.13.7.2 No Action Alternative

The No Action Alternative would all continuation of current forms of harvest, haying and grazing on authorized CPs with a payment reduction for acres actually harvested. As discussed in detail in Sections 4.1 through 4.8, harvesting and grazing has both potentially beneficial and negative impacts to conservation covers, wildlife, and water quality which could consequently impact recreation through reduced scenic qualities, reduction in wildlife abundance, and loss of water quality by increased sedimentation and pollutant loading of nearby waters.

Recently undertaken NEPA analysis of changing the timing and frequency of managed haying and grazing, and in some cases the PNS, for 13 States found that managed haying and grazing activities would not create significant adverse effects to outdoor recreation. In general, these

activities, when properly managed, can create conditions that enhance wildlife habitat or provide for renewed longevity of some vegetation communities which benefit wildlife. As discussed in Chapter 2, the amount of acreage actually hayed or grazed on CRP since authorization by the 2002 Farm Bill is fairly low. Under the No Action Alternative, it would be unlikely that there would be more than minor changes to historical rates of hay production and grazing on CRP acres based on the existing constraints. As such, there would be no anticipated changes to outdoor recreation from continuing haying and grazing activities, which are generally considered to have a small positive impact for outdoor recreation.

Although producing positive outdoor recreation effects, the No Action Alternative would provide the least benefits when compared to Alternatives 1 and 2 since it would not allow prescribed grazing for control of invasive plant species other than kudzu. No significantly negative impacts would occur from continuation of existing provisions for haying and grazing under the No Action Alternative.

4.13.7.3 Alternative 1

Under Alternative 1 only those CPs currently authorized for harvest and grazing would be authorized for routine grazing (including gleaning) and managed harvest. Any change to the established PNS, period (timing) of routine grazing and managed harvest, length of harvest, and frequency of routine grazing and managed harvest by States would require individual analysis under NEPA by those State Technical Committees desiring changes. Prescribed Grazing for control of invasive plant species other than kudzu would be authorized, but would not be authorized for CP23, CP23A, non-grass related CP25, CP27, CP31, or CP39-41 and if implemented, would occur only in accordance with a control plan included in the Conservation Plan. A payment reduction commensurate with economic value of the activity would be estimated on percentage basis related to the percent of year the authorized activity would occur. No payment reduction would be applied to prescribed grazing for the control of invasive species.

Under Alternative 1, impacts to recreation would be similar to those discussed under the No Action Alternative. Alternative 1 would be more beneficial than the No Action Alternative since it would allow prescribed grazing for control of invasive species other than kudzu, but benefits similar to Alternative 2. Potential negative impacts would be minimized by employing the same BMPs and following NRCS practice standards as described in the biological and water resource sections examining the impacts of this alternative. Managed harvesting (haying) and routine grazing benefits the health and vigor of the vegetative cover, benefitting wildlife, water quality, and outdoor recreation

Requiring additional State-level NEPA analysis of changes to the PNS, timing, and frequency of harvesting and routine grazing ensures potential negative environmental impacts would be determined and addressed on a local scale. A site-specific environmental evaluation would be conducted for particular lands proposed for enrollment in CRP and the potential impacts from haying and grazing would be assessed at that time. No significant negative impacts to recreation would occur under this alternative if the Conservation Plan would be followed and adapted to resource conditions just prior to managed harvest or routine grazing, the CPs authorized for managed harvest or routine grazing do not change, and State-level NEPA would

be completed for any proposed changes to the PNS, timing, and frequency of these activities prior to implementation.

4.13.7.4 Alternative 2

Alternative 2 provisions would be the same as Alternative 1, but differ in that changes to CPs authorized for harvesting or routine and prescribed grazing would be permitted under Alternative 2. Selecting Alternative 2 could create small overall outdoor recreation benefits similar to Alternative 1; the changes to CPs would require additional NEPA analysis by those State Technical Committees desiring such changes. This additional analysis would fully document proposed changes and the potential changes to the outdoor recreation values. No significant negative impacts would occur from managed harvesting or routine grazing if these activities are completed in accordance with existing standards, provisions, and guidelines, and the parameters for conducting these activities are stipulated in the Conservation Plan that would be adapted to resource conditions on the land prior to conducting these activities. Requiring additional State-level NEPA compliance prior to approving changes in which CPs are authorized for managed harvesting or routine grazing, in addition to any changes in the current PNS, timing, or frequency of managed harvesting or routine grazing established for individual States, ensures potential negative impacts to vegetative, wildlife, and water quality, and thus to outdoor recreation, are addressed on a local scale. A site-specific environmental evaluation of lands proposed for enrollment in CRP would be conducted in accordance with FSA procedures, which would identify and address any potential negative impacts posed by managed harvesting or routine grazing. Alternative 2 would be anticipated to have benefits similar to Alternative 1 and greater than the No Action Alternative since prescribed grazing to control additional invasive species other than kudzu would be authorized. No significantly negative impacts would occur from the implementation of Alternative 2.

4.13.8 Provision 7 (NASS Cash Rental Rates)

4.13.8.1 Background/Methodology

Under this provision, CRP rental rates could be changed to reflect more accurately site-specific conditions associated with land values or cash rent values. It is anticipated that there could be changes to the geographical distribution of CRP enrollment under the new signups based on these rate changes. The analysis of the potential impacts to outdoor recreation posed by the alternatives proposed to implement this provision is qualitative.

4.13.8.2 No Action Alternative

Under the No Action Alternative, FSA would continue to use LVS rates for all contracts but remove maintenance incentives associated with annual payments for all contracts under General Signup established after October 1, 2009. These maintenance fees ranged from \$1.00 to \$5.00 per acre per year, depending on the cover practice. Under the No Action Alternative, the current rental rate structure would be maintained. As such, geographic distribution of enrolled acreage from now until FY 2012 would be similar to the current enrollment picture and outdoor recreation benefits would be similar, with geographic shifts more likely related to expiring acreage. These benefits would continue to be a substantial contribution of the CRP to general societal well-being and enjoyment through outdoor recreation opportunities on CRP lands and those lands influenced by the activities occurring on CRP lands. When compared to the action alternatives, the geographic distribution of CRP acres under the No Action Alternative would be different as more offers under General Signup would likely occur in areas where payment rates would be highest; as discussed in Section 4.11.8. Modeling indicates current enrollment goals would likely be met with continuation of the existing rental rate payment structure. The No Action Alternative benefits to recreation would be similar to alternative 1 as General and Targeted Signup enrollment goals under the latter would likely be met, but would be more beneficial than Alternative 2 as the latter would use NASS cash rental rates for all signups with no additional incentives for Targeted Signup practices, which could result in not meeting enrollment goals. No significant negative impacts to recreation would occur under the No Action Alternative.

4.13.8.3 Alternative 1

Under Alternative 1, for General Signups after December 1, 2009, annual payment rates would be determined by the updated NASS market dryland and irrigated rental rates with soil productivity adjustments. Incentives for Targeted Signups may be increased to ensure acreage targets are achieved. Maintenance payments would be reduced to zero for General Signups in accordance with procedures effective October 1, 2009. Selecting Alternative 1 would use NASS survey rates, which have been found to be less than the previously used LVS rates (see Section 4.11.8) in the majority of counties. Under this alternative, it would be anticipated that there would be a change in the geographical distribution of CRP acreage with more incentive to enroll in CRP in areas where NASS rates would be higher than current rates. Modeling as discussed in Section 4.11.X indicates where geographic shifts occur depends in part on the maximum number of acres authorized for enrollment in the program, the schedule of expiring acreage from now until FY 2012, and what initiatives may be in place. From Table 4.11-9 it appears that Colorado, Idaho, New Mexico, Oklahoma, and Wyoming would experience losses of CRP acres, while California, Arkansas, Illinois, Minnesota, and Washington would experience substantial gains in CRP acres at a 32 million acre CRP cap. This would shift outdoor recreation benefits from one geographic area to another.

Modeling also indicates both General and Targeted Signup goals would still likely be met under Alternative 1, which would result in positive effects to outdoor recreation given the generalized benefits of CRP; however, the effect would be balanced by the anticipated change in the geographic distribution, which could create localized benefits for new areas and localized losses

for others with large amounts of expiring CRP acres. As discussed in Section 4.11, it may be that some locations losing CRP enrollments would experience negative impacts to local business sectors that cater to recreation activities and positive impacts to business sectors related to agriculture, and vice-versa for some locations gaining CRP enrollments. But existing evidence (e.g., Sullivan *et al.* 2004) shows that socioeconomic costs and benefits of CRP enrollments have generally netted close to zero total impacts, both locally and nationally. Therefore, no significantly negative impacts to recreation would occur from implementation of Alternative 1.

4.13.8.4 Alternative 2

Under Alternative 2, for all signups after December 1, 2009, annual payment rates would be determined by the updated NASS market dryland and irrigated rental rates with soil productivity adjustments. Incentives for Targeted Signups would remain the same as the current program. Maintenance payments would be reduced to zero for General Signups in accordance with procedures effective October 1, 2009. Alternative 2 would result in a geographic shift in the distribution of CRP acres similar to that of Alternative 1, since the majority of acres in the program would be General Signup and Alternative 1 would use the same rental rates as Alternative 2 for these enrollments. Modeling has indicated, however, that Alternative 2 would not likely meet Targeted Signup goals at the current level of 4.5 million acres since no additional incentive payment would be provided and NASS cash rental rates would be lower than current rates in the majority of counties. The difference would be approximately 0.5 million acres, a relatively small amount. The impacts of Alternative 2, therefore, would not be substantially different from those of the No Action Alternative or Alternative 1. No significantly negative impacts would occur to recreation from implementation of Alternative 2.

4.13.9 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives)

4.13.9.1 Background/Methodology

This provision would define incentives for select populations of operators to encourage enrollment by these populations into CRP; however, these incentives would not create a condition that changes the overall acreage to be enrolled within CRP under the cap or the conservation practices available to CRP participants. Additionally, this incentive does not create a minimum or maximum population to be served, which would set aside certain acres for these populations. Rather CRP is a voluntary program open to all eligible operators. The analysis of the potential impacts to outdoor recreation posed by the alternatives proposed to implement this provision is qualitative.

4.13.9.2 No Action Alternative

Under the No Action Alternative, certain incentives would be provided to beginning farmers/ranchers, limited resource farmers/ranchers, and Indian tribes, which would continue current FSA policies as established by the 2002 Farm Bill. Under the No Action Alternative there would be no anticipated effects to outdoor recreation benefits from this provision since this provision only provides incentives for select populations of operators and does not alter the acreage cap, set aside specific acres to be enrolled by these populations, or change the

conservation practices of CRP. Current participation of these populations is approximately 2.4 percent of total participants within CRP. As a result, no significant effects would result to outdoor recreation since the total population of eligible acres for CRP inclusion remains the same and the active participation by these populations has been small compared to the total population of operators. The No Action Alternative would have a smaller population eligible for these incentives than Alternatives 1 or 2; however, it would not change the population eligible for inclusion in the CRP. No significantly negative impacts would occur from implementation of the No Action Alternative.

4.13.9.3 Alternative 1

Selecting Alternative 1 would expand incentives to include socially disadvantaged farmers/ranchers as well as limited resource and beginning farmers/ranchers and Indian Tribes. The USDA budget would require PAYGO offset which could potentially reduce other program services. Alternative 1 would expand the population eligible for these incentives and provide cost share and advance payments for materials and services for minority and low income populations and beginning farmers/ranchers. This alternative would have little potential to impact outdoor recreation as the total number of acres authorized for enrollment in CRP would not change, but providing incentives would make it more likely that enrollment goals would be met. As a result, no significant effects would result to outdoor recreation since the total number of program acres would remain the same and the active participation by these affected populations has been small compared to the total population of operators. Alternative 1 would be more beneficial than the other alternatives since it would provide the most incentives that make it more likely enrollment goals would be met.

4.13.9.4 Alternative 2

Selecting Alternative 2 would expand incentives to include existing categories, as well as, socially disadvantaged farmers/ranchers, but would limit incentives to CPs that are currently eligible for SIPs, which would require a PAYGO offset in the USDA budget. This alternative would provide more incentives to enroll than the No Action Alternative, but fewer incentives than Alternative 1; however, since the total number of acres for CRP inclusion remains the same and the active participation by these populations has been small compared to the total population of operators, and given the limited amount of acres available to enroll under the 32 million acre cap, no significantly negative impacts to recreation would occur.

4.13.10 Provision 9 (Pollinator Conservation)

4.13.10.1 Background/Methodology

In general, CRP CPs that create new wildlife habitat or enhance it positively increase the benefits to outdoor recreation, both consumptive and non-consumptive. Wildlife habitat, as established through CRP, generally provides a perennial or multi-year stand of vegetation with limited maintenance practices. This switch from annual species or high maintenance (frequent disturbance) would improve cover, food, and reduce sediment loading carried in stormwater runoff (Jones-Farrand *et al.* 2007). Additionally, CPs that remove intensively produced crops (e.g., high chemical input crops) provide greater benefits through reduced transport of

agricultural chemicals into water supplies, both surface and groundwater (FAPRI 2007). The analysis of the potential impacts to outdoor recreation posed by the alternatives proposed to implement this provision is qualitative.

4.13.10.2 No Action Alternative

Under the No Action Alternative, pollinator conservation is limited to the general methods described by the NRCS to reduce impacts to pollinators and State initiatives, such as the Michigan SAFE Native Pollinator goals, which could have minor positive effects on outdoor recreation. Methods such as spot treatments or reductions in agricultural chemicals could improve water quality at a minor level, which could translate into negligible increases in outdoor recreation benefits. The No Action Alternative would provide the least amount of benefits to pollinators from among the alternatives considered, but no significantly negative impacts to recreation would occur from implementation of the No Action Alternative.

4.13.10.3 Alternative 1

Under Alternative 1, existing CPs would be modified to benefit native and managed pollinators and a new Pollinator Habitat CP would be created. The new Pollinator Habitat CP would have a goal of including up to five percent of the enrolled acres in new pollinator friendly habitat. Increasing pollinator habitat would subsequently provide small benefits to outdoor recreation such as increased opportunities for eco-tourism related to pollinators, habitat for a threatened or endangered bird species, or conservation covers with more photogenic appeal. Alternative 1 would provide greater outdoor recreation benefits than the other alternatives, however, not substantially so, given the small amount of acreage devoted to the new Pollinator Habitat CP. No significantly negative impacts to recreation would occur under Alternative 1.

4.13.10.4 Alternative 2

Under Alternative 2, only the existing conservation practices for wildlife, grass, buffer strips, windbreaks, shelterbelts, and trees would be modified to benefit native pollinators. The benefits could include changes in plant species to native grasses or wildflowers or reduction of treatments or spot treatment of agricultural chemical use. Similar to Alternative 1, though at a reduced level, Alternative 2 would provide beneficial effects to pollinators, which could create negligible effects to outdoor recreation benefits. Alternative 2 would provide greater benefits than the No Action Alternative, but fewer benefits than Alternative 1. No significantly negative impacts to recreation would occur from implementation of Alternative 2.

5.0 CUMULATIVE IMPACTS ASSESSMENT

5.1 DEFINITION

Council on Environmental Quality regulations stipulate that cumulative effects analysis consider the potential environmental impacts resulting from “the incremental impacts of the action when added to other past, present and reasonably foreseeable actions regardless of what agency or person undertakes such other actions.” Cumulative effects most likely arise when a relationship exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated. Similarly, actions that coincide, even partially, in time tend to have potential for cumulative effects.

The Conservation Reserve Program is designed to support implementation of long-term conservation measures to improve the quality of ground and surface waters, control soil erosion, and enhance wildlife habitat on environmentally sensitive agricultural land. The program scale is national and includes U.S. territories. For purposes of this analysis, other USDA and Federal programs are the primary sources of information used in identifying past, present, and reasonably foreseeable future actions.

5.2 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

In this SEIS, the affected environment includes the lands eligible for enrollment and currently in CRP and the selective lands encompassed by the new eligibility categories of the 2008 Farm Bill within the U.S. and its territories. For the purposes of this analysis, other USDA Federal conservation programs pertaining to agricultural lands are the primary sources of information used in identifying past, present, and reasonably foreseeable actions.

In addition to CRP, there are several other Federal conservation programs in which privately owned agricultural lands may be qualified. A brief overview of most relevant USDA programs is provided in Table 1.3-1; other USDA and Federal agency programs are provided in Table 5.2-1. The primary goal of many of these programs is to protect specific, privately-owned lands due to their unique or potential ecological, conservation, or recreational value. In addition to Federal programs, States, regions or local governments may also have similar such programs.

The 2008 Farm Bill mandated that by FY 2010 no more than 32 million acres may be enrolled in CRP. A total of 49 percent of CRP acreage will expire within the next three years, when the 2008 Farm Bill is up for reauthorization. In an effort to maintain a vigorous CRP within the congressionally mandated CRP cap without holding a General Signup in FY 2009, in May of 2008 FSA began offering three or five year extensions for 1.5 million acres that fall within the top 30 percent of the EBI, or have an EI of 15 or greater (House Committee on Agriculture 2009). The total contract years are not allowed to exceed 15 years. Those expiring acres that were not in the top 30 percent of the EBI scores or an EI of 15 or greater in a General Signup are not eligible to offer a contract extension. Producers may continue to enroll relatively small, highly desirable acreages, including land that is not extended, into the Continuous CRP.

The rate of loss of acreage in CRP is related to the timing of initial signup in the 1980s with 10 to 15 year contracts, and subsequent signups of the same contract durations. When acres come out of CRP, much of the land is returned to agricultural production. To maintain eligibility for Federal crop insurance and other USDA benefits, agricultural production proposed for these lands must meet highly erodible land and wetland conservation compliance rules. Conservation tillage, including no-till cropping systems, is seen as a way of preserving many of the benefits of CRP, and, at the same time, allowing commodity crop production on highly erodible land. With the limit in extension acres, some loss of CRP benefits to soil, water, and wildlife will undoubtedly occur due to reverting back to annual crop production; however, no estimation of acreage can be deduced.

Table 5.2-1. Other Related Federal Conservation Programs

Program / Administrator	Summary
Agricultural Management Assistance (AMA) Program / NRCS	Provides cost share to agricultural producers who voluntarily incorporate conservation practices onto their land. This program is available in Connecticut, Delaware, Hawaii, Maine, Maryland, Massachusetts, Nevada, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Utah, Vermont, West Virginia, and Wyoming. Eligible land includes cropland, rangeland, grassland, pastureland, non-industrial forestland, and other private land that produces crops or supports livestock. Contracts range from three to 10 years. Landowners must agree to maintain cost-share practices for the life of the contract; eligible structural and/or vegetative conservation practices are determined by the NRCS State Conservationist and State Technical Committee. Federal cost-share rate is 75% of the cost of the eligible practice, not to exceed \$50,000 per participant per fiscal year.
Emergency Watershed Protection Program / NRCS	The objective of this program is to assist sponsors and individuals in implementing emergency measures to mitigate potential hazards caused by natural disasters. Activities include providing both financial and technical assistance for runoff retardation and erosion prevention. This program is divided into two categories, the Traditional Program and the Floodplain Easement Program. The Traditional Program provides funding for activities such as cleaning debris from clogged waterways, restoring vegetation, and stabilizing river banks. The Floodplain easement Program provides for the purchase of easements as an emergency measure for the restoration, protection, and enhancement of the functions of floodplains. The easement gives the NRCS the authority to restore and enhance floodplain functions and values, NRCS may pay up to 100% of restoration costs. Landowners retain several property rights and may include managed timber harvest, and periodic haying or grazing as determined by the NRCS.
Cooperative Conservation Partnership Initiative (CCPI) / NRCS	A voluntary conservation initiative that combines conservation practices with specific partner programs to provide assistance to private land owners. Eligible programs include: EQIP, WHIP, and CSP. Owners and operators of agricultural and nonindustrial private forests, and are eligible for EQIP, WHIP, or CSP may apply for financial assistance. The land must be within an approved CCPI project area.

Table 5.2-1. Other Related Federal Conservation Programs
(cont'd)

Program / Administrator	Summary
Forest Legacy Program / USFS & State Governments	This program, in partnership with States, is designed to encourage the protection of privately owned forests. The program encourages and supports acquisition of conservation easements that restrict development, require sustainable forestry practices, and protects other values. Landowners prepare a multiple resource management plan; the Federal government may fund up to 75% of project costs, with the remaining 25% coming from State, local or private sources. Goals of the Forestry Legacy Program include protection of wildlife, habitat, biodiversity, TES, water quality, wetlands, riparian buffers, and recreational areas.
Landowner Incentive Program (LIP) / USFWS	Provides Federal grant funds to protect and restore habitats on private lands in order to benefit Federally listed, proposed or candidate species and other species States determined to be at risk. Grant funds may be used to provide technical and financial assistance to private landowners for habitat protection and restoration.
Healthy Forests Reserve Program / NRCS	<p>A voluntary program for the purpose of restoring and enhancing forest ecosystems to promote the recovery of threatened and endangered species; improve biodiversity; and enhance carbon sequestration.</p> <p>In order to be eligible, the land restored would enhance or measurably increase the likelihood of recovery of a threatened or endangered species, improve biological diversity, or increase carbon sequestration. Landowners who enroll in the program and restore or improve their land for TES habitat avoid future regulatory restrictions on the use of that land protected under the ESA. The owner may elect:</p> <ul style="list-style-type: none"> • a ten-year cost-share agreement and receive 50% conservation practice cost; • a 30-year easement and receive 75% of the easement value of the enrolled land and 75% of the average cost for conservation practice installment; or • a 99-year easement and receive 100% of the easement value of the enrolled land and 100% of the conservation practice installation cost.
Coastal and Estuarine Land Conservation Program / NOAA	The purpose of this program is to protect coastal and estuarine lands that are deemed important for their ecological, conservation, recreational, historical, or aesthetic values. The program provides Federal matching funds to States for the purchase significant coastal or estuarine lands, or conservation easements on such lands from willing private land owners within a State's coastal zone or coastal watershed boundary.
Highlands Conservation Act / U.S. Department of the Interior (USDOI) & USFS	The purpose of this Act is to recognize the significance of water, forest, agricultural, wildlife, recreational, and cultural resources of the Highlands region to the U.S. The Act assists the States of Connecticut, New Jersey, New York, and Pennsylvania with the protection of land and natural resources of high conservation value within the Highlands region. The State acquires land or an interest in land from willing sellers for permanent protection. Potential lands are identified by USFS; USDOI provides matching funds, not to exceed 50% of the total cost project for acquisition.

Table 5.2-1. Other Related Federal Conservation Programs
(cont'd)

Program / Administrator	Summary
Farm and Ranch Lands Protection Program / NRCS	A voluntary program that provides matching funds to State, Tribal, or local governments and non-governmental organizations to purchase conservation easements from farmers and ranchers to keep their lands in agriculture. State, Tribal, or local governments and non-governmental organizations purchase conservation easements from landowners, who in turn (1) agree not to convert their land to non-agricultural uses and (2) develop and implement a conservation plan for any highly erodible land. Landowners are paid fair market value based on standard real property appraisal methods.
Grazing Lands Conservation Initiative / NRCS	A collaboration of individuals and organizations for the maintenance and improvement of management, productivity, and health of privately owned grazing land. The Initiative provides technical assistance and public awareness activities to support conservation activities on private grazing lands.
Mississippi River Basin Healthy Watersheds Initiative / NRCS	NRCS and its partners will assist producers in selected watersheds within the Mississippi River Basin voluntarily apply conservation practices to avoid, control, and trap nutrients in runoff; improve habitat for wildlife; and maintain agricultural productivity. The 12 participating States are Arkansas, Kentucky, Illinois, Indiana, Iowa, Louisiana, Minnesota, Mississippi, Missouri, Ohio, Tennessee, and Wisconsin. This initiative will be offered in FYs 2010 through 2013. Watersheds are selected based on the largest impact on reducing downstream nutrient loads. Payments will be based on the estimated cost of implementing or performing conservation practices and the estimated cost of income forgone by the producer (Income lost from a change in land use or land taken out of production and accepting less farm income in exchange for improved resource conditions).
Biomass Crop Assistance Program / FSA	The Biomass Crop Assistance Program (BCAP) assists agricultural and forest land owners and operators with matching payments for the cost of collection, harvest, storage, and transportation (CHST) of eligible material for use by a qualified Biomass conversion Facility. The program would also support the establishment and production of eligible crops to be converted to bioenergy; establishment of this provision is pending. The CHST matching payment program provides eligible land owners and operators matching payments for the sale and delivery of eligible material to qualified biofuel conversion facilities.
Renewable Energy Production Tax Credits / Department of Energy (DOE) & Internal Revenue Service (IRS)	The renewable electricity production tax credit (PTC) is applied to taxpayers that sell electricity to an unrelated person that is produced from qualified energy resources at a qualified facility during a 10-year period beginning on the date the facility was placed in operation, provided it occurred before the tax credit's expiration date. This PTC is available to businesses that pay Federal corporate taxes. Qualified resources include: wind, closed-loop biomass, open-loop biomass, geothermal energy, solar energy, small irrigation power, municipal solid waste, and qualified hydropower production. The American Recovery and Reinvestment Act of 2009 provides a three-year extension for most renewable energy facilities and offering expansions and alternatives for tax credits on renewable energy systems; keeping the wind energy PTC in effect through 2012, and the PTC for the remaining energy facilities in effect until 2013.

Table 5.2-1. Other Related Federal Conservation Programs
(cont'd)

Program / Administrator	Summary
Renewable Energy Production Incentive / DOE & IRS	This program was designed to complement the Renewable Energy Production Tax Credit and is available to non-profit electrical cooperatives, public utilities, State governments, commonwealths, territories, and possessions of the U.S., as well as Indian Tribal governments and Native Corporations. It provides incentive payments for energy produced and sold by new, qualified renewable energy facilities for the first 10 years of their operation, provided it occurs before the end of FY 2015. Qualified systems include solar, wind, geothermal (with restrictions), biomass (excluding municipal solid waste), landfill gas, methane from livestock, and ocean resources (e.g., tidal, wave, current, and thermal).

5.3 CUMULATIVE EFFECTS ANALYSIS

In this SEIS, the affected environment for cumulative impacts are those privately held or Tribal lands that are currently enrolled or eligible for enrollment in CRP. For the purposes of this analysis, the goals and plans of Federal programs authorizing enrollment of privately held conservation lands are the primary sources of information used in identifying past, present, and reasonably foreseeable actions. Cumulative impacts are assessed for the analyzed resources under the nine provisions evaluated in this SEIS.

5.3.1 Provision 1 (National Conservation Initiatives)

No significant negative cumulative impacts are expected to occur from continuation of current methods of addressing National Conservation Initiatives with CRP, or implementation of either of the alternatives considered for Provision 1. Continuation of the current incentives to encourage enrollment in both National CPAs and in existing initiatives, as well as CREPs would continue to improve the quality of ground and surface waters, control soil erosion, and enhance wildlife habitat on environmentally sensitive agricultural land while providing financial benefits to producers. Creation of three new national initiatives as proposed by Alternative 1 targets benefits to highly erodible soils, source water quality and quantity, and critical wildlife on a regional scale, while continuing to meet broader program goals. Alternative 2 would continue existing procedures to address national conservation issues, but would reduce wetland initiatives; while less beneficial for this resource, the latter would not be significantly adverse due to the limited amount of acreage apportioned for this initiative (750,000 acres) of which less than half have actually been enrolled. Future enrollment of environmentally sensitive agricultural lands in programs that create or restore habitat, preserve soils, and improve water quality would benefit the natural resources evaluated in this SEIS, cumulatively resulting in long-term positive impacts to the natural and human environment.

5.3.2 Provision 2 (Maximum Enrollment)

No significant negative cumulative impacts would occur from continuation of CRP as currently constituted or for Alternative 1, implementation of environmental targeting of CRP under Provision 2 in combination with past, present, or reasonably foreseeable actions. Continuation of apportioning about 85 percent of the 32 million maximum acres authorized for the program by the 2008 Farm Bill to General Signup and 15 percent to Continuous (Targeted) Signups would continue to retire lands from agricultural production and establish resource conserving vegetative covers or conservation practices that benefit soils, surface and groundwaters, vegetation, wildlife and protected species, and carbon sequestration, while providing economic benefits to participants and their communities. The impacts of Alternative 1 that would maintain 32 million acres authorized for the program, but apportion 75 percent to General Signup and 25 percent to Continuous or Targeted Signup would benefit natural resources similar to the No Action Alternative.

The total number of acres authorized for enrollment in CRP is enacted by Farm Bills that have been re-authorized by Congress approximately every five years. No discretion to exceed the authorized program limits of 32 million acres is afforded by the 2008 Farm Bill; however, the apportionment of the acres among programs and/or a reduction in program size is discretionary. The prior authorized CRP limit established by the 2002 Farm Bill was 39.2 million acres, which was never fully reached by enrollments from 2002 until passage of the 2008 Farm Bill. The reduction to 32 million acres by FY 2010 as called for by the 2008 Farm Bill has coincided with the expiration of millions of acres from CRP, a convergence caused by the timing and success of past signups and the 10 to 15 year durations of CRP contracts.

Alternative 2 would reduce the size of CRP to no more than 24 million acres, apportioning 20 million acres (84 percent) to General Signup and four million acres (16 percent) to Continuous Signup. Certain areas of the country are scheduled to have large amounts of CRP acreage expire from now until FY 2012, such as about 24 percent of current total CRP program acreage expiring in Kansas and Texas alone. A reduction in program acres to the 24 million acre level, in combination with future expiring acreage has the potential to cumulatively negatively impact natural resources such as soil, water, carbon sequestration, vegetation, protected species, wildlife, and recreation on a local level. Because much of the land leaving the program would be returned to agricultural production, the reduction in payments to participants associated with reduction of the program to 24 million acres would be offset by increased returns from farming and ranching. No significant cumulative negative impacts to socioeconomic or environmental justice would occur.

5.3.3 Provision 3 (Alfalfa Crop History)

No significant negative cumulative impacts would occur from continuation of current CRP crop history requirements or implementation of either action alternative in combination with past, present, or reasonably foreseeable actions. Continuation of the current procedures until FY 2012 that qualifies lands cropped with alfalfa in combination with multi-year grasses, legumes, or summer fallow in rotation with other eligible agricultural commodities, with the rotation having occurred within 1996 to 2001, would continue to allow conversion of agricultural lands to conservation purposes.

The 2008 Farm Bill updated the CRP crop history period to extend from 2002 to 2007 and authorized production of alfalfa alone in rotation with an eligible agricultural commodity as meeting crop history requirements. Implementation of Alternative 1 would qualify alfalfa grown alone in rotation with an eligible commodity to consist of a rotation of six years of alfalfa and two years of commodity, with the rotation occurring sometime within 2002 to 2007, whereas Alternative 2 would lengthen the required history and rotation to be eight years of alfalfa and four years eligible commodity. Implementation of either alternative, in combination with other past, present, or reasonably foreseeable actions, would not result in negative cumulative impacts. Both alternatives would authorize additional agricultural lands to qualify for enrollment in CRP, benefiting natural resources while providing financial benefits to program participants.

The crop history period qualifying eligible lands authorized for enrollment in CRP is enacted by Farm Bills that have been re-authorized by Congress approximately every five years. No discretion to alter the crop history period is offered by the 2008 Farm Bill, which defines eligible land as that which was cropped four out six years prior to enactment, or within 2002 to 2007. The authority to operate under the provisions of the 2008 Farm Bill is scheduled to expire in FY 2012. A reasonably foreseeable action that could have cumulative negative environmental impacts is the potential for bringing new lands into agricultural production, commonly referred to as sodbusting, so that the land would meet the new crop history requirements anticipated in the next Farm Bill legislation. The greatest concern centers on converting native grasslands to agricultural production in anticipation of the next Farm Bill crop history requirements, but conversion of wetlands, or swampbusting, potentially could occur as well.

Sodbusting and swampbusting have been issues recognized by USDA and Congress since inception of CRP in 1985. The 1985 Farm Security Act included Sodbuster and Swampbuster provisions to minimize the potential for their occurrence. The original Sodbuster provisions applied to any highly erodible field that was not planted to an annual crop or was designated as set-aside or diverted acreage under government commodity supply programs for at least one of the five crop years between 1981 and 1985 (ERS 2006). Under Sodbuster provisions, farmers choosing to grow crops on HEL lands must implement conservation practices to minimize soil erosion such as installing buffer strips, terracing, methods to minimize tillage, and the like. Native sod is defined as land on which the plant cover is composed principally of native grasses, grasslike plants, forbs, or shrubs suitable for grazing and browsing, and which has never been tilled for the production of an annual crop as of the date of enactment of the most current Farm Bill (House Report [H.R.] 2419 §12020 (a)(1)). Native sod acreage that is tilled for the production of an annual crop is ineligible for Federal crop insurance and noninsured crop disaster assistance benefits during the first five crop years of planting.

Similarly, the Swampbuster provision generally allows the continuation of most farming practices so long as wetlands are not converted or wetland drainage increased. The Swampbuster provision discourages farmers from altering wetlands by withholding Federal farm program benefits from any person who plants an agricultural commodity on a converted wetland that was converted by drainage, dredging, leveling, or any other means, or converts a wetland for the purpose of making agricultural commodity production possible.

Future crop history requirements under the 2012 Farm Bill are not known and could change; however, assuming the requirements would be similar to past crop history updates, the updated

crop history period would be within 2006 to 2011. In certain regions, the rate of converting grasslands to agricultural production has recently increased substantially. A study conducted by the Government Accounting Office (GAO-07-1054) examined the issue in the States of Montana, Nebraska, North Dakota, and South Dakota. The study found that primary drivers in the increased conversion of native prairie to agricultural production is related to farm program payments, rising crop prices, hardier seed varieties, and new farming techniques. Farm program crop insurance and disaster assistance payments provide farmers with lower financial risk in the event of crop failure. In addition, the Federal crop insurance program protects crop producers from production risks associated with adverse weather as well as price risks associated with commodity market fluctuations. Rising demand and pricing for biofuel crops have been significant factors in land conversion. Hardier seed varieties, including drought-tolerant and herbicide resistant crops and new techniques such as no-till farming, make crop production easier in areas generally considered unsuitable for crop production.

A related issue is the potential for lands coming out of CRP between now and FY 2012 being returned to agricultural production in order to qualify for CRP crop history anticipated in the next Farm Bill. In May of 2008, contract extensions were offered that have enrolled about one million acres, with an additional 500,000 acres available to enroll. From FY 2010 until FY 2012; about 11.8 million acres are associated with expected contract expirations, of which re-enrollments could be applied, assuming a 32 million acre program. Acreage coming out of CRP have traditionally been determined to meet crop history requirements for purposes of re-enrollment, thus there is little incentive to break out this acreage in order to qualify for CRP crop history requirements. H.R. 6124 §1238E (c)(2) regards lands that do not meet the crop rotation requirement if they were previously enrolled in the CRP as eligible for re-enrollment in CRP. Further, in recognition of the large amount of acreage scheduled to expire from CRP from 2007 to 2012, the 2008 Farm Bill enacted measures to facilitate enrollment of these lands in other Federal conservation programs such as the Grassland Reserve Program (H.R. 6124 §1238N).

Given the measures in place to discourage sodbusting and swampbusting and the incentives offered to enroll lands coming out of CRP to re-enroll or enroll into other Federal conservation programs, no significant cumulative negative impacts would occur from implementation of the alternatives considered to implement Provision 3 crop history requirements. Positive long-term benefits to natural resources are expected to result from qualifying more agricultural lands to enroll in conservation programs.

5.3.4 Provision 4 (County Acreage Limitation Exception)

No significant negative cumulative impacts are expected to occur from continuation of current procedures for excepting the 25 percent county cropland enrollment in CRP/WRP limit or implementation of either of the action alternatives considered for Provision 4. Continuation of the current process of enabling enrollment of more cropland acres in CRP beyond the 25 percent cap while ensuring no significant negative impacts to the local economy occurs would continue to improve the quality of ground and surface waters, control soil erosion, and enhance wildlife habitat on environmentally sensitive agricultural land while providing financial benefits to producers. Allowing a county to authorize exceedance of the 25 percent total county cropland enrollment limit for additional Continuous or CREP enrollment, with no additional per county

acreage limitation imposed as proposed by Alternative 1, or only up to a total of 50 percent cropland enrollment as proposed by Alternative 2, would provide counties flexibility to maximize the environmental benefits of CRP and financial benefits to local communities while minimizing the potential for significant negative impacts. Future enrollment of environmentally sensitive agricultural lands in programs that create or restore habitat, preserve soils, and improve water quality would benefit the natural and socioeconomic resources evaluated in this SEIS, cumulatively resulting in long-term positive impacts to the natural and human environment.

5.3.5 Provision 5 (Conservation Plan Management)

No significant negative cumulative impacts are expected to occur from continuation of current procedures for conservation plan and mid-contract management or either of the action alternatives considered for Provision 5. Continuation of requiring MCM on all CPs for contracts executed after 2004 and voluntary MCM for contracts accepted before then would ensure the health and vigor of the conservation practice and the fulfillment of its intended purpose. Providing the participant 50 percent cost share continues to create incentives to complete the needed management. Alternative 1 would require MCM only if included in the Conservation Plan. Alternative 2 would allow States to determine which CPs would require MCM in addition to including appropriate MCM tasks in the Conservation Plan. Both alternatives ensure MCM is undertaken as appropriate to local conditions while providing cost share incentives to complete these tasks with no significantly negative impacts. Positive cumulative long-term impacts to the natural and human environment would occur from activities similar to those described for the alternatives considered to implement Provision 5.

5.3.6 Provision 6 (Harvesting CRP)

No significant negative cumulative impacts are expected to occur from continuation of current procedures for haying and grazing eligible CRP lands or either of the action alternatives considered for implementing Provision 6. Continuation of provisions for haying and/or grazing under managed, emergency, limited, incidental, or permissive procedures would ensure the health and vigor of the conservation practice and that it fulfills its intended purpose while providing the participant financial benefits. Permitting managed harvesting and routine grazing (including prescribed grazing for control of invasive plant species) only for CPs currently authorized for haying or grazing as proposed by Alternative 1, or for new CPs as proposed by Alternative 2, with additional NEPA analysis and compliance by States desiring to change the CPs, timing, frequency, and length of harvesting activity or the PNS period (during which no harvesting or grazing may occur) would provide flexibility needed to implement these activities while taking into account local conditions. Assessing a rental payment reduction of 25 percent for managed harvest or routine grazing acres and no reduction for prescribed grazing for control of invasives as would occur under both Alternatives 1 and 2 conserves program funds while enabling participants to realize economic benefits specific to their operations. Future haying or grazing under both managed or emergency procedures would not significantly adversely impact vegetation, wildlife, protected species, soil, surface water or groundwater, or carbon sequestration if the established conservation practice provisions, standards, and guidelines are followed, and the Conservation Plan is adapted to resource conditions on the land just prior to engaging in either activity. If conducted appropriately for local resource conditions, harvesting or

grazing of CRP benefits the conservation cover and would not defeat the purpose of enrolling lands in the program. Positive cumulative long-term impacts to the natural and human environment would occur from activities similar to those described for the alternatives considered to implement Provision 6.

5.3.7 Provision 7 (NASS Cash Rental Rates)

No significant negative cumulative impacts are expected to occur from continuation of current procedures for CRP annual rental payments or either of the action alternatives considered for implementing Provision 7. Continuation of existing annual rental payment rules with a soil productivity adjustment as described in Chapter 1 would continue to provide incentives to enroll in CRP and meet acreage enrollment goals under both General and Continuous (Targeted) Signup. Using NASS cash rental rates for General Signup contracts executed after December 1, 2009 while maintaining existing payment rules for Targeted Signup with additional incentives as proposed under Alternative 1, or using NASS rates for all signups with no additional Targeted Signup incentives as proposed by Alternative 2, would result in geographic shifts in program acreage; however, overall participation in the program would not substantially decrease. Whether existing or proposed CRP rental payments are higher or lower provides incentives or disincentives to enroll, but keeping land in or returning land to agricultural production would offset negative economic impacts to a less than significant level. Moreover, acreage enrollment goals at current levels would be mostly met under both action alternatives. No significant negative impacts to the natural or human environment would occur under any of the alternatives considered to implement this provision; however, under both action alternatives, if Targeted Signup enrollment goals were substantially increased while keeping current initiatives constant, it would be unlikely those enrollment goals would be met without some other compensating measure being taken. Overall, positive long-term benefits to the natural and human environment would occur from the alternatives considered to implement Provision 7 and the continued enrollment of environmentally sensitive lands in conservation programs.

5.3.8 Provision 8 (Socially Disadvantaged Farmer/Rancher Incentives)

No significant negative cumulative impacts are expected to occur from continuation of current procedures which do not offer incentives for enrolling socially disadvantaged farmers or ranchers, or either of the action alternatives considered for providing incentives to this affected population under Provision 8. Continuation of the ability to offer incentives to beginning and limited resource farmers, ranchers, and Indian Tribes only would enable these segments of the population to participate in CRP and enhance reaching program enrollment goals. Extending incentives to socially disadvantaged farmers and ranchers in addition to beginning and limited resource segments of the population as proposed under the action alternatives would increase program costs and require PAYGO offsets in the USDA budget which may reduce services to other CRP participants; however, given the relatively small number of socially disadvantaged farmers and ranchers and the acreage that may be enrolled under Provision 8, no significantly negative impacts would occur. Offering socially disadvantaged farmers and ranchers incentives to participate in CRP also enhances reaching program enrollment goals. Positive cumulative long-term impacts to the natural and human environment would occur from activities similar to

those described for the alternatives considered to implement Provision 8 and the continued enrollment of environmentally sensitive lands in conservation programs.

5.3.9 Provision 9 (Pollinator Conservation)

No significant negative cumulative impacts are expected to occur from continuation of current procedures for pollinator conservation or either of the action alternatives considered for Provision 9. Continuation of using general methods to reduce impacts to pollinators as offered in NRCS practice standards and technical guides as well as the ability to implement SAFE projects targeting conservation of pollinator species would benefit pollinators and other wildlife through the creation of diverse vegetative communities that provide food sources and habitat, while reducing the use of herbicide and pesticide use. Creation of a new Pollinator Habitat Conservation CP and/or modifying existing CPs to specifically benefit pollinators as proposed by the action alternatives would provide long term benefits to biological , water , and soil resources, carbon sequestration, socioeconomic, environmental justice, and recreation. Positive cumulative long-term impacts to the natural and human environment would occur from activities similar to those described for the alternatives considered to implement Provision 9, and continued enrollment of environmentally agricultural sensitive lands in conservation programs.

5.3.10 Cumulative Impacts Matrix

All of the conservation programs offered through USDA are voluntary and enrollment cannot be predicted. The incremental contribution of impacts of the Proposed Action, when considered in combination with other past, present, and reasonably foreseeable actions, are expected to result in positive impacts to biological, water, soil, socioeconomic and other protected resources in the current and proposed CRP areas. Producers cannot apply for assistance for the same activity on the same land under multiple programs, reducing the potential for abuse of government funds. Short-term negative impacts to biological, water, soil and other resources may occur during establishment of CPs. Table 5.3-1 summarizes cumulative effects.

Table 5.3-1. Cumulative Impacts Matrix – Provision 1 (National Conservation Initiatives)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i></p>	<p>Long-term benefits to biological resources would be achieved by reducing soil erosion and improving water quality, thereby ensuring long-term viability of the conservation cover. Past or present actions that create or improve habitat for wildlife and threatened and endangered species would be achieved through taking lands out of agricultural production and installing conservation covers.</p>	<p>Long-term positive benefits to biological resources are expected to be similar to those described in past and present actions and may provide greater benefits to targeted species due to the addition of regional conservation initiatives.</p>	<p>Long-term positive benefits to biological resources are expected to be similar to those described in past and present actions; however this alternative reduces acreage of wetland initiative acreage, would shift benefits to terrestrial biological resources.</p>	<p>Continued enrollment of farmland in programs that would create or restore habitats is expected to benefit biological resources.</p>	<p>Positive long-term cumulative benefits to biological resources are expected to result from CRP, similar USDA programs, and other Federal and State conservation programs that aim to restore habitat and improve soils and water quality.</p>
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i></p>	<p>Beneficial impacts to water resources are derived from taking cropland out of agricultural production reducing runoff of agricultural chemicals, sediment, and excess nutrients; consuming less groundwater, reducing use of agricultural chemicals</p>	<p>Long-term positive impacts to water resources are expected to be similar to those described in past and present actions and may provide greater benefits due to the addition of a source water protection initiative.</p>	<p>Long-term positive impacts to water resources are expected to be similar to those described in past and present actions; however, this alternative would be less beneficial to water resources due to the loss of wetland acreage.</p>	<p>Continued enrollment of land in conservation programs is expected to have positive impacts to water resources from activities similar to those described for the alternatives.</p>	<p>Positive long-term cumulative benefits to water resources are expected to result from activities similar to those actions described for past and present actions and the alternatives.</p>

Table 5.3-1. Cumulative Impacts Matrix – Provision 1 (National Conservation Initiatives) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management (cont'd)</i>	that can pollute groundwater by conversion of lands to conservation; storing runoff reducing flooding; and by creating or restoring wetland natural hydrology, ensuring their continued functionality and value				
Soil Resources	Long-term beneficial impacts to soils resources are expected to result from conversion of agricultural lands to conservation by reducing soil erosion and improving soil organic content.	Long-term beneficial impacts to soils are expected to have positive impacts similar to those actions described in past and present actions. Greater positive impacts would occur with implementation of the Highly Erodible Land Initiative.	Long-term beneficial impacts to soils are expected to have positive impacts similar to those actions described in past and present actions and Alternative 1.	Continued enrollment of cropland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions.	Long-term benefits to soil resources are expected to result from CRP, similar USDA programs and other State and federal conservation programs that aim to convert cropland to conservation purposes.
Air Quality <i>Carbon Sequestration</i>	Long-term beneficial impacts to air quality are expected to result from increased carbon sequestration due to conversion of highly erodible croplands, which have low rates of carbon sequestration,	Long-term beneficial impacts to air quality are expected to have positive impacts similar to those actions described in past and present actions. Greater positive impacts to air quality	Long-term beneficial impacts to air quality are expected to have positive impacts similar to those activities described for past and present actions.	Continued enrollment of cropland in programs that would convert them to conservation purposes would continue to benefit carbon sequestration.	Positive long-term cumulative impacts to air quality are expected to result from activities similar to those actions described in the Alternatives.

Table 5.3-1. Cumulative Impacts Matrix – Provision 1 (National Conservation Initiatives) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Air Quality <i>Carbon Sequestration (cont'd)</i>	to conservation purposes.	would occur with implementation of the Highly Erodible Land Initiative.			
Socioeconomics	Long-term positive impacts to socioeconomic resources are expected to result from conservation programs including financial incentives for conservation programs that contribute to societal benefits of reduced soil erosion, improved water quality, and creating wildlife habitat.	Long-term beneficial impacts to socioeconomic resources are expected to have positive impacts similar to those actions described in past and present actions.	Long-term beneficial impacts to socioeconomic resources are expected to have positive impacts similar to those actions described in past and present actions and Alternative 1.	Continuing to offer financial incentives for conservation through cost share and annual rental payments benefits socioeconomic resources.	Positive long-term benefits to socioeconomic resources are expected from those actions described for past and present actions, the alternatives considered, and other known and reasonably foreseeable actions.
Environmental Justice	The program does not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, no significant disproportionate adverse impacts to minority or low income populations are anticipated, thereby, no	Impacts to environmental justice are expected to be similar to those described in past and present actions. PAYGO would have no disproportionate adverse impacts to protected populations.	Impacts to environmental justice populations are expected to be similar to those described for past and present actions and Alternative 1.	Implementation of Provision 1 in combination with reasonably foreseeable CRP program actions would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. No program changes are anticipated that would result in	No disproportionate adverse impacts to environmental justice populations are expected from CRP, similar USDA, and other State, and Federal conservation programs.

Table 5.3-1. Cumulative Impacts Matrix – Provision 1 (National Conservation Initiatives) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Environmental Justice (cont'd)	environmental justice inequity would occur.			disproportionate adverse impacts to environmental justice populations.	
Recreation	Past and present actions have provided benefits to recreation resources through the creation of wildlife habitat, improved soil quality, and increased water quality and quantity provided by CRP.	Greater targeted benefits to recreation are expected to occur, similar to those described for past and present actions.	Impacts to recreation are expected to be similar to those described for past and present actions.	Continued enrollment of cropland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions and the alternatives.	Positive long-term cumulative benefits to recreation are expected to result from activities similar to those actions described for past and present actions and the alternatives.

Table 5.3-2. Cumulative Impacts Matrix – Provision 2 (Maximum Enrollment)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i></p>	<p>Long-term benefits to vegetation and biological resources would be achieved by reducing soil erosion and improving water quality, thereby ensuring long-term viability of the conservation cover. Past or present actions that create or improve habitat for wildlife and threatened and endangered species would be achieved through taking lands out of agricultural production and installing conservation covers.</p>	<p>Long-term positive benefits to biological resources are expected to be similar to those described for past and present actions and may provide greater benefits to biological resources due to the increased allocation of Targeted Signup acres.</p>	<p>This alternative would reduce CRP enrollment acreage to 24 million acres resulting in potentially significant negative impacts to biological resources on a local scale.</p>	<p>Continued enrollment of farmland in programs that would create or restore habitats is expected to benefit biological resources.</p>	<p>Positive long-term cumulative impacts to biological resources are expected to result from activities similar to those actions described for past and present actions and Alternative 1.</p>
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i></p>	<p>Beneficial impacts to water resources are derived from taking cropland out of production, reducing runoff of agricultural chemicals, sediment, and excess nutrients; consuming less groundwater, and reducing use of</p>	<p>Long-term positive impacts to water resources are expected to be similar to those described in past and present actions.</p>	<p>This alternative would reduce CRP enrollment acreage to 24 million acres resulting in potentially significant negative impacts to water resources on a local scale.</p>	<p>Continued enrollment of land in conservation programs is expected to have positive impacts to water resources from activities similar to those described for the Alternatives.</p>	<p>Positive long-term cumulative impacts to water resources are expected to result from activities similar to those actions described in the Alternatives.</p>

Table 5.3-2. Cumulative Impacts Matrix – Provision 2 (Maximum Enrollment) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management (cont'd)</i>	agricultural chemicals that can pollute groundwater.				
Soil Resources	Long-term beneficial impacts to soils resources are expected to result from conversion of agricultural lands to conservation by reducing soil erosion and improving soil organic content. Greater acreage devoted to General signup has more beneficial impacts to soil resources.	Long-term beneficial impacts to soils are expected to have positive impacts similar to those actions described in past and present actions. A decrease in General Signup acreage is less beneficial to soil resources; however, the acreage differences between the Alternative and current action are minimal.	This alternative would reduce CRP enrollment acreage to 24 million acres resulting in potentially significant negative impacts to soil resources on a local scale.	Continued enrollment of farmland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions.	Long-term benefits to soil resources are expected to result from CRP, similar USDA programs and other State and federal conservation programs that aim to restore habitats and improve water quality.
Air Quality <i>Carbon Sequestration</i>	Long-term beneficial impacts to air quality are expected to result from increased carbon sequestration due to conversion of highly erodible lands which have low rates of	Long-term beneficial impacts to air quality are expected to have positive impacts similar to those actions described in past and present actions. Less General Signup	This alternative would reduce CRP enrollment acreage to 24 million acres resulting in potentially significant negative impacts to carbon sequestration resources on a local	Continued enrollment of farmland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions.	Positive long-term cumulative impacts to air quality are expected to result from activities similar to those actions described in the Alternatives.

Table 5.3-2. Cumulative Impacts Matrix – Provision 2 (Maximum Enrollment) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Air Quality <i>Carbon Sequestration (cont'd)</i>	carbon sequestration and potential for soil erosion. Greater acreage devoted to General signup has more beneficial impacts to air quality.	acreage is less beneficial to soil resources; however, the acreage differences between the Alternative and current action is minimal.	scale.		
Socioeconomics	Long-term positive impacts to socioeconomic resources are expected to result from conservation programs including financial incentives for conservation and conservation programs that contribute to societal benefits.	Long-term beneficial impacts to socioeconomic resources are expected to have positive impacts similar to those actions described in past and present actions; however, enrollment under targeted acreage would potentially be more competitive thereby reducing rental payments and eligible land.	Long-term beneficial impacts to socioeconomic resources are expected to have positive impacts similar to those actions described in past and present actions. Loss to local economies of CRP rental payments would be offset by returning some of these lands to agricultural production.	Continuing to offer financial incentives for conservation through cost share and annual rental payments benefits socioeconomic resources.	Positive long-term impacts to socioeconomic resources are expected to have positive impacts similar to those actions described for past and present actions and other known and reasonably foreseeable actions.
Environmental Justice	The program does not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, no significant disproportionate adverse impacts to	Impacts to environmental justice are expected to be similar to those described in past and present actions.	Impacts to environmental justice are expected to be similar to those described in past and present actions and Alternative 1. No disproportionate adverse impacts to	Implementation of Provision 2 in combination with reasonably foreseeable CRP program actions would not adversely, nor disproportionately impact minorities, women, or persons	No disproportionate adverse impacts to environmental justice populations are expected from CRP, similar USDA, and other State, and Federal conservation programs.

Table 5.3-2. Cumulative Impacts Matrix – Provision 2 (Maximum Enrollment) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Environmental Justice (cont'd)	minority or low income populations are anticipated, thereby, no environmental justice inequity would occur.		environmental justice populations would occur from reducing CRP total authorized enrollment acreage.	with disabilities. No program changes are anticipated that would result in impacts to environmental justice populations.	
Recreation	Long-term benefits to recreation would be indirectly achieved by reducing soil erosion and improving water quality, thereby ensuring long-term viability of wildlife and natural habitat for recreational activities such as hunting, fishing, or wildlife viewing.	Impacts to recreation are expected to be similar to those described in past and present actions.	This alternative would reduce CRP enrollment acreage to 24 million acres resulting in potentially significant negative impacts to recreation resources on a local scale.	Continued enrollment of farmland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions.	Positive long-term cumulative impacts to recreation are expected to result from activities similar to those actions described in the Alternatives.

Table 5.3-3. Cumulative Impacts Matrix – Provision 3 (Alfalfa Crop History)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i></p>	<p>Long-term benefits to biological resources would be achieved by reducing soil erosion and improving water quality, thereby ensuring long-term viability of the conservation cover. Past or present actions that create or improve habitat for wildlife and threatened and endangered species would be achieved through enabling lands planted to alfalfa in rotation with other eligible commodities to qualify for enrollment in CRP, which takes lands out of agricultural production and installs conservation covers.</p>	<p>Long-term positive benefits to biological resources are expected to be similar to those described in past and present actions; but less land is likely to qualify for enrollment under the alfalfa rotation requirements.</p>	<p>Long-term positive benefits to biological resources are expected to be similar to those described in past and present actions; but less land is likely to qualify for enrollment under the alfalfa rotation requirements.</p>	<p>Continued enrollment of cropland in programs that would create or restore habitats is expected to benefit biological resources.</p>	<p>Positive long-term cumulative benefits to biological resources are expected to result from activities similar to those actions described for past and present actions and the Alternatives.</p>
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i></p>	<p>Beneficial impacts to water resources would be achieved through enabling lands planted to alfalfa in rotation with other eligible commodities to qualify for enrollment in CRP,</p>	<p>Long-term positive impacts to water resources are expected to be similar to those described in past and present actions; however, less land would likely to</p>	<p>Long-term positive impacts to water resources are expected to be similar to those described in past and present actions; however, less land would likely to</p>	<p>Continued enrollment of land in conservation programs is expected to have positive impacts to water resources from activities similar to those described for</p>	<p>Positive long-term cumulative benefits to water resources are expected to result from activities similar to those actions described in the Alternatives.</p>

Table 5.3-3. Cumulative Impacts Matrix – Provision 3 (Alfalfa Crop History) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management (cont'd)</i>	which takes lands out of agricultural production and installs conservation covers. This would reduce runoff of agricultural chemicals, sediment, and excess nutrients; consume less groundwater, and reduce use of agricultural chemicals that can pollute groundwater.	qualify for enrollment under the alfalfa rotation requirements of this alternative, but, the number of affected acres would be small due to the rate of expiring acreage from now until 2012.	qualify for enrollment under the alfalfa rotation requirements of this alternative, but the number of affected acres would be small due to the rate of expiring acreage from now until 2012.	past and present actions and the Alternatives.	
Soil Resources	Beneficial impacts to soil resources would be achieved through enabling lands planted to alfalfa in rotation with other eligible commodities to qualify for enrollment in CRP, which takes lands out of agricultural production and installs conservation covers. This reduces soil erosion and improves soil organic content.	Long-term positive impacts to soil resources are expected to be similar to those described in past and present actions; however, less land is likely to qualify for enrollment under the alfalfa rotation requirements of this alternative, but the number of affected acres would be small due to the rate of expiring acreage from now until 2012.	Long-term positive impacts to soil resources are expected to be similar to those described in for Alternative 1 and past and present actions; however, less land is likely to qualify for enrollment under the alfalfa rotation requirements of this alternative, but the number of affected acres would be small due to the rate of expiring acreage from now until 2012.	Continued enrollment of farmland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions.	Long-term benefits to soil resources are expected to result from CRP, similar USDA programs and other State and federal conservation programs that aim to convert cropland to conservation purposes.

Table 5.3-3. Cumulative Impacts Matrix – Provision 3 (Alfalfa Crop History) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Air Quality <i>Carbon Sequestration</i></p>	<p>Beneficial impacts to carbon sequestration would be achieved through enabling lands planted to alfalfa in rotation with other eligible commodities to qualify for enrollment in CRP, which takes lands out of agricultural production and installs conservation covers. This reduces soil erosion and increases soil carbon sequestration.</p>	<p>Long-term positive impacts to carbon sequestration are expected to be similar to those described in past and present actions; however, less land is likely to qualify for enrollment under the alfalfa rotation requirements of this alternative, but the number of affected acres would be small due to the rate of expiring acreage from now until 2012.</p>	<p>Long-term positive impacts to carbon sequestration are expected to be similar to those described in for Alternative 1 and past and present actions; however, less land is likely to qualify for enrollment under the alfalfa rotation requirements of this alternative, but the number of affected acres would be small due to the rate of expiring acreage from now until 2012.</p>	<p>Continued enrollment of cropland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions and the alternatives considered to implement Provision 3.</p>	<p>Positive long-term cumulative impacts to air quality are expected to result from activities similar to those actions described in past and present actions and the alternatives that sequester carbon.</p>
<p>Socioeconomics</p>	<p>Long-term positive impacts to socioeconomic resources are expected to result from conservation programs including financial incentives for conservation, such as enabling lands planted to alfalfa in rotation with other eligible commodities to qualify for enrollment in CRP.</p>	<p>Benefits to socioeconomic resources are expected to be similar to those described in past and present actions; however, less land is likely to qualify for enrollment under the alfalfa rotation requirements of this alternative, but the number of affected acres would be small</p>	<p>Benefits to socioeconomic resources are expected to be similar to those described for Alternative 1 and past and present actions; however, less land is likely to qualify for enrollment under the alfalfa rotation requirements of this alternative, but the number of affected</p>	<p>Continued enrollment of cropland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions and the alternatives considered to implement Provision 3.</p>	<p>Positive long-term impacts to socioeconomic resources are expected from those actions described for past and present actions, the alternatives, and other known and reasonably foreseeable actions.</p>

Table 5.3-3. Cumulative Impacts Matrix – Provision 3 (Alfalfa Crop History) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Socioeconomics (cont'd)		due to the rate of expiring acreage from now until 2012.	acres would be small due to the rate of expiring acreage from now until 2012.		
Environmental Justice	The program does not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, no significant disproportionate adverse impacts to minority or low income populations are anticipated; therefore, no environmental justice inequity would occur.	Impacts to environmental justice are expected to be similar to those described in past and present actions.	Impacts to environmental justice populations are expected to be similar to those described for past and present actions and Alternative 1.	Implementation of Provision 3 in combination with reasonably foreseeable CRP program actions would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. No program changes are anticipated that would result in impacts to environmental justice populations.	No disproportionate adverse impacts to environmental justice populations are expected from CRP, similar USDA, and other State, and Federal conservation programs.
Recreation	Beneficial impacts to recreation resources would be achieved through enabling lands planted to alfalfa in rotation with other eligible commodities to qualify for enrollment in CRP, which takes lands out of agricultural production and installs conservation covers. This provides new	Benefits to recreational resources are expected to be similar to those described in past and present actions; however, less land is likely to qualify for enrollment under the alfalfa rotation requirements of this alternative, but the number of affected acres would be small	Benefits to recreational resources are expected to be similar to those described for Alternative 1 and past and present actions; however, less land is likely to qualify for enrollment under the alfalfa rotation requirements of this alternative, but the	Continued enrollment of cropland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions and the alternatives considered to implement Provision 3.	Positive long-term cumulative benefits to recreation are expected to result from activities similar to those actions described in past and present actions and the alternatives.

Table 5.3-3. Cumulative Impacts Matrix – Provision 3 (Alfalfa Crop History) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Recreation (cont'd)	recreational opportunities from increased wildlife habitat and viewing areas.	due to the rate of expiring acreage from now until 2012.	number of affected acres would be small due to the rate of expiring acreage from now until 2012.		

Table 5.3-4. Cumulative Impacts Matrix – Provision 4 (County Acreage Limitation Exception)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i></p>	<p>Long-term benefits to biological resources would continue to be achieved by allowing additional cropland beyond the 25% county limit to enroll in CRP. Past or present actions that establish vegetative conservation covers and create or improve habitat for wildlife and threatened and endangered species would be achieved through converting agricultural lands to conservation purposes.</p>	<p>Long-term positive benefits to biological resources are expected to be similar to those described for past and present actions. While additional acreage may be enrolled locally, the total CRP authorized acreage would remain at no more than 32 million acres.</p>	<p>Long-term positive benefits to biological resources are expected to be similar to those described for Alternative 1 and past and present actions. While additional acreage may be enrolled locally, the total CRP acreage will remain at no more than 32 million acres.</p>	<p>Continued enrollment of cropland in programs that would create or restore habitats is expected to benefit biological resources.</p>	<p>Positive long-term cumulative benefits to biological resources are expected to result from activities similar to those actions described for past and present actions and the Alternatives.</p>
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i></p>	<p>Long-term benefits to water resources would continue to be achieved by allowing additional cropland beyond the 25% county limit to enroll in CRP. Past or present actions that establish vegetative conservation covers improves water quality.</p>	<p>Long-term positive benefits to water resources are expected to be similar to those described in past and present actions. While additional acreage may be enrolled locally, the total CRP authorized acreage would remain at no more than 32 million acres.</p>	<p>Long-term positive benefits to water resources are expected to be similar to those described in past and present actions. While additional acreage may be enrolled locally, the total CRP authorized acreage would remain at no more than 32</p>	<p>Continued enrollment of land in conservation programs is expected to have positive impacts to water resources from activities similar to those described for past and present actions and the alternatives considered to implement Provision</p>	<p>Positive long-term cumulative benefits to water resources are expected to result from activities similar to those actions described in past and present actions and the alternatives.</p>

Table 5.3-4. Cumulative Impacts Matrix – Provision 4 (County Acreage Limitation Exception) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management (cont'd)</i>	and can increase surface and groundwater supplies. Creation of wetlands improves water quality, recharges groundwater sources, and reduces downstream flooding		million acres.	4.	
Soil Resources	Long-term benefits to soil resources would continue to be achieved by allowing additional cropland beyond the 25% county limit to enroll in CRP. Past or present actions that convert cropland to long-term vegetative conservation covers reduces soil erosion and improves soil health.	Long-term positive benefits to soil resources are expected to be similar to those described in past and present actions. While additional acreage may be enrolled locally, total CRP authorized acreage would remain at no more than 32 million acres.	Long-term positive benefits to soil resources are expected to be similar to those described for Alternative 1 and past and present actions. While additional acreage may be enrolled locally, total CRP authorized acreage would remain at no more than 32 million acres.	Continued enrollment of cropland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions.	Long-term benefits to soil resources are expected to result from CRP, similar USDA programs and other State and federal conservation programs that aim to convert cropland to conservation purposes.
Air Quality <i>Carbon Sequestration</i>	Long-term benefits to carbon sequestration would continue to be achieved by allowing additional cropland beyond the 25% county limit to enroll in CRP. Past or present	Long-term positive benefits to air quality are expected to be similar to those described for Alternative 1 and past and present actions. While additional	Long-term positive benefits to air quality are expected to be similar to those described for Alternative 1 and past and present actions. While additional	Continued enrollment of cropland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions and the	Positive long-term cumulative benefits to air quality are expected to result from activities similar to those actions described in the Alternatives.

Table 5.3-4. Cumulative Impacts Matrix – Provision 4 (County Acreage Limitation Exception) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Air Quality <i>Carbon Sequestration (cont'd)</i>	actions that convert cropland to long-term vegetative conservation covers reduces soil erosion and improves carbon sequestration.	acreage may be enrolled locally, total CRP authorized acreage would remain at no more than 32 million acres.	acreage may be enrolled locally, total CRP authorized acreage would remain at no more than 32 million acres.	alternatives considered to implement Provision 4.	
Socioeconomics	Long-term positive impacts to socioeconomic resources are expected to result from conservation programs including financial incentives for conservation. By allowing additional cropland beyond the 25% county limit to enroll in CRP while ensuring no adverse impacts to local economies would occur, society would continue to reap the benefits of CRP.	Long-term beneficial impacts to socioeconomic resources are expected to occur similar to those actions described in past and present actions, even though additional acreage beyond the county cropland cap would be limited to CREP And Continuous Signup acreage.	Long-term beneficial impacts to socioeconomic resources are expected to have positive impacts similar to those actions described for Alternative 1 and past and present actions; however, an additional county cropland cap limit established at 50% would be less beneficial. Impacts would be minimal since program acreage would remain at no more than 32 million acres.	Continuing to offer financial incentives for conservation through cost share and annual rental payments benefits socioeconomic resources. Per acreage caps are dependent upon county economics and would not be exceeded if not economically viable.	Positive long-term benefits to socioeconomic resources are expected from those actions described for past and present actions, the alternatives, and other known and reasonably foreseeable actions.
Environmental Justice	The program does not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As	Impacts to environmental justice are expected to be similar to those described in past and present actions.	Impacts to environmental justice populations are expected to be similar to those described for past and present	Implementation of Provision 4 in combination with reasonably foreseeable CRP program actions would not adversely,	No disproportionate adverse impacts to environmental justice populations are expected from CRP, similar USDA, and

Table 5.3-4. Cumulative Impacts Matrix – Provision 4 (County Acreage Limitation Exception) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Environmental Justice (cont'd)	such, no significant disproportionate adverse impacts to minority or low income populations are anticipated, thereby, no environmental justice inequity would occur.		actions and Alternative 1.	nor disproportionately impact minorities, women, or persons with disabilities. No program changes are anticipated that would result in impacts to environmental justice populations.	other State, and Federal conservation programs.
Recreation	Long-term benefits to recreation resources would continue to be achieved by allowing additional cropland beyond the 25% county limit to enroll in CRP. Past or present actions that convert cropland to wildlife habitat and creating wetlands provides new recreation opportunities in the form of hunting, fishing, and wildlife viewing.	Long-term beneficial impacts to recreational resources are expected to occur similar to those actions described in past and present actions, even though additional acreage beyond the county cropland cap would be limited to CREP And Continuous Signup acreage.	Long-term positive benefits to air quality are expected to be similar to those described for Alternative 1 and past and present actions. While additional acreage may be enrolled locally, total CRP authorized acreage would remain at no more than 32 million acres.	Continued enrollment of cropland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions and the alternatives considered to implement Provision 4.	Positive long-term benefits to recreation resources are expected from those actions described for past and present actions, the alternatives, and other known and reasonably foreseeable actions.

Table 5.3-5. Cumulative Impacts Matrix – Provision 5 (Conservation Plan Management)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i></p>	<p>Long-term benefits to biological resources would be achieved by continuing to conduct mid-contract management as required or voluntarily under present provisions</p>	<p>Long-term positive benefits to biological resources are expected to be similar to those described for past and present actions. Completion of mid-contract management activities only if included in the Conservation Plan provides flexibility to design locally appropriate management specific for the lands to be enrolled.</p>	<p>Long-term positive benefits to biological resources are expected to be similar to those described in past and present actions. Allowing States to specify by CP appropriate mid-contract management activities, while additional management may be required by the conservationist and included in the Conservation Plan provides maximum flexibility to provide local management solutions.</p>	<p>Continued enrollment of cropland in programs that would create or restore habitat is expected to benefit biological resources. Mid-contract management activities would still be conducted to ensure the viability of the conservation cover.</p>	<p>Positive long-term cumulative benefits to biological resources are expected to result from activities similar to those actions described in past and present actions, the alternatives, and reasonably foreseeable future actions.</p>
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i></p>	<p>Long-term benefits to water resources would be achieved by continuing to conduct mid-contract management as required or voluntarily under present provisions.</p>	<p>Long-term positive impacts to water resources are expected to be similar to those described for past and present actions. Completion of mid-contract management activities only if included in the Conservation Plan provides flexibility to</p>	<p>Long-term positive benefits to water resources are expected to be similar to those described in past and present actions. Allowing States to specify by CP appropriate mid-contract management activities, while additional management</p>	<p>Continued enrollment of cropland in programs that would create or restore habitat is expected to benefit biological resources. Mid-contract management activities would still be conducted to ensure the viability of the conservation cover.</p>	<p>Positive long-term cumulative benefits to water resources are expected to result from activities similar to those actions described in past and present actions, the alternatives, and reasonably foreseeable future actions.</p>

Table 5.3-5. Cumulative Impacts Matrix – Provision 5 (Conservation Plan Management) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management (cont'd)</i>		design locally appropriate management specific for the lands to be enrolled.	may be required by the conservationist and included in the Conservation Plan provides maximum flexibility to provide local management solutions.		
Soil Resources	Long-term benefits to soil resources would be achieved by continuing to conduct mid-contract management as required or voluntarily under present provisions.	Long-term positive impacts to soil resources are expected to be similar to those described for past and present actions. Completion of mid-contract management activities only if included in the Conservation Plan provides flexibility to design locally appropriate management specific for the lands to be enrolled.	Long-term positive benefits to soil resources are expected to be similar to those described in past and present actions. Allowing States to specify by CP appropriate mid-contract management activities, while additional management may be required by the conservationist and included in the Conservation Plan provides maximum flexibility to provide local management solutions.	Continued enrollment of cropland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions.	Long-term benefits to soil resources are expected to result from CRP, similar USDA programs and other State and federal conservation programs that aim to convert agricultural lands to long-term conservation purposes.

Table 5.3-5. Cumulative Impacts Matrix – Provision 5 (Conservation Plan Management) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Air Quality <i>Carbon Sequestration</i></p>	<p>Long-term benefits to carbon sequestration resources would be achieved by continuing to conduct mid-contract management as required or voluntarily under present provisions.</p>	<p>Long-term positive impacts to carbon sequestration are expected to be similar to those described for past and present actions. Completion of mid-contract management activities only if included in the Conservation Plan provides flexibility to design locally appropriate management specific for the lands to be enrolled.</p>	<p>Long-term positive benefits to carbon sequestration are expected to be similar to those described in past and present actions. Allowing States to specify by CP appropriate mid-contract management activities, while additional management may be required by the conservationist and included in the Conservation Plan provides maximum flexibility to provide local management solutions.</p>	<p>Continued enrollment of cropland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions.</p>	<p>Long-term benefits to carbon sequestration are expected to result from CRP, similar USDA programs and other State and federal conservation programs that aim to convert agricultural lands to long-term conservation purposes.</p>
<p>Socioeconomics</p>	<p>Long-term positive impacts to socioeconomic resources are expected to result from conservation programs including financial incentives for management of conservation practices. Mid-contract management would</p>	<p>Long-term beneficial impacts to socioeconomics are expected to have positive impacts similar to those actions described in past and present actions. Completion of mid-contract management activities only if included in the</p>	<p>Long-term positive benefits to socioeconomic resources are expected to be similar to those described in past and present actions. Allowing States to specify by CP appropriate mid-contract management activities, while</p>	<p>Continuing to offer financial incentives for conservation through cost share and annual rental payments benefits socioeconomic resources.</p>	<p>Positive long-term benefits to socioeconomic resources are expected from those actions described for past and present actions, the alternatives, and other known and reasonably foreseeable actions.</p>

Table 5.3-5. Cumulative Impacts Matrix – Provision 5 (Conservation Plan Management) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Socioeconomics (cont'd)	require additional funding by the farmer but costs would continue to be offset by cost share and rental payments.	Conservation Plan provides flexibility to design locally appropriate management specific for the lands to be enrolled, resulting in slightly lower expenditures	additional management may be required by the conservationist and included in the Conservation Plan provides maximum flexibility to provide local management solutions and appropriate expenditures.		
Environmental Justice	The program does not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, no significant anticipated disproportionate impacts to minority or low income populations are anticipated, thereby, no environmental justice inequity would occur.	Impacts to environmental justice are expected to be similar to those described in past and present actions.	Impacts to environmental justice populations are expected to be similar to those described for past and present actions and Alternative 1.	Implementation of Provision 5 in combination with reasonably foreseeable CRP program actions would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. No program changes are anticipated that would result in impacts to environmental justice populations.	No disproportionate adverse impacts to environmental justice populations are expected from CRP, similar USDA, and other State, and Federal conservation programs.

Table 5.3-5. Cumulative Impacts Matrix – Provision 5 (Conservation Plan Management) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Recreation</p>	<p>Long-term benefits to recreation resources would be achieved by continuing to conduct mid-contract management as required or voluntarily under present provisions. This maintains recreational values on CRP lands.</p>	<p>Long-term positive impacts to recreation are expected to be similar to those described for past and present actions. Completion of mid-contract management activities only if included in the Conservation Plan provides flexibility to design locally appropriate management specific for the lands to be enrolled.</p>	<p>Long-term positive benefits to recreation are expected to be similar to those described in past and present actions. Allowing States to specify by CP appropriate mid-contract management activities, while additional management may be required by the conservationist and included in the Conservation Plan provides maximum flexibility to provide local management solutions that maintain recreational values of CRP..</p>	<p>Continued enrollment of cropland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions.</p>	<p>Long-term benefits to recreational resources are expected to result from CRP, similar USDA programs and other State and federal conservation programs that aim to convert agricultural lands to long-term conservation purposes.</p>

Table 5.3-6. Cumulative Impacts Matrix – Provision 6 (Harvesting CRP)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i></p>	<p>Benefits to grassland vegetation would occur through periodic disturbance such as haying and grazing that prevents encroachment of woody plant growth and maximizes the health and vigor of the grassland stand. This also benefits many wildlife species that inhabit CRP if conducted in accordance with existing practices, standards and guidelines and harvesting plans are adjusted to resource conditions on the land just prior to haying or grazing; however, past and present actions would not be as beneficial to biological resources as Alternatives 1 and 2 as prescribed grazing is currently only authorized to control.</p>	<p>Benefits to biological resources are expected to be similar to those described in past and present actions with the addition of expanding use of prescribed grazing to control invasive plant species other than only kudzu. Allowing only currently harvested CPs to be managed harvest or routinely grazed, along with requiring additional NEPA analysis at the state level if changes to the timing, frequency, length of managed harvest or routine grazing or the PNS are desired, assures potentially negative or significant impacts are identified at the local level.</p>	<p>Benefits to biological resources are expected to be similar to those described for Alternative 1, but would enable additional types of CPs to be managed harvested or routinely grazed if additional NEPA analysis determines no significant adverse effects would occur.</p>	<p>Continued enrollment of cropland in programs which would restore habitat is expected to benefit biological resources. Future haying or grazing managed harvest, routine grazing, or emergency procedures would not significantly impact biological resources if the established conservation practice provisions, standards, and guidelines are followed, and the conservation plan is adapted to resource conditions on the land just prior to engaging in these activities.</p>	<p>Long-term benefits to biological resources are expected to result from CRP lands that aim to convert cropland to long-term conservation covers and provide wildlife habitat.</p>

Table 5.3-6. Cumulative Impacts Matrix – Provision 6 (Harvesting CRP) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Biological Resources <i>Vegetation, Wildlife, and Protected Species (cont'd)</i>	invasive kudzu				
Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i>	Direct negative impacts to surface water quality are minimized by past and present provisions of haying and grazing since either activity is not allowed closer than 120 feet from a permanent surface waterbody and livestock must be confined with fencing in all cases except gleaning grazing. Indirect impacts to water quality that can occur from vegetative cover loss causing soil erosion and increased sedimentation into nearby waterbodies are minimized by employment of BMPs that maintain over the long-term vegetative covers.	Similar to past and present actions, direct negative effects to water quality are minimized through adherence to established provisions, standards, and guidelines and use of BMPs that maintain the vegetative cover over the long term. Allowing prescribed grazing for control of invasive plant species other than kudzu enhances keeping the conservation cover to meet its intended purpose. Limiting routine grazing (including gleaning) and managed harvest to those CPs currently authorized, along with requiring additional	Benefits to water resources are expected to be similar to those described for Alternative 1, but would enable additional types of CPs to be managed harvested or routinely grazed if additional NEPA analysis determines no significant adverse effects to water would occur.	Continued enrollment of farmland in conservation programs is expected to have positive impacts to water quality similar to those described for the Alternatives. Future haying or grazing under either managed or emergency procedures would not significantly impact water if established conservation practice provisions, standards, and guidelines are followed, and the Conservation Plan is adapted to resource conditions on the land just prior to engaging in either activity.	Long-term benefits to water resources are expected to result from CRP lands that aim to convert cropland to long-term conservation covers that improve water quality, reduce surface and groundwater use, or create wetlands that recharge groundwater and reduce downstream flooding.

Table 5.3-6. Cumulative Impacts Matrix – Provision 6 (Harvesting CRP) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management (cont'd)</i>		NEPA analysis at the state level if changes to the timing, frequency, length of managed harvest or routine grazing or the PNS are desired, assures potentially negative or significant impacts to water resources are identified at the local level.			
Soil Resources	Past and present actions of haying and grazing do not directly or indirectly negatively affect soil resources when the established conservation provisions, standards, and guidelines are followed and BMPs are employed to minimize impacts. Limiting the stocking rate to 75% of determined total capacity and the total number of days that haying or grazing may take place, and employing BMPs to ensure adequate	Similar to past and present actions, direct negative effects to soil are minimized through adherence to established provisions, standards, and guidelines and use of BMPs that maintain the vegetative cover over the long term. Allowing prescribed grazing for control of invasive plant species other than kudzu enhances keeping the conservation cover to meet its intended purpose. Limiting routine grazing	Benefits to soil resources are expected to be similar to those described for Alternative 1, but would enable additional types of CPs to be managed harvested or routinely grazed if additional NEPA analysis determines no significant adverse effects to soil would occur.	Continued enrollment of agricultural lands in CRP and establishing long-term vegetative covers benefits soil resources. Future haying or grazing under either managed harvest, routine grazing, or emergency procedures would not significantly impact soil resources if the established conservation practice provisions, standards, and guidelines are followed, and the Conservation Plan is adapted to resource	Long-term benefits to soil resources are expected to result from CRP lands that aim to convert cropland to long-term conservation covers that reduce soil erosion and improve soil quality.

Table 5.3-6. Cumulative Impacts Matrix – Provision 6 (Harvesting CRP) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Soil Resources	dispersion of livestock minimize potential impacts. Long-term maintenance of the vegetative cover minimizes potential for increased soil erosion.	(including gleaning) and managed harvest to those CPs currently authorized, along with requiring additional NEPA analysis at the state level if changes to the timing, frequency, length of managed harvest or routine grazing or the PNS are desired assures potentially negative or significant impacts to water resources are identified at the local level.		conditions on the land just prior to engaging in these activities.	
Air Quality <i>Carbon Sequestration</i>	Past and present actions of haying and grazing would result in increased sequestration of carbon over lands under agricultural production if conducted in accordance with existing practices, standards and guidelines and harvesting plans are adjusted to resource conditions on the land	Similar to past and present actions, direct negative effects to carbon sequestration are minimized through adherence to established provisions, standards, and guidelines and use of BMPs that maintain the vegetative cover over the long term. Allowing prescribed grazing for control of invasive plant species other	Benefits to soil resources are expected to be similar to those described for Alternative 1, but would enable additional types of CPs to be managed harvested or routinely grazed if additional NEPA analysis determines no significant adverse effects to soil would occur.	Continued enrollment of agricultural lands in CRP and establishing long-term vegetative covers benefits carbon sequestration. Future haying or grazing under either managed harvest, routine grazing, or emergency procedures would not significantly impact soil resources if the established conservation practice	Long-term benefits to carbon sequestration are expected to result from CRP lands that aim to convert cropland to long-term conservation covers that reduce soil erosion and improve organic soil quality.

Table 5.3-6. Cumulative Impacts Matrix – Provision 6 (Harvesting CRP) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Air Quality <i>Carbon Sequestration (cont'd)</i></p>	<p>just prior to haying or grazing.</p>	<p>than kudzu enhances keeping the conservation cover to meet its intended purpose. Limiting routine grazing (including gleaning) and managed harvest to those CPs currently authorized, along with requiring additional NEPA analysis at the state level if changes to the timing, frequency, length of managed harvest or routine grazing or the PNS are desired assures potentially negative or significant impacts to water resources are identified at the local level.</p>		<p>provisions, standards, and guidelines are followed, and the Conservation Plan is adapted to resource conditions on the land just prior to engaging in these activities.</p>	

Table 5.3-6. Cumulative Impacts Matrix – Provision 6 (Harvesting CRP) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Socioeconomics	Continuation of current harvest, haying and grazing provisions would likely not change haying and grazing production on CRP acres from previous levels, and those CRP participants would still likely realize returns above the existing 25% rental payment reduction based on harvested acreage. Past and present managed haying and grazing would result in no significant positive or negative socioeconomic impacts, but can benefit individual operators. Continuation of present provisions is less beneficial than the action alternatives because it does not allow prescribed grazing for the control of invasive species other than kudzu.	Long-term beneficial impacts to socioeconomics are expected to have positive impacts similar to those actions described in past and present actions; however, Alternative 1 provides greater long-term beneficial impacts through the allowance of prescribed grazing for the control of additional invasive plant species.	Long-term beneficial impacts to socioeconomics are expected to have positive impacts similar to Alternative 1 and in past and present actions; however, Alternative 2 would allow additional CPs to be managed harvested or routinely grazed, if additional NEPA analysis determines no significant adverse effects to environmental resources would occur; this would potentially benefit participants more.	Continuing to allow harvesting and grazing of CRP offers financial benefits to participants while benefiting conservation covers and enhancing their ability to meet the intended conservation purpose.	Positive long-term benefits to socioeconomic resources are expected from those actions described for the alternatives considered and other known and reasonably foreseeable actions.

Table 5.3-6. Cumulative Impacts Matrix – Provision 6 (Harvesting CRP) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Environmental Justice	The program does not adversely, nor disproportionately impact minorities, women, or persons with disabilities. As such, no significant anticipated disproportionate impacts to minority or low income populations are anticipated, no environmental justice inequity would occur.	Impacts to environmental justice are expected to be similar to those described in past and present actions.	Impacts to environmental justice populations are expected to be similar to those described for past and present actions and Alternative 1.	Implementation of Provision 6 in combination with reasonably foreseeable CRP program actions would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. No program changes are anticipated that would result in impacts to environmental justice populations.	No disproportionate adverse impacts to environmental justice populations are expected from CRP, similar USDA, and other State, and Federal conservation programs.

Table 5.3-6. Cumulative Impacts Matrix – Provision 6 (Harvesting CRP) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Recreation</p>	<p>Long-term benefits to recreation resources would be achieved by continuing to conduct haying and grazing under present provisions. These activities if conducted appropriately in accordance with existing conservation practice standards, provisions, and guidelines, assure the health and viability of the conservation cover. Continuing to adjust haying and grazing plans to local resource conditions on the land would ensure recreational values are maintained on CRP. Present actions are less beneficial than the other alternatives since prescribed grazing to control invasive plant species is only allowed for kudzu.</p>	<p>Impacts to recreation are expected to be similar to those described in past and present actions. This alternative would allow for greater control of invasives by allowing prescribed grazing to occur on currently authorized CPs for additional invasive species thereby increasing wildlife habitat and hence recreation.</p>	<p>Impacts to recreation are expected to be similar to those described in for Alternative 1, except, allowing additional CPs to be managed harvested or routinely grazed if additional NEPA analysis determines no significant adverse effects to environmental resources would occur potentially enhances recreation through additional improved habitat.</p>	<p>Continued enrollment of agricultural lands in CRP and establishing long-term vegetative recreation. Future haying or grazing under either managed harvest, routine grazing, or emergency procedures would not significantly impact recreational values of CRP if the established conservation practice provisions, standards, and guidelines are followed, and the Conservation Plan is adapted to resource conditions on the land just prior to engaging in these activities.</p>	<p>Positive long-term cumulative benefits to recreation are expected to result from activities similar to those actions described for the alternatives considered and other known and reasonably foreseeable actions.</p>

Table 5.3-7. Cumulative Impacts Matrix – Provision 7 (NASS Cash Rental Rates)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i></p>	<p>Long-term benefits to biological resources would be achieved through continuation of existing rental payment rules to implement the CRP as program enrollment goals would continue to be met.</p>	<p>Long-term positive benefits to biological resources would be similar to those described in past and present actions. While geographic location of enrolled lands may shift due to changes to rental payment rules, enrollment goals would continue to be met.</p>	<p>Long-term positive benefits to biological resources would be similar to those described in Alternative 1. While geographic location of enrolled lands may shift due to changes to rental payment rules, enrollment goals would be largely met.</p>	<p>Continued enrollment of cropland in programs that would create or restore habitats is expected to benefit biological resources; however, under both action alternatives, if Targeted Signup acreage goals are substantially increased in the future, it is not likely they would be met.</p>	<p>Positive long-term cumulative benefits to biological resources would result from activities similar to those actions described for past and present actions and the alternatives considered.</p>
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i></p>	<p>Long-term benefits to water resources would be achieved through continuation of existing rental payment rules to implement the CRP as program enrollment goals would continue to be met.</p>	<p>Long-term positive benefits to water resources would be similar to those described in past and present actions. While geographic location of enrolled lands may shift due to changes to rental payment rules, enrollment goals would continue to be met.</p>	<p>Long-term positive benefits to water resources would be similar to those described in Alternative 1. While geographic location of enrolled lands may shift due to changes to rental payment rules, enrollment goals would be largely met.</p>	<p>Continued enrollment of cropland in conservation programs is expected to have positive impacts to water resources from activities similar to those described for the Alternatives. Under both action alternatives, if Targeted Signup acreage goals are substantially increased in the future it is not likely they would be met.</p>	<p>Positive long-term cumulative impacts to water resources would result from activities similar to those actions described past and present actions and the alternatives considered.</p>

Table 5.3-7. Cumulative Impacts Matrix – Provision 7 (NASS Cash Rental Rates) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Soil Resources	Long-term benefits to soil resources would be achieved through continuation of existing rental payment rules to implement the CRP as program enrollment goals would continue to be met.	Long-term positive benefits to soil resources would be similar to those described in past and present actions. While geographic location of enrolled lands may shift due to changes to rental payment rules, enrollment goals would continue to be met.	Long-term positive benefits to soil resources would be similar to those described in Alternative 1. While geographic location of enrolled lands may shift due to changes to rental payment rules, enrollment goals would be largely met.	Continued enrollment of farmland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions. Under both action alternatives, if Targeted Signup acreage goals are substantially increased in the future it is not likely they would be met.	Long-term benefits to soil resources would result from CRP, similar USDA programs and other State and federal conservation programs that aim to retire cropland for conservation purposes.
Air Quality <i>Carbon Sequestration</i>	Long-term benefits to air quality would be achieved through continuation of existing rental payment rules to implement the CRP as program enrollment goals would continue to be met.	Long-term positive benefits to air quality would be similar to those described in past and present actions. While geographic location of enrolled lands may shift due to changes to rental payment rules, enrollment goals would continue to be met.	Long-term positive benefits to air quality would be similar to those described in Alternative 1. While geographic location of enrolled lands may shift due to changes to rental payment rules, enrollment goals would be largely met.	Continued enrollment of cropland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions. Under both action alternatives, if Targeted Signup acreage goals are substantially increased in the future it is not likely they would be met.	Positive long-term cumulative benefits to air quality would result from activities similar to those actions described in the Alternatives.

Table 5.3-7. Cumulative Impacts Matrix – Provision 7 (NASS Cash Rental Rates) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Socioeconomics	Past and present rental payment rules would result in no significant positive or negative socioeconomic impacts, but would benefit individual operators. Long-term positive impacts to socioeconomic resources would result from providing financial incentives for conservation programs that contribute to societal benefits.	Long-term positive benefits to socioeconomic would be similar to those described in past and present actions. While geographic shifts in enrolled lands may occur through changes in rental rate rules and increased Targeted Signup incentives, the loss of CRP payments in these areas would be offset by returning some of these lands to agricultural production. Overall participation in the program would not decrease and enrollment goals would still be met.	Long-term positive benefits to socioeconomic would be similar to those described for Alternative 1; however, using NASS rental rates with no additional incentives for Targeted Signup current enrollment goals would likely fall short 0.5 million acres. This loss in acreage would be minimal and overall participation in the program would not decrease.	Continuing to offer financial incentives for conservation through cost share and annual rental payments would continue to have positive socioeconomic benefits. Under both action alternatives, if Targeted Signup acreage goals are substantially increased in the future it is not likely they would be met.	Positive long-term benefits to socioeconomic resources would occur from activities similar to those described for past and present actions, the alternatives considered, and other known and reasonably foreseeable actions.
Environmental Justice	No impacts to environmental justice would occur from past or present actions for providing annual rental payments to CRP participants. The program does not adversely, nor disproportionately	Impacts to environmental justice would be similar to those described in past and present actions. While shifts in enrolled lands may occur through payment changes, overall participation in the	Impacts to environmental justice populations are expected to be similar to those described for past and present actions or Alternative 1. While shifts in enrolled lands may occur through payment	Implementation of Provision 7 in combination with reasonably foreseeable CRP program actions would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. No	No disproportionate adverse impacts to environmental justice populations are expected from CRP, similar USDA, and other State and Federal conservation programs.

Table 5.3-7. Cumulative Impacts Matrix – Provision 7 (NASS Cash Rental Rates) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Environmental Justice (cont'd)	impact minorities, women, or persons with disabilities. thus no environmental justice inequity would occur.	program would not decrease and no disproportionate impacts to protected populations would occur.	changes, the effects would not disproportionately impact environmental justice populations.	program changes are anticipated that would result in disproportionate impacts to environmental justice populations, even though under both action alternatives, if Targeted Signup acreage goals are substantially increased in the future, it is not likely they would be met.	
Recreation	Long-term benefits to recreation would be achieved through continuation of existing rental payment rules to implement the CRP as program enrollment goals would continue to be met.	Long-term positive benefits to recreation would be similar to those described in past and present actions. While geographic location of enrolled lands may shift due to changes to rental payment rules, enrollment goals would continue to be met.	Long-term positive benefits to recreation would be similar to those described in Alternative 1. While geographic location of enrolled lands may shift due to changes to rental payment rules, enrollment goals would be largely met.	Continued enrollment of cropland in conservation programs is expected to have positive impacts similar to those actions described for past and present actions. Under both action alternatives, if Targeted Signup acreage goals are substantially increased in the future it is not likely they would be met.	Positive long-term cumulative impacts to recreation would result from CRP, similar USDA, and other State and Federal conservation programs.

Table 5.3-8. Cumulative Impacts Matrix – Provision 8 (Socially Disadvantage Farmer/Rancher Incentives)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i></p>	<p>Long-term benefits to biological resources would be achieved through continued enrollment of lands in CRP and enhancement of reaching enrollment goals by continuing to offer incentives to beginning and limited resource farmers and ranchers and Indian Tribes.</p>	<p>Long-term positive benefits to biological resources would be similar to those described for past and present actions but enhanced by also extending incentives to socially disadvantaged farmers and ranchers to enroll in CRP, making it more likely enrollment goals would be met.</p>	<p>Long-term positive benefits to biological resources would be enhanced by extending SIPs to the targeted populations, which would be more beneficial than present actions, but less beneficial than Alternative 1 that would offer higher payments.</p>	<p>Continuing to provide incentives to enroll cropland in programs that would create or restore vegetation and habitats is expected to benefit biological resources.</p>	<p>Positive long-term cumulative benefits to biological resources would result from activities similar to those actions described in the alternatives.</p>
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i></p>	<p>Long-term benefits to water resources would be achieved through continued enrollment of lands in CRP and enhancement of reaching enrollment goals by continuing to offer incentives to beginning and limited resource farmers and ranchers and Indian Tribes.</p>	<p>Long-term positive benefits to water resources would be similar to those described for past and present actions but enhanced by also extending incentives to socially disadvantaged farmers and ranchers to enroll in CRP, making it more likely enrollment goals would be met.</p>	<p>Long-term positive benefits to water resources would be enhanced by extending SIPs to the targeted populations, which would be more beneficial than present actions, but less beneficial than Alternative 1 that would offer higher payments.</p>	<p>Continuing to provide incentives to enroll cropland in programs that would install long-term vegetative covers and create wetlands would improve water quality and quantity.</p>	<p>Positive long-term cumulative benefits to water resources would result from activities similar to those actions described in the alternatives.</p>

Table 5.3-8. Cumulative Impacts Matrix – Provision 8 (Socially Disadvantage Farmer/Rancher Incentives) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Soil Resources	Long-term benefits to soil resources would be achieved through continued enrollment of lands in CRP and enhancement of reaching enrollment goals by continuing to offer incentives to beginning and limited resource farmers and ranchers and Indian Tribes.	Long-term positive benefits to soil resources would be similar to those described for past and present actions but enhanced by also extending incentives to socially disadvantaged farmers and ranchers to enroll in CRP, making it more likely enrollment goals would be met.	Long-term positive benefits to soil resources would be enhanced by extending SIPs to the targeted populations, which would be more beneficial than present actions, but less beneficial than Alternative 1 that would offer higher payments.	Continuing to provide incentives to enroll cropland in programs that would install long-term vegetative covers would reduce soil erosion and improve soil quality.	Positive long-term cumulative benefits to soil resources would result from activities similar to those actions described in the alternatives.
Air Quality <i>Carbon Sequestration</i>	Long-term benefits to carbon sequestration would be achieved through continued enrollment of lands in CRP and enhancement of reaching enrollment goals by continuing to offer incentives to beginning and limited resource farmers and ranchers and Indian Tribes.	Long-term positive benefits to carbon sequestration would be similar to those described for past and present actions but enhanced by also extending incentives to socially disadvantaged farmers and ranchers to enroll in CRP, making it more likely enrollment goals would be met.	Long-term positive benefits to carbon sequestration would be enhanced by extending SIPs to the targeted populations, which would be more beneficial than present actions, but less beneficial than Alternative 1 that would offer higher payments.	Continuing to provide incentives to enroll cropland in programs that would install long-term vegetative covers would reduce soil erosion and improve carbon sequestration.	Positive long-term cumulative benefits to carbon sequestration would result from activities similar to those actions described in the alternatives.

Table 5.3-8. Cumulative Impacts Matrix – Provision 8 (Socially Disadvantage Farmer/Rancher Incentives) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Socioeconomics	Long-term positive impacts to socioeconomic resources would result from conservation programs including financial incentives for conservation programs that contribute to societal benefits.	Long-term beneficial impacts to socioeconomic resources would occur similar to those actions described for past and present actions with additional benefits through increased cost share rates and greater advancement payments and extending these incentives to socially disadvantaged farmers and ranchers in addition to beginning and limited resource farmers, ranchers, and Indian Tribes.	Long-term positive benefits to socioeconomic resources would be enhanced by extending SIPs to the targeted populations, which would be more beneficial than present actions, but less beneficial than Alternative 1 that would offer higher payments.	Continuing to offer special financial incentives to targeted populations would enable a greater variety of people more representative of the U.S. population to participate in conservation programs, benefiting socioeconomic resources.	Positive long-term benefits to socioeconomic resources would occur from those actions described for the alternatives and other known and reasonably foreseeable actions.
Environmental Justice	Present CRP provisions for offering additional incentives to beginning and limited resource farmers, ranchers, and Indian Tribes target a portion of the environmental justice population, but do not include socially disadvantaged farmers and ranchers.	Long-term beneficial impacts to environmental justice populations would occur through the extension of increased cost share rates and greater advancement payments to socially disadvantaged farmers and ranchers in addition to beginning	Long-term positive benefits to environmental justice populations would occur by extending SIPs to the targeted populations, which would be more beneficial than present actions, but less beneficial than Alternative 1 that would	Implementation of Provision 8 in combination with reasonably foreseeable CRP program actions would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. No program changes are anticipated that would	No disproportionate adverse impacts to environmental justice populations are expected from CRP, similar USDA, and other State and Federal conservation programs.

Table 5.3-8. Cumulative Impacts Matrix – Provision 8 (Socially Disadvantage Farmer/Rancher Incentives) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Environmental Justice (cont'd)	Nevertheless, continuation of present procedures would not result in significant anticipated disproportionate impacts to minority or low income populations, thereby, not creating an environmental justice inequity.	and limited resource farmers, ranchers, and Indian Tribes. No disproportionate negative Impacts to environmental justice populations would occur.	offer higher payments. No disproportionate negative Impacts to environmental justice populations would occur.	result in disproportionate adverse impacts to environmental justice populations.	
Recreation	Long-term benefits to recreation would be achieved through continued enrollment of lands in CRP and enhancement of reaching enrollment goals by continuing to offer incentives to beginning and limited resource farmers and ranchers and Indian Tribes.	Long-term positive benefits to recreation would be similar to those described for past and present actions but enhanced by also extending incentives to socially disadvantaged farmers and ranchers to enroll in CRP, making it more likely enrollment goals would be met.	Long-term positive benefits to recreation would be enhanced by extending SIPs to the targeted populations, which would be more beneficial than present actions, but less beneficial than Alternative 1 that would offer higher payments.	Continuing to provide incentives to enroll cropland in programs that would create wildlife habitat and create wetlands increase recreational lands.	Positive long-term cumulative benefits to recreation would result from activities similar to those actions described in the alternatives and reasonably foreseeable future actions.

Table 5.3-9. Cumulative Impaxts Matrix – Provision 9 (Pollinator Conservation)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Biological Resources <i>Vegetation, Wildlife, and Protected Species</i></p>	<p>Long-term benefits to biological resources would be achieved by utilizing current NRCS practice standards and technical guides which reduce impacts to pollinator species.</p>	<p>Long-term positive benefits to biological resources are expected to be similar to those described for past and present actions. Modification of existing CPs to benefit pollinators and creation of a new Pollinator Habitat Conservation Practice would result in greater positive benefits to biological resources as these practices would result in the lesser use of pesticides and increase in flowering vegetation which would increase the diversity of the vegetative stand, and would also benefit the wildlife and protected species that utilize these habitats.</p>	<p>Long-term positive benefits to biological resources would be similar to those described in past and present actions and Alternative 1. Modification of existing CPs to benefit pollinators would provide vegetative diversity that would benefit plant and wildlife species.</p>	<p>Continued enrollment of farmland in programs that would create or restore habitats is expected to benefit biological resources. Changes to the CPs and creation of a new CP to benefit pollinators would be conducted to ensure the viability of the conservation cover.</p>	<p>Positive long-term cumulative benefits to biological resources are expected to result from activities similar to those actions described in past and present actions, the alternatives, and reasonably foreseeable future actions.</p>
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i></p>	<p>Long-term benefits to water resources would be achieved utilizing current NRCS practice standards and technical guides which</p>	<p>Long-term positive impacts to water resources are expected to be similar to those described for past and present actions.</p>	<p>Long-term positive benefits to water resources would be similar to those described in past and present actions.</p>	<p>Continued enrollment of land in conservation programs is expected to have positive impacts to water resources from</p>	<p>Positive long-term cumulative benefits to water resources are expected to result from activities similar to those actions</p>

Table 5.3-9. Cumulative Impacts Matrix – Provision 9 (Pollinator Conservation) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Water Resources <i>Floodplains, Ground and Surface Water, Wetlands, and Coastal Zone Management</i></p>	<p>reduce impacts to pollinator species.</p>	<p>Creation of a new CP would potentially enroll 1.6 million acres that could have been enrolled in a CP which was devoted to erosion reduction; however, the potential acreage to be enrolled is not expected to be substantial.</p>	<p>Modification of existing CPs to benefit pollinators would provide soil cover which would reduce potential for erosion and thereby benefit water resources.</p>	<p>activities similar to those described for the Alternatives.</p>	<p>described in past and present actions, the alternatives, and reasonably foreseeable future actions.</p>
<p>Soil Resources</p>	<p>Long-term benefits to soil resources would be achieved utilizing current NRCS practice standards and technical guides which reduce impacts to pollinator species.</p>	<p>Long-term positive impacts to soil resources are expected to be similar to those described for past and present actions. Creation of a new CP would potentially enroll 1.6 million acres that could have been enrolled in a CP which was devoted to erosion reduction; however, the potential acreage to be enrolled is not expected to be substantial.</p>	<p>Long-term positive benefits to soil resources are expected to be similar to those described in past and present actions. Modification of existing CPs to benefit pollinators would provide soil cover which would reduce potential for erosion and thereby benefit soil resources.</p>	<p>Continued enrollment of land in conservation programs is expected to have positive impacts to soil resources from activities similar to those described for the Alternatives.</p>	<p>Positive long-term cumulative benefits to soil resources are expected to result from activities similar to those actions described in past and present actions, the alternatives, and reasonably foreseeable future actions.</p>

Table 5.3-9. Cumulative Impacts Matrix – Provision 9 (Pollinator Conservation) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
<p>Air Quality <i>Carbon Sequestration</i></p>	<p>Long-term benefits to carbon sequestration resources would be achieved utilizing current NRCS practice standards and technical guides which reduce impacts to pollinator species.</p>	<p>Long-term positive impacts to carbon sequestration resources are expected to be similar to those described for past and present actions. Creation of a new CP would potentially enroll 1.6 million acres that could have been enrolled in a CP which was devoted to soil organic carbon; however, the potential acreage to be enrolled is not expected to be substantial.</p>	<p>Long-term positive benefits to carbon sequestration resources are expected to be similar to those described in past and present actions. Modification of existing CPs to benefit pollinators would provide no impact SOC sequestration.</p>	<p>Continued enrollment of land in conservation programs is expected to have positive impacts to carbon sequestration resources from activities similar to those described for the Alternatives.</p>	<p>Positive long-term cumulative benefits to carbon sequestration resources are expected from activities similar to those actions described in the Alternatives.</p>
<p>Socioeconomics</p>	<p>Long-term benefits to socioeconomic resources would be achieved utilizing current NRCS practice standards and technical guides which reduce impacts to pollinator species.</p>	<p>Impacts to socioeconomic resources would be similar to those described in past and present actions. Creation of a new CP and modification of existing CPs to benefit pollinators would result in minimal cost increases due to changes to planting mixes and the</p>	<p>Long-term beneficial impacts to socioeconomic resources would occur from similar actions described in past and present actions. Modification of existing CPs to benefit pollinators would provide positive benefits to socioeconomic resources by</p>	<p>Continued conservation of pollinator species is expected to have positive impacts similar to those actions described for past and present actions and the alternatives.</p>	<p>Positive long-term benefits to socioeconomic resources would occur from actions similar to those described for past and present actions, Alternative 2, and other known and reasonably foreseeable actions.</p>

Table 5.3-9. Cumulative Impacts Matrix – Provision 9 (Pollinator Conservation) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Socioeconomics		application and amounts of agricultural chemicals; however, impacts associated with these costs would be considered minimal due to the small potential size of the program.	increasing the number of pollinators on farm land thereby increasing farm productivity.		
Environmental Justice	No disproportionate adverse impacts to environmental justice populations would occur from present actions benefiting pollinators.	Impacts to environmental justice populations would be similar to those described in past and present actions.	Impacts to environmental justice populations would be similar to those described in past and present actions and Alternative 1.	Implementation of Provision 9 in combination with reasonably foreseeable CRP program actions would not adversely, nor disproportionately impact minorities, women, or persons with disabilities. No program changes are anticipated that would result in impacts to environmental justice populations.	No disproportionate adverse impacts to environmental justice populations are expected from CRP, similar USDA, and other State, and Federal conservation programs.

Table 5.3-9. Cumulative Impacts Matrix – Provision 9 (Pollinator Conservation) (cont'd)

Resource	Past and Present Actions	Alternative 1	Alternative 2	Future Actions	Cumulative Effects
Recreation	Long-term benefits to recreation resources would be achieved utilizing current NRCS practice standards and technical guides which reduce impacts to pollinator species.	Long-term positive impacts to soil resources are expected to be similar to those described for past and present actions. Creation of a new CP and modification of existing CPs to benefit pollinators would result in the creation of additional outdoor opportunities.	Impacts to recreation would be similar to those described in past and present actions and Alternative 1. Modification of existing CPs to benefit pollinators would provide benefits to wildlife which could result in additional outdoor recreation opportunities.	Continued conservation of pollinator species is expected to have positive impacts to recreation resources similar to those actions described for past and present actions and the alternatives.	Positive long-term cumulative impacts to recreation resources would have positive impacts similar to those actions described for past and present actions and other known and reasonably foreseeable actions.

5.4 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT RESOURCES

NEPA requires that environmental analysis include identification of any irreversible and irretrievable commitments of resources which would be involved should an action be implemented. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the use of these resources has on future generations. Irreversible effects primarily result from the use or destruction of a specific resource that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action. For the alternatives analyzed no irreversible or irretrievable resource commitments would occur.

5.5 SIGNIFICANT CUMULATIVE EFFECTS

Table 5.5-1 depicts which Provision and Action may have significant cumulative impacts as determined by this SEIS.

Table 5.5-1. Estimated Cumulative Effects by Alternative

	Provision 1	Provision 2	Provision 3	Provision 4	Provision 5	Provision 6	Provision 7	Provision 8	Provision 9
Past and Present Actions	+	+	+	N	N	+	+	+	+
Action Alternative 1	+	+	N	+	+	+	+	+	+
Action Alternative 2	-	S-	N	+	+	+	-	+	+
Future Actions	+	+	+	+	+	+	+	+	+
Cumulative Effects	+	+	+	+	+	+	+	+	+

Note:

S = Significant

N = No Effect

+ = Positive

- = Negative

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6.0 MITIGATION

6.1 INTRODUCTION

The purpose of mitigation is to reduce or eliminate potential negative impacts of the Proposed Action on affected resources. CEQ regulations (40 CFR 1508.20) state that mitigation includes:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

6.2 ROLES AND RESPONSIBILITIES

Regulations established by CEQ state that all relevant reasonable mitigation measures that could alleviate the environmental effects of a Proposed Action must be identified, even if they are outside the jurisdiction of the lead agency or the cooperating agencies. This serves to alert agencies or officials who can implement these extra measures, and will encourage them to do so. The lead agency for the alternatives analyzed is FSA.

6.3 MITIGATION RECOMMENDATIONS

The negative impacts associated with implementation of the action alternatives are expected to be temporary and localized in nature, and they would occur primarily during preparation of the land for installation of the constructed wetland and conservation covers. Prior to execution of the CRP contract, NRCS would complete a site-specific environmental evaluation that would reveal any protected resources on or adjacent to the proposed program lands. When sensitive resources, such as nesting birds or cultural resources are present or in the vicinity of the proposed lands, consultation with the appropriate regulatory agency would occur. Specific mitigation measures necessary to reduce or eliminate the potential localized negative impacts to those sensitive resources would be identified. If the environmental evaluation concludes that species or critical habitat protected under ESA are potentially present, and the proposed conservation activity on the land is determined to have negative impacts, it is not likely the land would be eligible for that activity. Activities may result in temporary localized impacts to biological, soil, and water resources; as well as air quality during preparation of the land for installing a CP; however, they may be mitigated through the implementation of BMPs like the installation of silt fencing, temporary covers, vegetative filter strips, or retention basins.

6.3.1 Biological Resources

Specific county NRCS Conservation Practice Standards, as well as State or county specific technical notes, must be adhered to and specific guidance on mitigation measures incorporated into the Conservation Plan. NRCS Conservation Practice Standard 511 Forage Harvest Management stipulates that vegetation must be cut only at a stage of maturity or harvest interval range that will provide adequate food reserves and/or basal or auxiliary tillers or buds for regrowth and/or reproduction to occur without loss of plant vigor (NRCS 2003a). Further, re-seeding annuals must only be cut or harvested at a stage of maturity and frequency that ensures production of viable seed and ample carryover of hard seed to maintain desired plant stand diversity. County-specific Conservation Practice Standards give specific cutting heights for typical vegetation cover species. When harvesting or haying, starting in the middle of the field and proceeding in parallel back and forth would enable certain wildlife sufficient time to temporarily relocate to adjacent areas in advance of machinery. Also, use of a flushing bar would reduce the potential for injuring or killing certain wildlife. In addition, the requirement for haying or grazing only 50 percent of a field and would result in the recommended mosaic environment that would provide both shelter and niches for wildlife, further reducing the impacts.

Under CPs that allow harvest, haying or grazing, certain wildlife species, guilds, suites, or ecosystems are targeted for conservation. The Conservation Plan developed for these CPs must have wildlife management as the primary objective. Development of the Conservation Plan requires habitat evaluation and appraisal to identify habitat-limiting factors, and the use of developed habitat evaluation tools designed to achieve habitat conditions for particular species, such as bobwhite quail, the prairie chicken, or ring-neck pheasants. Further, biological technical notes and assessment worksheets offer additional guidance. Specific guidance on managing CPs for wildlife is found in the county NRCS Conservation Practice Standard 645 Upland Wildlife Habitat Management. Application of this practice standard alone, or in combination with other supporting and facilitating practices such as grazing and prescribed burns, results in a conservation system to meet the goals of the Conservation Plan. Harvesting, haying and grazing on CPs is restricted during critical periods such as the PNS, brood rearing, deer fawning and elk calving seasons.

Mid-contract management activities should be designed to benefit plant diversity and wildlife, while protecting soil and water resources. Management methods are site specific, and include methods such as light disking, inter-seeding, tree thinning, and prescribed burning. Common agricultural BMPs should be used during these activities. The criteria and considerations for some activities are contained in State-specific NRCS Conservation Practice Standards.

Negative impacts from the initial establishment of native habitat for pollinators can be mitigated with the same procedures discussed above. In order to support pollinator habitat it is necessary to decrease the use of insecticides, both on the conservation cover and within adjacent fields, which may be detrimental to adjacent vegetation. In order to control destructive insects, pollinator habitat should include native vegetation that attracts beneficial predatory insects (NRCS No Date). To avoid negatively impacting pollinators when the use of insecticides is necessary, precautions such as avoiding use in areas that have flowers in bloom and using the least harmful formulation and application methods should be chosen (Black *et al.* 2007). To protect forbs and legumes that benefit native pollinators and other wildlife and provide insect

food sources for grassland nesting birds, spraying or other control of noxious weeds would be done on a “spot treatment” basis in accordance with the county specific NRCS Practice Standard 595 Pest Management. Some areas should remain untreated when implementing management techniques to promote recolonization of the treated areas. Moreover, disturbance of a site in multi-year cycles provides a source from which pollinators can spread (Black *et al.* 2007). Other recommendations include delaying management until most flowering plants have died back and a majority of the pollinators are in diapause (a state of dormancy) or have successfully laid eggs, which typically occur in late summer or early fall.

Site specific environmental evaluation on the project site in conjunction with either informal or formal consultation with the appropriate USFWS office would protect species included on the endangered species list. If negative impacts are identified, it is not likely activities would be approved.

Proper maintenance of heavy machinery to be used during implementation of the practices would limit the possibility of oil and gas leaks which may damage vegetation or wildlife habitats. Use of BMPs such as washing vehicles upon leaving and entering a work area would minimize the potential to spread invasive or noxious plant species. During restoration of fences, avoiding irregular terrain and water crossings could limit the potential impacts on wildlife migration patterns.

6.3.2 Water Resources

Some temporary disturbance may occur during activities for the installation of CPs such as the removal of trees and stumps, brush and other vegetation. In order to minimize the potential for soil erosion and sedimentation of waterbodies the guidance contained in Conservation Practice Standard 460 should be followed (NRCS 2003c). Land within 50 feet of a wetland, waterbody or perennial stream should be left undisturbed, and a temporary cover should be established to stabilize the soil and prevent sheet and rill and/or wind erosion until the planned CP is established.

One of the greatest threats to water quality would be removing established conservation cover and placing land back into production. The potential negative impacts include deposition of nutrients and pesticides, and/or sedimentation of surface and groundwater, as well as rivers and streams, including those that drain into coastal waters. There are several approaches available to manage water quality within a planning area and include both management measures and management practices (EPA 2009e). Management practices are specific, usually site-based approaches for controlling pollutant sources; whereas management measures are groups or categories of practices implemented to achieve comprehensive goals. Management practices can be categorized as either structural (constructed facilities capture, treat, and/or discharge treated runoff), or nonstructural (changes in activities or behavior to control the pollution at its source) (Table 6.3-1). Structural practices are the physical control of pollutants; while nonstructural practices prevent or reduce problems by reducing the generation of pollutants and managing them at the source.

Table 6.3-1. Examples of Structural and Nonstructural Agricultural and Forestry Management Practices

Structural Practices	Nonstructural Practices
Agricultural Management Practices	
<ul style="list-style-type: none"> • Contour buffer strips • Grassed waterway • Constructed wetlands • Restored wetlands • Grassed filters • Riparian buffers • Herbaceous wind barriers • Mulch • Live staking • Livestock exclusion fence (prevents livestock from wading into streams) • Sediment basins • Terraces 	<ul style="list-style-type: none"> • Brush management • Conservation coverage • Conservation tillage • Educational materials • Erosion and sediment control plan • Nutrient management plan • Pesticide management • Prescribed grazing • Residue management • Requirement for minimum riparian buffer • Rotational grazing • Workshops/training for developing nutrient management plans
Forestry Management Practices	
<ul style="list-style-type: none"> • Broad-based dips • Culverts • Establishment of riparian buffer • Mulch • Revegetation of firelines with adapted herbaceous species • Temporary cover crops • Windrows 	<ul style="list-style-type: none"> • Education campaign on forestry-related nonpoint source controls • Erosion and sediment control plans • Forest chemical management • Fire management • Operation of planting machines along the contour to avoid ditch formation • Planning and proper road layout and design • Preharvest planning • Training loggers and landowners about forest management practices, forest ecology, and silviculture

Source: Adapted from EPA 2009e

The use of conservation tillage is an effective method for reducing this potential impact (Fawcett No Date). Using conservation tillage, the crop residue left on the soil surface protects soil from both rainfall and wind erosion, slows runoff and prevents sealing of the soil surface, and improves water infiltration (Fawcett and Caruana 2001). There are also other erosion control practices such as contour planting, terracing, tile outlet terraces, and sediment basins that reduce runoff of nutrients (Fawcett No Date, Schepers *et al.* 1985). National Conservation Practice Standards exist for these practices, except tile outlet terracing, and are available through NRCS, with State and county specific guidance available at State NRCS offices. The use of crop rotation also has multiple beneficial impacts such as increasing soil fertility and

SOC, which reduces future need for nutrient application (Baldwin 2006). Conservation practices such as buffer strips, filter strips, and grassed waterways reduce sediments and nutrients from agricultural runoff; however, reducing nutrient losses depends on many other factors beyond physical control and includes methods and timing of nutrient application, local soil conditions, topography, hydrology, and climate (Fawcett No Date). Specific guidance for timing, application rates and methods, and testing and monitoring are contained in NRCS Conservation Practice Standard 590 (NRCS 2006d), with State-and county-specific guidance available at State NRCS offices. Coordination between local FSA, NRCS, and EPA on watershed and catchment initiatives and conservation planning would further minimize the potential for sedimentation, and nutrient and agricultural chemical deposition into water bodies.

Construction operations during activities to restore hydrology (i.e., the construction of dams and levees) may temporarily increase the potential for erosion and sedimentation of adjacent waterbodies, as well as flooding during periods of peak flow. In order to mitigate these potential impacts, planning should consider both water quantity and water quality (NRCS 1978). A runoff management system must be designed that complies with local jurisdiction requirements and regulations for controlling sediment, erosion and runoff, and that regulate storm discharges from the site to a safe and adequate outlet. Systems should be designed to ensure soluble pollutants and salts do not enter local water supplies. Design criteria are contained within NRCS Conservation Practice Standard 570 Runoff Management System. Similarly, State NRCS offices would also have specific State and county guidance, including applicable technical notes related to erosion and runoff control on construction sites.

Management components of the grazing plan specify the schedule and number of days when grazing can be conducted. Criteria that maintains or improves water quality and quantity (other than limiting grazing to within no more than 120 feet of a permanent surface waterbody) include: (1) maintain adequate ground cover and plant density to ensure adequate filtering capacity of the vegetation; and (2) employ BMPs to minimize concentrated livestock areas that ensure animal offal is dispersed. The latter would include siting any supplemental livestock feeding, handling, and watering facilities and gates in such a manner to ensure adequate dispersion of animals. This would also assist in reducing potential soil erosion and compaction, which could lead to excess runoff. To maintain soil condition, measures to ensure adequate ground cover, litter, and canopy to maintain or improve infiltration and organic content would be stipulated in the plan. Fencing must be used to control grazing animals' access to other areas adjacent to the grazed field and protect permanent surface waterbodies. Fencing may be designed in accordance with county-specific guidance contained in NRCS CP Standard 382 Fence to minimize impacts to wildlife while serving its purpose to confine livestock. These latter measures include altering the height of the top and bottom wires, and making them smooth rather than barbed.

Proper maintenance of heavy machinery to be used during implementation of the practices would limit the possibility of oil and gas leaks which may degrade surface water quality and wetlands. Implementing BMPs during the establishment of access roads would reduce or eliminate impacts to surface water quality and wetlands.

6.3.3 Soil Resources

Some of the same erosion control practices discussed in 6.3.2 (e.g., land clearing mitigation, conservation tillage, contour planting and terracing) also apply to soil resources. Other measures include cover crops, no till practices, cross wind trap strips, and wind barriers to reduce soil loss from sheet and rill, and/or water erosion. Additional erosion control practices, such as the ones described below, would be considered appropriate on a site-specific basis when implementing the practices, especially on lands designated as HEL. Additionally, a site-specific environmental evaluation to determine erodibility potential, and to ensure HEL compliance requirements are met, would be done.

Erosion control measures that may be utilized on a site-specific basis:

- Shorten the length of exposure of the erosive surface and prevent sediment from moving offsite by utilizing mulch, silt fences, gravel bags and vegetative barriers that trap sediment
- Clear smaller areas of vegetation at different intervals
- Schedule excavation during low-rainfall periods
- Cover disturbed soils with mulch or vegetation
- Control concentrated water flows that form rills and gullies
- Minimize the length and gradient of slopes
- Inspect and maintain all structural control measures
- Avoid soil compaction by restricting the use of heavy equipment and vehicles to limited areas
- Break up or till compacted soils prior to vegetating

Soil compaction, when soil particles are pressed together reducing pore space, occurs in response to the weight of machinery and grazing animals. Compaction restricts rooting depth, and decreases soil moisture and soil temperature (NRCS 1996). Compaction can be reduced by decreasing the number of trips across an area, avoiding activities when soils are wet, and maintaining or increasing SOC. Additional measures in forestry activities such as harvesting while the soil is frozen or snow covered will also reduce compaction.

6.3.4 Air Quality

The greatest potential for impacting air quality would occur when a CP is removed and land is placed back into agricultural production. The impacts arise from the production activity as well as the loss of the carbon sequestration capacity. The majority of the impacts from land conversion activities can be mitigated through the methods described above, as well as standard BMPs for agricultural practices such as combining tractor operations to reduce passes and ceasing activities when wind speeds exceed 25 mph. All Federal, State, and local emission control standards should be observed.

MITIGATION

Conservation tillage, as described above, increases carbon storage through enhanced soil sequestration of carbon, as well as decreased emissions of the greenhouse gases methane and nitrous oxide (EPA 2006). Other practices, such as grazing land management practices (e.g., rotational grazing) also lead to net greenhouse gas reductions. Similarly, the installation of conservation and riparian buffers to prevent soil erosion and runoff increases carbon storage within the vegetative cover.

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11.0 GLOSSARY

Action Alternative: A suggested alternate action to the Proposed Action that (a) meets basic purpose and need; (b) is achievable within the legislated time constraints for the program; (c) is achievable within the budget appropriated for the program; and (d) does not violate any existing laws.

Apiculture: The act of beekeeping in order to pollinate crops, as well as collect honey and beeswax.

Best management practice: Methods that have been determined to be the most effective, practical means of preventing or reducing pollution from non-point sources.

Biodiversity: Refers to the variety and variability among living organisms and the ecological complexes in which they occur. Diversity can be defined as the number of different items and their relative frequencies. For biological diversity, these items are organized at many levels, ranging from complete ecosystems to the biochemical structures that are the molecular basis of heredity. Thus, the term encompasses different ecosystems, species, and genes.

Boundary Fences: A permanent barrier to fence livestock, wildlife, or people to facilitate resource management measures and practices.

Carbon sequestration: Or storage of carbon in cropping systems involves storage in nonremoved crop residues and below ground root systems, as well as carbon being stored in the soil as organic matter in varying stages of decomposition.

Cation Exchange Capacity: The measure of the ability for a soil to exchange cations (a positively charged ion) between the soil and soil solution; typically used to quantify soil fertility, or its ability to retain nutrients.

Clean Air Act: The law that defines the EPA's responsibilities for protecting and improving the air quality and stratospheric ozone layer of the U.S. (Title 42, Chapter 85 of the U.S.C.).

Conservation Buffers: Strips or other areas with vegetation that help control pollutants, erosion, and other environmental concerns.

Cooperating Agencies: Any Federal agency other than the lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in proposed legislation, a proposed action, or reasonable alternative. Cooperating agencies may include a State or local agency with similar qualifications, at the invitation of the lead Federal agency.

Critical Wildlife Habitat: Habitat critical to state determined species of concern. Maintenance and conservation of this habitat is critical to prevent the listing of the species of concern as a threatened or endangered species.

Cropland: Two subcategories of cropland are recognized: cultivated and noncultivated. Cultivated cropland is land in row crops or close-grown crops, as well as land (e.g., hayland or pastureland) that is in a rotation with row or close-grown crops. Noncultivated cropland includes permanent hayland and horticultural cropland.

Cultural Resources: Prehistoric and historic districts, sites, buildings, structures or objects that may be archaeological, architectural or traditional cultural properties.

Disturbance: Any event or series of events that disrupt ecosystem, community, or population structure and alters the physical environment.

Ecoregion: A continuous geographic area in which similar climate patterns, soil, and topography allow the development of similar types of vegetation.

Ecosystem: A system of both living organisms and the non-living (physical) environment in which they live that functions as a system.

Endangered Species Act (ESA): The ESA is for the protection and recovery of imperiled species, and the protection of the ecosystems upon which they depend. The FWS is primarily responsible for terrestrial and freshwater species, while the National Marine Fisheries Service (NMFS), a part of NOAA, is responsible for marine wildlife.

Environmental Impact Statement (EIS): A document providing full and fair discussion of significant environmental impacts for a proposed action and informing decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment. A Federal agency must prepare an EIS when a proposed action or program constitutes a major Federal action that may have significant impacts to the natural or human environment.

EPA: the U.S. Environmental Protection Agency; the overarching environmental enforcement agency in the United States. It provides general guidance to all Federal agencies in the implementation of the NEPA Process and reviews all EIS produced by Federal agencies.

Eutrophication: The slow aging process during which a lake, estuary, or bay evolves into a bog or marsh and eventually disappears. During the later stages of eutrophication the water body is choked by abundant plant life due to higher levels of nutritive compounds such as nitrogen and phosphorus. Human activities can accelerate the process.

Fish and Wildlife Service: An agency within the U.S. Department of the Interior responsible for the conservation and protection of fish, wildlife, and plants, and the enhancement of their habitats.

Floodplains: Defined by the Federal Emergency Management Agency (FEMA) as those low lying areas that are subject to inundation by a 100-year flood, a flood that has a one percent chance of being equaled or exceeded in any given year. They provide for flood and erosion control support that helps maintain water quality and contribute to sustaining groundwater levels. Floodplains also provide habitat for plant and animal species, recreational opportunities and aesthetic benefits.

Forest Lands: Lands at least ten percent of stocked by forest type trees of any size Forest Service: A USDA agency that manages a portfolio of more than 193 million acres of national forest and grasslands throughout the United States.

Fossil Fuel: Oil, coal and natural gas, and their byproducts formed by the decomposition of buried dead organisms.

Gigaton: One billion tons.

Greenhouse Effect: The warming of the Earth's atmosphere attributed to a buildup of carbon dioxide or other gases; some scientists think that this buildup allows the sun's rays to heat the Earth, while making the infra-red radiation atmosphere opaque to infra-red radiation, thereby preventing a counterbalancing loss of heat.

Greenhouse Gas: A gas, such as carbon dioxide or methane, which contributes to potential climate change.

Groundwater: The water that flows underground and is stored in natural geologic formations called aquifers.

Hayland: Areas of dominantly perennial grasses, either native or non-native species, planted and/or intensively managed as pure or mixed stands.

Hectare: A land unit measurement equal to an area of 10,000 square meters, 2.471 acres, or 0.004 square miles.

Hypoxic Zone: An area near the bottom of a body of water that contains less than two parts per million of dissolved oxygen. This can cause fish to leave the area and stress or kill bottom dwelling organisms that can't leave the area. Primarily caused by excess nutrients and stratification in the water column (non-mixing) that cause excessive algal growth, which when it dies sinks to the bottom and decomposing organisms consume available oxygen.

Invasive Species: An alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

Major Land Resource Areas: Geographically associated land resource units that are characterized by soils, water, climate, vegetation, land use, and type of farming.

No Action Alternative: A suggested alternative to the Proposed Action that assumes that no Federal program like CRP is implemented and assesses the potential impacts this could have on the natural and human environment. This alternative does not meet the purpose and need of the proposed program, but is carried forward to provide a baseline against which the impacts of the Proposed Action can be assessed.

Nonattainment Area: A geographic area that consistently does not meet clean air levels set by the EPA in the National Ambient Air Quality Standards (NAAQS).

Nonpoint Source (NPS) Pollution: Pollution that comes from several diffuse sources. NPS pollution occurs when rainfall or snowmelt runoff picks up and carries both natural and human-made pollutants and deposits them into ground and surface water or aquifers.

Noxious Weed: Any plant or plant product that can directly or indirectly bring harm to agriculture, the public health, navigation, irrigation, natural resources, or the environment.

Nutrient: Any substance assimilated by living things that promotes growth. The term is generally applied to nitrogen and phosphorus in wastewater, but is also applied to other essential and trace elements.

Parent Material: The original layer of bedrock, which over time and through erosional forces, becomes the main mineral component of soil in an area.

Prime and Unique Farmland: Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water). Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops (7 CFR 657.5)

Pastureland: Land managed primarily for the production of introduced forage plants for livestock grazing. Pastureland cover may consist of a single species in a pure stand, a grass mixture, or a grass-legume mixture.

Photosynthesis: The process in which plants, algae, and some bacteria convert carbon dioxide into organic compounds (complex carbon molecules such as sugar) using the energy from sunlight.

Pollinator: An organism that transports pollen from the male reproductive organs (anthers) of a flower to the female reproductive organs (stigma). Insects, such as bees, wasps, butterflies, moths, and beetles make up the majority of pollinators.

Programmatic Environmental Impact Statement (PEIS): An evaluation of the potential environmental consequences of implementing a new Federal program on a national scale. The CRP PEIS assesses the potential impacts of the action and the No Action alternatives on potentially affected environmental and socioeconomic resources.

Protected Species: Those species federally designated as threatened or endangered and protected by the Endangered Species Act (ESA).

Rangeland: An open region over which livestock may roam and feed. The plant cover is principally native grasses, grass-like plants, and shrubs. It includes natural grasslands, savannahs, certain shrubs and grass-like lands, most deserts, tundra, alpine communities, coastal marshlands, and wet meadows. It also includes lands that are re-vegetated naturally or artificially and are managed like native vegetation.

Region of Influence (ROI):

Riparian Zone: the transitional area along streams and rivers, usually composed of hydrophilic (thrive in continuously wet soil) vegetation that stabilize banks, filter sediments and nutrients, moderate temperatures, and provide habitat and food for streamside wildlife.

Saturated Subsurface Zone (Phreatic Zone): zone of saturated conditions in the subsurface (also known as water table)

Scoping: A process used to identify the scope and significance of issues related to a Proposed Action while involving the public and other key stakeholders in developing alternatives and weighing the importance of issues to be analyzed.

Sediment Basins: An earth embankment that captures sediment and water runoff from sloping fields.

Shelterbelts: Single or multiple long, narrow strips of trees and shrubs planted in a variety of patterns to mitigate the movement of wind.

Soil: The top most layer of the Earth composed unconsolidated mineral and organic material that serves as the natural growth medium for land plants

Soil Organic Matter (SOM): The organic fraction of the soil that includes plant and animal residue at various stages of decomposition, exclusive of undecayed plant and animal residue.

Succession: The replacement of one plant community by another over time, often ending in a stable, terminal community until disturbance resets the natural progression.

Surface Water: As defined by the EPA, surface waters are waters of the United States, such as rivers, streams, creeks, lakes, and reservoirs, supporting everyday life through uses such as drinking water and other public uses, irrigation, and industrial uses.

Total Maximum Daily Load (TMDL): A calculation of the maximum amount of a pollutant that can be released into a waterbody without exceeding water quality standards.

United States and Territories: Any of the 50 States of the United States, the Commonwealth of Puerto Rico, the District of Columbia, the U.S. Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Republic of Palau, the Federated States of Micronesia, and the Republic of the Marshall Islands.

GLOSSARY

Wetlands: Wetlands are areas in which water is either covering, or is at or near, the surface of the soil all year or fluctuates during the year. Water saturation is the dominate factor that determines the nature of soil development and the types of plant and wildlife communities found within. Wetlands are usually categorized as marshes, fens, bogs, and swamps.

Windbreak: A living barrier of trees, or trees and shrubs, established to protect soil resources, conserve energy or moisture, provide shelter, and reduce wind erosion.

Woodland: Forest land producing trees not typically used as saw timber products and not included in calculations of the commercial forest land.

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APPENDIX A:
**Conservation Practice Description, Sign-Up Type and
Payment Provisions**

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Conservation Practice Description, Sign-up Type, and Payment Provisions

Practice Code	Title	Description	Sign-up	Rental Payment	Maintenance Payment (per acre)		SIP	PIP
					Pre 10/1/09	Post 10/1/09		
CP1	Establishment of Permanent Introduced Grasses and Legumes	This practice is to establish a vegetative cover of introduced grasses and legumes on eligible cropland that will enhance environmental benefits.	General	SRR	\$2	\$0	No	No
CP2	Establishment of Permanent Native Grasses	This practice is to establish a vegetative cover of native grasses on eligible cropland that will enhance environmental benefits.	General	SRR	\$2	\$0	No	No
CP3	Tree Planting	This practice is to establish a stand of trees in a timber planting that will enhance environmental benefits.	General	SRR	\$2	\$0	No	No
CP3A	Hardwood Tree Planting	This practice is to establish a stand of predominantly hardwood trees in a timber planting that will enhance environmental benefits. For CRP purposes, Longleaf Pine and Atlantic White Cedar shall be treated as hardwood trees, if planted at rates appropriate for the site index.	General	SRR	\$2	\$0	No	No
CP4B	Permanent Wildlife Habitat (Corridors)	The purpose of this practice is to do both of the following: <ul style="list-style-type: none"> Establish a permanent wildlife corridor between two existing wildlife habitat areas that are not connected by a suitable corridor for environmental benefits; and enhance the wildlife in the designated or surrounding area. 	General	SRR	\$2	\$0	No	No
CP4D	Permanent Wildlife Habitat	The purpose of this practice is to establish a permanent wildlife habitat cover to enhance environmental benefits for the wildlife habitat of the designated or surrounding areas.	General	SRR	\$2	\$0	No	No

**Conservation Practice Description, Sign-up Type, and Payment Provisions
(cont'd)**

Practice Code	Title	Description	Sign-up	Rental Payment	Maintenance Payment (per acre)		SIP	PIP
					Pre 10/1/09	Post 10/1/09		
CP5A	Field Windbreak Establishment	The purpose of this practice is to establish windbreaks to improve the environmental benefits on a farm or ranch to: <ul style="list-style-type: none"> • reduce cropland erosion below soil loss tolerance • enhance the wildlife habitat on the designated area. 	Continuous	SRR+20 %	\$4	\$2	Yes	Yes
CP8A	Grass Waterways	The purpose of this practice is to: <ul style="list-style-type: none"> • convey runoff from terraces, diversions, or other water concentrations without causing erosion or flooding • improve water quality. 	Continuous	SRR+20 %	\$2	\$0	Yes	Yes
CP9	Shallow Water Areas for Wildlife	The purpose of this practice is to develop or restore shallow water areas to an average depth of 6 to 18 inches for wildlife. The shallow water area must provide a source of water for wildlife for the majority of the year. For areas west of the 100th meridian that receive less than 25 inches of annual precipitation, the shallow water area must provide a source of water for wildlife for a minimum of 4 months of the year. This is not a pond development or wetland restoration practice; however, this practice may be constructed on suitable hydric and nonhydric soils.	Continuous	SRR	\$2	\$0	No	Yes

**Conservation Practice Description, Sign-up Type, and Payment Provisions
(cont'd)**

Practice Code	Title	Description	Sign-up	Rental Payment	Maintenance Payment (per acre)		SIP	PIP
					Pre 10/1/09	Post 10/1/09		
CP10	Vegetative Cover - Grass - Already Established	This practice code is used to identify land: <ul style="list-style-type: none"> • under CRP-1, if a grass cover approved for the applicable signup is already established • not under CRP-1, with a grass cover approved for the applicable signup already established. 	General	SRR	\$2	\$0	No	No
CP11	Vegetative Cover - Trees - Already Established	This practice code is used to identify land established to trees that is under CRP-1 at the time the acreage is offered and the producer elects to reoffer the acreage to be devoted to trees.	General	SRR	\$2	\$0	No	No
CP12	Wildlife Food Plot	This practice is to establish annual or perennial wildlife food plots that will enhance wildlife and wildlife habitat.	General	SRR	\$2	\$0	No	No
CP15A	Establishment of Permanent Vegetative Cover (Contour Grass Strips)	The purpose of this practice is to establish strips of permanent vegetative cover generally following the contour on eligible cropland alternated with wider cultivated strips farmed on the contour that will reduce erosion and control runoff.	Continuous	SRR	\$2	\$0	No	Yes
CP15B	Establishment of Permanent Vegetative Cover (Contour Grass Strips), on Terraces	The purpose of this practice is to establish strips of permanent vegetative cover generally following the contour on eligible cropland alternated with wider cultivated strips farmed on the contour that will reduce erosion and control runoff.	Continuous	SRR	\$2	\$0	No	No
CP16A	Shelterbelt Establishment	The purpose of this practice is to establish shelterbelts on a farm or ranch to enhance the wildlife habitat on the designated area, save energy, and protect farmsteads or livestock areas.	Continuous	SRR	\$4	\$2	Yes	Yes

**Conservation Practice Description, Sign-up Type, and Payment Provisions
(cont'd)**

Practice Code	Title	Description	Sign-up	Rental Payment	Maintenance Payment (per acre)		SIP	PIP
					Pre 10/1/09	Post 10/1/09		
CP17A	Living Snow Fences	The purpose of this practice is to establish living snow fences on a farm or ranch to manage snow, provide living screen, and enhance the wildlife habitat on the designated area.	Continuous	SRR	\$4	\$2	Yes	Yes
CP18B	Establishment of Permanent Vegetation to Reduce Salinity	This practice is to either establish permanent salt tolerant vegetative cover within saline seep areas or establish permanent vegetative cover in areas causing seeps, including trees or shrubs, on eligible cropland that will improve the environmental benefits of a farm or ranch. The cover must address the resource problem with the minimum acreage needed to control the saline seep.	Continuous	SRR	\$2	\$0	No	Yes
CP18C	Establishment of Permanent Salt Tolerant Vegetative Cover	The purpose of this practice is to establish permanent salt tolerant vegetative cover on eligible cropland with existing high water tables that will improve the environmental benefits of a farm or ranch. The cover must address the resource problem with the minimum acreage needed to control the saline seep.	Continuous	SRR	\$2	\$0	No	Yes

**Conservation Practice Description, Sign-up Type, and Payment Provisions
(cont'd)**

Practice Code	Title	Description	Sign-up	Rental Payment	Maintenance Payment (per acre)		SIP	PIP
					Pre 10/1/09	Post 10/1/09		
CP21	Filter Strips	The purpose of this practice is to remove nutrients, sediment, organic matter, pesticides, and other pollutants from surface runoff and subsurface flow by deposition, absorption, plant uptake, denitrification, and other processes, and thereby reduce pollution and protect surface water and subsurface water quality while enhancing the ecosystem of the water body.	Continuous	SRR+20 %	\$2, \$6, \$7	\$0, \$4, \$5	Yes	Yes
CP22	Riparian Buffers	The purposes of this practice are to: <ul style="list-style-type: none"> • remove nutrients, sediment, organic matter, pesticides, and other pollutants from surface runoff and subsurface flow by deposition, absorption, plant uptake, denitrification, and other processes, and thereby reduce pollution and protect surface water and subsurface water quality while enhancing the ecosystem of the water body; • create shade to lower water temperature to improve habitat for aquatic organisms; and • provide a source of detritus and large woody debris for aquatic organisms and habitat for wildlife. 	Continuous	SRR+20 %	\$4, \$6, \$7	\$2, \$4, \$5	Yes	Yes

**Conservation Practice Description, Sign-up Type, and Payment Provisions
(cont'd)**

Practice Code	Title	Description	Sign-up	Rental Payment	Maintenance Payment (per acre)		SIP	PIP
					Pre 10/1/09	Post 10/1/09		
CP23 (Note 1)	Wetland Restoration	This practice was to restore or modify the hydric soil conditions, hydrologic conditions, hydrophytic plant communities, and wetland functions that occurred prior to modification to the extent practicable or for the purpose of favoring specific wetland functions or values. It was also aimed at maintaining, developing, or improving habitat for waterfowl, fur-bearers, or other wetland associated flora and fauna.	(Note 1)	SRR+20 %	\$2	\$0	Yes	Yes
CP23 (Notes 2 & 3)	Wetland Restoration - Floodplain	The purpose of this practice is to restore the functions and values of wetland ecosystems that have been devoted to agricultural use. The level of restoration of the wetland ecosystem shall be determined by the producer in consultation with NRCS or TSP.	Continuous	SRR+20 %	\$2	\$0	Yes	Yes
CP23A (Notes 2 & 3)	Wetland Restoration - Non-floodplain	The purpose of this practice is to restore the functions and values of wetland ecosystems that have been devoted to agricultural use. The level of restoration of the wetland ecosystem shall be determined by the producer in consultation with NRCS or TSP.	Continuous	SRR+20 %	\$2	\$0	Yes	Yes

**Conservation Practice Description, Sign-up Type, and Payment Provisions
(cont'd)**

Practice Code	Title	Description	Sign-up	Rental Payment	Maintenance Payment (per acre)		SIP	PIP
					Pre 10/1/09	Post 10/1/09		
CP24	Cross Wind Trap Strips	The purpose of this practice is to establish 1 or more strips, varying in size, of permanent vegetative cover resistant to wind erosion perpendicular to the prevailing wind direction on eligible cropland with a wind erosion EI greater than or equal to 4 (EI ≥ 4) that will: <ul style="list-style-type: none"> • reduce on-farm wind erosion; • trap wind-borne sediments and sediment borne contaminants; and • help protect public health and safety. 	Continuous	SRR	\$2	\$0	No	Yes
CP25	Rare and Declining Habitats	The purpose of this practice is to restore the functions and values of critically endangered, endangered, and threatened habitats. The extent of the restoration is determined by the specifications developed at the State level. Note: All State specifications must be reviewed and approved by DAFP.	General	SRR	\$2	\$0	No	No
CP27	Farmable Wetland	The purpose of this practice is to restore the functions and values of wetlands that have been devoted to agricultural use. Hydrology and vegetation must be restored to the maximum extent possible, as determined by USDA.	Continuous	SRR+20 %	\$2	\$0	Yes	Yes
CP28	Farmable Wetland Buffer	The purpose of this practice is to provide a vegetative buffer around wetlands (CP27) to remove sediment, nutrients, and pollutants from impacting the wetland and to provide wildlife habitat for the associated wetland.	Continuous	SRR+20 %	\$2	\$0	Yes	Yes

**Conservation Practice Description, Sign-up Type, and Payment Provisions
(cont'd)**

Practice Code	Title	Description	Sign-up	Rental Payment	Maintenance Payment (per acre)		SIP	PIP
					Pre 10/1/09	Post 10/1/09		
CP29	Marginal Pastureland Wildlife Habitat Buffer	The purpose of this practice is to remove nutrients, sediment, organic matter, pesticides, and other pollutants from surface runoff and subsurface flow by deposition, absorption, plant uptake, denitrification, and other processes, and thereby reduce pollution and protect surface water and subsurface water quality while enhancing the ecosystem of the water body. By restoring native plant communities, characteristics for the site will assist in stabilizing stream banks, reducing flood damage impacts, and restoring and enhancing wildlife habitat.	Continuous	SRR+20 %	\$2, \$6, \$7	\$0, \$4, \$5	Yes	Yes
CP30	Marginal Pastureland Wetland Buffer	The purpose of this practice is to remove nutrients, sediment, organic matter, pesticides, and other pollutants from surface runoff and subsurface flow by deposition, absorption, plant uptake, denitrification, and other processes, and thereby reduce pollution and protect surface water and subsurface water quality while enhancing the ecosystem of the water body. The practice will enhance and/or restore hydrology and plant communities associated with existing or degraded wetland complexes. The goal is to enhance water quality, reduce nutrient and pollutant levels, and improve wildlife habitat.	Continuous	SRR+20 %	\$2, \$6, \$7	\$0, \$4, \$5	Yes	Yes

**Conservation Practice Description, Sign-up Type, and Payment Provisions
(cont'd)**

Practice Code	Title	Description	Sign-up	Rental Payment	Maintenance Payment (per acre)		SIP	PIP
					Pre 10/1/09	Post 10/1/09		
CP31 (Note 3)	Bottomland Timber Establishment on Wetlands	<p>The purpose of this practice is to establish and provide for the long-term viability of a bottomland hardwood stand of trees that will:</p> <ul style="list-style-type: none"> • control sheet, rill, scour, and other erosion; • reduce water, air, or land pollution; • restore and enhance the natural and beneficial functions of wetlands; • promote carbon sequestration; and • restore and connect wildlife habitat. 	Continuous	SRR+20 %	\$2	\$0	Yes	Yes
CP32	Expired CRP Hardwood Tree Planting on Marginal Pastureland	<p>This practice code is used to identify land established to trees that was under CRP-1 that expired September 30, 2001, or before, at the time the acreage is offered and the producer elects to reoffer the acreage to be devoted to hardwood trees.</p> <p>Thinning and/or creating open areas in eligible existing tree stands are not a separate practice. The open areas shall be considered CP32.</p>	General	SRR	\$2	\$0	No	No

**Conservation Practice Description, Sign-up Type, and Payment Provisions
(cont'd)**

Practice Code	Title	Description	Sign-up	Rental Payment	Maintenance Payment (per acre)		SIP	PIP
					Pre 10/1/09	Post 10/1/09		
CP33	Habitat Buffers for Upland Birds	<p>The purpose of this practice is to provide food and cover for quail and upland birds in cropland areas. Secondary benefits may include reducing soil erosion from wind and water, increasing soil and water quality, protecting and enhancing the on-farm ecosystem.</p> <p>Apply this practice around the field edges of eligible cropland that is suitably located and adaptable to the establishment of wildlife habitat for primarily quail and upland bird species. Upland habitat buffers will be allowed to re-vegetate by natural herbaceous succession, and/or will be established to adapted species of native, warm-season grass, legumes, wildflowers, forbs, and limited shrub and tree plantings, as specified according to an approved conservation plan.</p> <p>The conservation plan must be designed according to the NRCS FOTG.</p>	Continuous	SRR	\$2	\$0	Yes	Yes
CP36	Longleaf Pine – Establishment	The primary purpose of CP36 is to re-establish longleaf pine stands at densities that benefit wildlife species and protect water quality.	Continuous	SRR	\$2	\$0	Yes	Yes

**Conservation Practice Description, Sign-up Type, and Payment Provisions
(cont'd)**

Practice Code	Title	Description	Sign-up	Rental Payment	Maintenance Payment (per acre)		SIP	PIP
					Pre 10/1/09	Post 10/1/09		
CP37 (Note 3)	Duck Nesting Habitat	This practice is to enhance duck nesting habitat on the most duck-productive areas of Iowa, Minnesota, Montana, North Dakota, and South Dakota to restore the functions and values of wetland ecosystems that have been devoted to agricultural use. The level of restoration of the wetland ecosystem shall be determined by the producer in consultation with FSA and NRCS or TSP.	Continuous	SRR+20 %	\$2	\$0	Yes	Yes
CP38A	State Acres for Wildlife Enhancement (SAFE) - Buffers (Note 4)	Because SAFE projects are very state-specific, management activities (and restrictions thereof) should follow specific SAFE practice standards.	Continuous	SRR	\$2	\$0	Yes	Yes
CP38B	SAFE - Wetlands (Note 4)	Because SAFE projects are very state-specific, management activities (and restrictions thereof) should follow specific SAFE practice standards.	Continuous	SRR	\$2	\$0	Yes	Yes
CP38C	SAFE - Trees (Note 4)	Because SAFE projects are very state-specific, management activities (and restrictions thereof) should follow specific SAFE practice standards.	Continuous	SRR	\$2	\$0	Yes	Yes
CP38D	SAFE - Longleaf Pine (Note 4)	Because SAFE projects are very state-specific, management activities (and restrictions thereof) should follow specific SAFE practice standards.	Continuous	SRR	\$2	\$0	Yes	Yes
CP38E	SAFE – Grass (Note 4)	Because SAFE projects are very state-specific, management activities (and restrictions thereof) should follow specific SAFE practice standards.	Continuous	SRR	\$2	\$0	Yes	Yes

**Conservation Practice Description, Sign-up Type, and Payment Provisions
(cont'd)**

Practice Code	Title	Description	Sign-up	Rental Payment	Maintenance Payment (per acre)		SIP	PIP
					Pre 10/1/09	Post 10/1/09		
CP39	FWP Constructed Wetland	The purpose of this practice is to develop a constructed wetland to treat effluent from row crop agricultural drainage systems. The constructed wetland system is designed to reduce nutrient and sediment loading and provide other water quality benefits while providing wildlife habitat.	Continuous	SRR+20 %	\$2	\$0	Yes	Yes
CP40	FWP Aquaculture Wetland Restoration	The purpose of this practice is to restore habitat or the functions and values of wetland ecosystems that have been devoted to commercial pond-raised aquaculture. The level of restoration of the wetland ecosystem shall be determined by the producer in consultation with NRCS or TSP.	Continuous	SRR+20 %	\$2	\$0	Yes	Yes
CP41	FWP Flooded Prairie Wetlands	The purpose of this practice is to restore the functions and values of wetlands that have been subject to the natural overflow of a prairie wetland. Hydrology and vegetation must be restored to the maximum extent possible, as determined by USDA.	Continuous	SRR+20 %	\$2	\$0	Yes	Yes

SRR: Soil Rental Rate

Notes:

1. Include acres enrolled under General Sign-up and CREP through 2003.
2. Includes acres enrolled under continuous sign-up and CREP after 2003.
3. Incentives apply for contracts approved after November 3, 2008.
4. For SAFE practices, the title is determined by each State.

Revised Maintenance incentive applies to all new contracts except CREP, which are governed by approved CREP agreements. Maintenance incentive for re-enrolled practices is \$0 unless specified in the CREP agreement. The rates are the default maintenance incentive rates; however, STC's may lower the rate.

APPENDIX B:
Currently Eligible Haying and Grazing Practices

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Conservation Practice Haying and Grazing Eligibility

Practice Code	Practice	No Action Alternative (Current Provisions)		
		Grazing	Haying	Harvest (Biomass)
CP1	Establishment of permanent introduced grasses and legumes	Yes	Yes	Yes
CP2	Establishment of permanent native grasses	Yes	Yes	Yes
CP3	Tree planting	No	N/A	No
CP3A	Hardwood tree planting	No	N/A	No
CP3A	Hardwood tree planting (Longleaf pine)	No	N/A	No
CP4B	Permanent wildlife habitat (Corridors)	Yes	Yes	Yes
CP4D	Permanent wildlife habitat	Yes	Yes	Yes
CP5A	Field windbreaks	No	No	No
CP6	Diversions	No	N/A	No
CP7	Erosion control structures	No	N/A	No
CP8A	Grass waterways	Yes (Gleaning)	No	No
CP9	Shallow water areas for wildlife	No	No	No
CP10	Vegetative Cover – grass – already established	Yes	Yes	Yes
CP11	Vegetative Cover – trees – already established	No	No	No
CP12	Wildlife food plots	No	No	No
CP15A & 15B	Contour grass strips	Yes (Gleaning 15A)	No	No
CP16A	Shelterbelt establishment	No	No	No

Conservation Practice Haying and Grazing Eligibility (cont'd)

Practice Code	Practice	No Action Alternative (Current Provisions)		
		Grazing	Haying	Harvest (Biomass)
CP17	Living snow fences	No	No	No
CP18B & 18C	Salinity reducing vegetation	Yes	Yes	Yes
CP21	Filter strips (grass)	Yes (Gleaning)	No	No
CP22	Riparian buffers (trees)	No	No	No
CP23 (Note 1)	Wetland restoration	No	No	No
CP23A (Note 2)	Wetland restoration - flood plain	No	No	No
CP23 (Note 2)	Wetland Restoration - Non-flood plain and playas	No	No	No
CP24	Cross wind trap strips	No	No	No
CP25	Rare and declining habitats	No	No	No
CP27	Farmable wetlands (wetland)	No	No	No
CP28	Farmable wetland buffer (upland)	No	No	No
CP29	Wildlife habitat buffer on marginal pasture	No	No	No
CP30	Wetland buffer on marginal pasture	No	No	No
CP31	Bottomland hardwood trees on wetlands	No	No	No
CP32	Hardwood trees (previously expired contracts)	No	No	No

Conservation Practice Haying and Grazing Eligibility (cont'd)

Practice Code	Practice	No Action Alternative (Current Provisions)		
		Grazing	Haying	Harvest (Biomass)
CP33	Upland bird habitat buffers	Yes (Gleaning)	No	No
CP36	Longleaf pine establishment	No	No	No
CP37	Duck nesting habitat (Prairie pothole area)	No	No	No
CP38A - E	State Acres for Wildlife Enhancement (SAFE)	No	See Note 3	See Note 3
CP39	FWP Constructed Wetlands	No	No	No
CP40	Aquaculture Wetland Restoration	No	No	No
CP41	FWP Flooded Prairie Wetland	No	No	No

Notes:

1. Include acres enrolled under general sign-up and CREP through 2003.
2. Includes acres enrolled under continuous sign-up and CREP after 2003.
3. Because SAFE projects are very state-specific, management activities (and restrictions thereof) should follow specific SAFE practice standards.

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APPENDIX C:
PNS and Managed Haying and Grazing Frequencies

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Current PNS and Managed Haying and Grazing Frequencies

State	PNS	Managed Haying ¹	Managed Grazing ¹
Alabama	Apr 1 – Jul 15	1/3	1/3
Alaska	May 15 – Jun 25	1/3	1/3
Arizona ²	Apr 1 – Jul 1	1/10	1/10
Arkansas	Apr 1 – Jul 15	1/3	1/3
California ^{2,4}	Apr 1 – Jul 1	1/10	1/3
Colorado ²	Mar 15 – Jul 15	1/10	1/5
Connecticut	Apr 15 – Aug 1	1/3	1/3
Delaware	Apr 15 – Aug 15	1/3	1/3
Florida	Mar 1 – Jul 15	1/3	1/3
Georgia	Apr 1 – Aug 1	1/3	1/3
Hawaii		1/3	1/3
Idaho ²	Apr 1 – Aug 1	1/10	1/10
Illinois	Apr 15 – Aug 1	1/3	1/3
Indiana ²	Apr 1 – Aug 1	1/3	1/3
Iowa	May 15 – Aug 1	1/3	1/3
Kansas ²	Apr 15 – Jul 15	1/10	1/5
Kentucky	May 15 – Aug 1	1/3	1/3
Louisiana	Apr 15 – Jul 15	1/3	1/3
Maine	May 1 – Aug 1	1/3	1/3
Maryland	Apr 15 – Aug 15	1/3	1/3
Massachusetts	Apr 15 – Aug 1	1/3	1/3
Michigan	Apr 1 – Jul 31	1/3	1/3
Minnesota (north)	May 15 – Aug 1	1/3	1/3
Minnesota (south)	Jun 1 – Aug 1	1/3	1/3
Mississippi	Apr 1 – Aug 15	1/3	1/3
Missouri	May 1 – Jul 15	1/3	1/3
Montana ²	May 15 – Aug 1	1/10	1/5

State	PNS	Managed Haying ¹	Managed Grazing ¹
Nebraska ²	May 1 – July 15	1/10	1/5
Nevada ²	May 1 – Jul 15	1/10	1/10
New Hampshire	Apr 15 – Aug 1	1/3	1/3
New Jersey	Apr 1 – Jul 15	1/3	1/3
New Mexico ²	Mar 1 – Jul 1	1/10	1/10
New York ²	Apr 1 – Aug 1	1/3	1/3
North Carolina	Apr 15 – Sep 15	1/3	1/3
North Dakota ²	Apr 15 – Aug 1	1/10	1/5
Ohio	Mar 15 – Jul 15	1/3	1/3
Oklahoma ²	May 1 – Jul 1	1/10	1/5
Oregon (east) ^{2,3}	Mar 1- Jul 15	1/10	1/10
Oregon (west) ^{2,3}	Mar 1- Jul 15	1/3	1/3
Pennsylvania	Apr 1 – Aug 1	1/3	1/3
Rhode Island	Apr 1 – Aug 1	1/3	1/3
South Carolina	Apr 1 – Sep 1	1/3	1/3
South Dakota ²	May 1- Aug 1	1/10	1/5
Tennessee	Apr 15 – Jul 1	1/3	1/3
Texas ²	Mar 1 – Jul 1	1/10	1/5
Utah ²	Apr 1 – Jul 15	1/10	1/10
Vermont	Apr 15 – Jul 31	1/3	1/3
Virginia	Apr 15 – Aug 1	1/3	1/3
Washington (east) ^{2,3}	Apr 1 – Aug 1	1/10	1/10
Washington (west) ^{2,3}	Apr 1 – Aug 1	1/3	1/3
West Virginia	Mar 15 – Jul 15	1/3	1/3
Wisconsin ²	May 15 – Aug 1	1/3	1/3
Wyoming ²	May 15 – Jul 15	1/10	1/5

Notes:

1. 1/n is once every n years.
2. Post-National Wildlife Federation Settlement frequencies.
3. Different frequencies were established for lands east and west of the Cascades.
4. Applies to all counties except Siskiyou and Modoc whose PNS is May 1 – Aug 1.

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**APPENDIX D:
Public Meeting Handouts**

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CRP Supplemental Environmental Impact Statement Summary of Preliminary Action Alternatives

Provision	Action Alternative 1	Action Alternative 2
General	USDA targeted national conservation initiatives: <ul style="list-style-type: none"> • Water Resource Protection Initiative • Highly Erodible Land Initiative • Regional Restoration of Critical Wildlife Habitat of National Concern 	No new initiatives and reduce existing wetland initiative
Maximum Enrollment	Maintain 32 million acres apportioning 24 million acres for General Signup and 8 million acres to targeted signup consisting of: <ul style="list-style-type: none"> • CREP – 2.0 million acres • Continuous – 2.5 million acres • Farmable Wetlands – 0.75 million acres • SAFE – 1.0 million acres • Initiatives – 1.75 million acres 	Reduce acreage to 20 million acres for General Signup and 4 million acres for targeted signup as follows: <ul style="list-style-type: none"> • CREP – 1.0 million acres • Continuous – 1.7 million acres • Farmable Wetlands – 0.30 million acres • SAFE – 0.40 million acres • Initiatives – 0.40 million acres
Alfalfa and Legumes	6 years alfalfa and 2 years other eligible commodity rotation meet CRP crop history requirements	10 years alfalfa and 2 years other eligible commodity rotation meets CRP crop history requirements
Acreage Limitation	Exception to 25% cropland limit with county government approval; no additional per county acreage limitation	Exception to 25% cropland limit with county government approval; limited enrollment to 50% of county's cropland
Contract Management	Required Conservation Plan management throughout contract making mid-contract management optional	Required Conservation Plan management throughout contract with mid-contract management required on certain appropriate conservation practices
Harvesting and Grazing	<ul style="list-style-type: none"> • Routine harvesting and grazing only allowed on currently authorized CPs, changes to Primary Nesting Season, timing or frequency require additional NEPA • Prescribed grazing not allowed on CP23, CP23A, CP25, CP27, or CP31 • Payment reduction commensurate with economic value of activity 	<ul style="list-style-type: none"> • Making different CPs eligible for routine grazing and managed harvesting, as well as changes to Primary Nesting Season, timing, or frequency require additional NEPA • Prescribed grazing same as Alternative 1 • Payment reduction commensurate with economic value of activity
Rental Payments	<ul style="list-style-type: none"> • For new General Signup contracts, use updated NASS adjusted rental rates with soil productivity adjustments • Incentives for targeted signup may be increased to ensure program acreage targets are achieved • Maintenance incentives reduced to zero 	<ul style="list-style-type: none"> • For new contracts, use updated NASS adjusted rental rates with soil productivity adjustments • Incentives for targeted signup will remain the same as current program • Maintenance incentives reduced to zero
Special Treatment of CRP Land	<ul style="list-style-type: none"> • Special treatment for land transitioning from retiring farmer to beginning or socially disadvantaged farmer • Dispense \$6.25 million for each program year 2009-2012 	Same as Alternative 1
Incentives for Certain Farmers and Ranchers	<ul style="list-style-type: none"> • Beginning, limited resource, socially disadvantaged, and Indian Tribes eligible for cost share at least 25% above applicable rates (up to 90%) • advance payments of up to 30% of the amount determined for the purchase of materials and services 	Eligible for Signup Incentives only
Pollinators	Develop new Pollinator Habitat Conservation Practice and modify existing practices to benefit pollinators	Modify existing practices to benefit pollinators

*Please visit our project website for additional information or to provide a comment on these alternatives:
<http://public.geo-marine.com>*

COMMENT SHEET

Conservation Reserve Program Supplemental Environmental Impact Statement

Thank you for providing your comments on the proposed alternatives for the Conservation Reserve Program Supplemental EIS. Please provide us with your comments no later than **October 19, 2009**. Comments may be submitted at the meeting, by visiting the project website at <http://public.geo-marine.com>, or via U.S. Postal Service to the address below.

Lined area for writing comments.

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Please Print

Name: _____
Zip Code: _____
Affiliation: _____

Please give this form to one of the representatives here at the meeting or mail to:

CRP SEIS
c/o TEC inc
8 San Jose Dr., Suite 3B
Newport News, VA 23606

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APPENDIX E:
Expiring Acres by State

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Expiring Acres by State*

STATE	2009 Expiring Acres	2010 Expiring Acres	2011 Expiring Acres	2012 Expiring Acres	Total by State
AL	30886.12	56201.63	66306.62	55302.77	208697.14
AR	10599.11	25044.06	10872.88	29579.86	76095.91
CA	2728.11	6151.6	11812.88	14606.96	35299.55
CO	505564.49	442284.86	317104.74	436791.54	1701745.63
CT	20.76		9.89		30.65
DE	517.17	349.8	106.52	276.03	1249.52
FL	2075.42	6760.26	5528.59	6337.94	20702.21
GA	30149.44	31330.39	19259.41	20950.79	101690.03
IA	197820.72	174284.09	67304.09	195786.05	635194.95
ID	65114.57	143274.65	85499.98	135912.85	429802.05
IL	75825.39	78044.05	51768.26	82045.31	287683.01
IN	16426.24	16820.73	18829.88	30885.17	82962.02
KS	390388.4	616849.07	531324.61	467429.51	2005991.59
KY	20626.58	41626.01	21567.82	30141.91	113962.32
LA	7304.09	9528.98	5900.73	22059.19	44792.99
MA			5		5
MD	4847.98	3043.21	2341.71	6776.93	17009.83
ME	1285.48	3847.53	5139.78	4923.01	15195.8
MI	15823.41	15959.94	9064.89	13300.65	54148.89
MN	173358.83	76329.12	101857.88	240708.28	592254.11
MO	3317.5	11711.08	7890.18	33974.08	56892.84
MS	55484.84	83943.94	64069.48	106534.57	310032.83
MT	236665.91	356466.79	405680.05	559589.8	1558402.55
NC	9848.23	13356.56	8260.92	5307.36	36773.07
ND	279625.4	266307.15	373657.87	769407.61	1688998.03
NE	173809.74	176961.46	134741.86	146165.69	631678.75
NH		4.04		0.24	4.28
NJ	25.77	204.49	290.22	198.22	718.7
NM	18405.95	69179.69	98925.8	60088.34	246599.78
NV	146.36				146.36
NY	3211.21	2825.09	1516.66	2849.59	10402.55
OH	19555	22712.76	13423.35	24898.54	80589.65
OK	185346.09	222047.01	176935.77	127111.88	711440.75
OR	38341.38	59087.84	50134.46	39834.43	187398.11
PA	5134.44	2222.27	20362.96	26140.08	53859.75
SC	22088.68	28991.88	17186.45	23156.87	91423.88
SD	230940.5	119794.62	68138.3	110379.63	529253.05
TN	15459.85	30951.41	18338.93	15375.22	80125.41
TX	742854.27	502777.04	370508.5	390781.65	2006921.46
UT	64837.59	73737.11	13190.91	10097.79	161863.4
VA	4363.4	3957.9	4815.54	5239.07	18375.91
VT	26.36	5.59	49.16	3.98	85.09
WA	144526.59	197183.67	56959.85	185776.8	584446.91
WI	30225.45	43571.95	32005.91	47868.76	153672.07
WV	188.22	39.5	99.81	108.65	436.18
WY	81883.79	38894.09	27630.88	15299.31	163708.07
Total by year	3917674.8	4074664.91	3296420	4500002.9	15788762.63

Appendix E. Expiring Acres by all CP types*

2009		2010		2011		2012		Total by CP
CP	Exp Acres	CP	Exp Acres	CP	Exp Acres	CP	Exp Acres	
CP1	218807.85	CP1	363959.51	CP1	323830.22	CP1	417404.22	1324001.8
CP2	656351.68	CP2	997557.75	CP2	669034.11	CP2	788185.59	3111129.13
CP3	32822.31	CP3	43488.08	CP3	29494.46	CP3	46382.18	152187.03
CP3A	8006.27	CP3A	17885.29	CP3A	7422.15	CP3A	71379.48	104693.19
CP4	21056.62	CP4	8300.43	CP4	5031.88	CP4	10087.23	44476.16
CP4A	7.3	CP4A	4.13	CP4A	7.45	CP4A	11.61	30.49
CP4B	173.05	CP4B	241.73	CP4B	195.26	CP4B	908.19	1518.23
CP4C	192.82	CP4C	2.19	CP4C	56.07	CP4C	51.62	302.7
CP4D	439163.17	CP4D	167395.74	CP4D	141365.09	CP4D	288560.72	1036484.72
CP5	41.55	CP5	49.77	CP5	44.44	CP5	80.86	216.62
CP5A	365.59	CP5A	284.44	CP5A	2288.32	CP5A	5001.2	7939.55
CP6	25.76	CP6	0.97	CP6	12.46	CP6	4.37	43.56
CP7	27.88	CP7	4.11	CP7	8.99	CP7	54.84	95.82
CP8	285.65	CP8	387.84	CP8	543.15	CP8	441.47	1658.11
CP8A	6664.87	CP8A	9549.59	CP8A	17182.54	CP8A	17672.27	51069.27
CP9	8135.05	CP9	6951.96	CP9	9363.47	CP9	8018.64	32469.12
		CP9A	4.99	CP9A	31.74	CP9A	3.13	39.86
CP10	2158088.49	CP10	2130406.27	CP10	1818654.85	CP10	2143558.2	8250707.84
CP11	114016.94	CP11	163269.49	CP11	131399.08	CP11	145572.16	554257.67
CP12	8553.88	CP12	7723.51	CP12	2191.77	CP12	3368.56	21837.72
CP13	107.36	CP13	47.19	CP13	71.62	CP13	130.28	356.45
CP13A	7.2	CP13A	46.78	CP13A	6.33	CP13A	113.66	173.97
				CP13B	1.58			1.58
CP13C	10.59	CP13C	28.18	CP13C	1.37			40.14
CP13D	24.6	CP13D	41.08	CP13D	17.48	CP13D	2.77	85.93
		CP14	55.99	CP14	2.29	CP14	82.99	141.27
CP15	401.69	CP15	67.79	CP15	271.83	CP15	237.27	978.58
CP15A	10917.75	CP15A	10272.48	CP15A	5957.87	CP15A	5468.81	32616.91
CP15B	60.98	CP15B	7.19	CP15B	639.8	CP15B	1389.06	2097.03
CP16	149.34	CP16	4.52	CP16	138.76	CP16	146.41	439.03
CP16A	142.62	CP16A	344.58	CP16A	1432.78	CP16A	2159.73	4079.71
CP17	3.02	CP17	2.3	CP17	2.03	CP17	31.55	38.9
CP17A	114.41	CP17A	32.53	CP17A	117.12	CP17A	10.81	274.87
CP18	211.15	CP18	100.78	CP18	224.32	CP18	104.94	641.19
CP18A	19.75	CP18A	8.99	CP18A	2.36	CP18A	61.48	92.58
CP18B	3516.97	CP18B	5510.96	CP18B	4991.69	CP18B	3269.79	17289.41

**Appendix E. Expiring Acres by all CP types*
(cont'd)**

2009		2010		2011		2012		Total by CP
CP	Exp Acres	CP	Exp Acres	CP	Exp Acres	CP	Exp Acres	
CP18C	15050.09	CP18C	10364.03	CP18C	10172.91	CP18C	9225.79	44812.82
CP19	610.49	CP19	229.28	CP19	1738.91	CP19	485.23	3063.91
CP20	133.5	CP20	1045.61	CP20	282.07	CP20	462.65	1923.83
CP21	52644.83	CP21	53635.88	CP21	65541	CP21	133337.44	305159.15
CP22	4995.51	CP22	4420.98	CP22	12802.51	CP22	43042.72	65261.72
CP23	129875.63	CP23	46951.49	CP23	20610.58	CP23	327704.76	525142.46
CP23A	145.17	CP23A	17.38			CP23A	121.49	284.04
CP24	240.43	CP24	598.79	CP24	47.12	CP24	178.95	1065.29
CP25	11481.07	CP25	12348.92	CP25	11677.59	CP25	17506.73	53014.31
						CP26	17.4	17.4
CP27	22.17			CP27	218.85	CP27	1382.04	1623.06
CP28	20.56	CP28	84.95	CP28	627.64	CP28	4409.41	5142.56
CP29	51.59	CP29	80.1	CP29	22.05	CP29	73.19	226.93
CP30	71.6	CP30	0.34	CP30	0.47	CP30	74.5	146.91
		CP31	8.5			CP31	3.12	11.62
CP33	188.37	CP33	29.67	CP33	49.32	CP33	86.11	353.47
CP35A	77.4							77.4
CP35E	23.91							23.91
CP35I	59.84							59.84
CP36	58.64					CP36	37.4	96.04
CP37	321.57							321.57
				CP38A	27.11			27.11
CP38C	3.18							3.18
						CP38D	12.7	12.7
CP38E	884.34					CP38E	19.93	904.27
None	12220.78	None	10809.86	None	565.12	None	1865.23	25460.99
TOTAL	3917674.83	TOTAL	4074664.91	TOTAL	3296419.98	TOTAL	4500002.9	15788762.63

*Expiring acres based upon September 2009 data and do not include REX acreage.

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APPENDIX F:
Alfalfa Harvested by State and Year

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Alfalfa Harvested by State and Year

State	Acres in thousands						Average
	2007	2006	2005	2004	2003	2002	
Arizona	250	250	260	240	235	230	244
Arkansas	20	15	20	20	20	20	19
California	990	1,100	1,040	1,050	1,090	1,160	1,072
Colorado	800	780	800	770	800	780	788
Connecticut	8	7	8	7	8	9	8
Delaware	5	5	5	6	5	6	5
Idaho	1,200	1,180	1,140	1,180	1,200	1,170	1,178
Illinois	380	440	400	400	425	450	416
Indiana	320	360	340	350	350	300	337
Iowa	1,140	1,180	1,250	1,300	1,330	1,250	1,242
Kansas	800	950	850	950	1,000	950	917
Kentucky	300	280	260	240	250	320	275
Maine	9	10	11	10	9	12	10
Maryland	40	40	40	40	45	60	44
Massachusetts	7	13	14	13	14	16	13
Michigan	800	830	900	850	850	870	850
Minnesota	1,150	1,350	1,350	1,350	1,375	1,400	1,329
Missouri	400	390	450	400	410	400	408
Montana	1,650	1,550	1,750	1,400	1,600	1,500	1,575
Nebraska	1,150	1,250	1,250	1,250	1,450	1,350	1,283
Nevada	265	270	260	250	265	275	264
New Hampshire	6	8	8	7	8	8	8
New Jersey	20	25	25	30	30	30	27
New Mexico	260	220	240	240	230	240	238
New York	420	370	450	470	600	610	487
North Carolina	9	10	11	12	18	20	13
North Dakota	1,650	1,450	1,650	1,300	1,600	1,450	1,517
Ohio	430	470	510	470	580	620	513
Oklahoma	380	380	320	360	310	350	350
Oregon	400	430	400	480	480	495	448
Pennsylvania	600	500	510	540	550	680	563
Rhode Island	1	1	2	2	2	2	2
South Dakota	2,250	1,800	2,400	2,250	2,700	2,250	2,275
Tennessee	25	30	35	35	30	30	31
Texas	140	150	150	150	140	150	147
Utah	560	560	540	560	545	565	555
Vermont	40	45	45	40	40	45	43

**Alfalfa Harvested by State and Year
(cont'd)**

State	Acres in thousands						Average
	2007	2006	2005	2004	2003	2002	
Virginia	11	110	110	110	130	140	102
Washington	440	440	450	480	510	510	472
West Virginia	25	35	35	45	45	50	39
Wisconsin	1,650	1,650	1,550	1,600	1,600	1,650	1,617
Wyoming	570	500	600	450	650	500	545
United States	21,670	21,434	22,439	21,707	23,529	22,923	22,284

Alabama, Florida, Georgia, Louisiana, Mississippi, and South Carolina do not separate alfalfa from all other hay statistics, therefore those numbers are not included.

Source: NASS 2009b

APPENDICES

Alfalfa and Alfalfa Mixtures for Hay: Area Harvested, Yield, and Production
by State and United States, 2007-2008 and Forecasted October 1, 2009

State	Area Harvested		Yield		Production		
	2008	2009	2008	2009	2007	2008	2009
	-- 1,000 Acres --		---- Tons ----		----- 1,000 Tons -----		
AZ	260	270	8.60	8.50	2,040	2,236	2,295
CA	950	975	7.00	6.70	7,128	6,650	6,533
CO	820	840	3.30	3.70	3,034	2,706	3,108
ID	1,130	1,140	4.40	4.10	4,715	4,972	4,674
IL	350	340	3.90	3.80	1,406	1,365	1,292
IN	300	300	4.00	3.90	756	1,200	1,170
IA	1,150	1,000	3.80	3.70	4,240	4,370	3,700
KS	700	750	4.10	4.30	2,960	2,870	3,225
KY	240	230	2.50	3.60	504	600	828
MI	770	730	2.90	2.80	1,925	2,233	2,044
MN	1,350	1,250	3.10	2.80	3,190	4,185	3,500
MO	350	330	3.20	3.70	1,140	1,120	1,221
MT	1,600	1,650	1.90	2.20	3,740	3,040	3,630
NE	970	970	3.95	4.10	4,015	3,832	3,977
NV	270	275	4.80	5.00	1,193	1,296	1,375
NM	250	240	5.20	5.20	1,248	1,300	1,248
NY	350	420	2.70	2.00	1,008	945	840
ND	1,660	1,500	1.40	1.70	3,255	2,324	2,550
OH	420	520	2.90	3.60	1,364	1,218	1,872
OK	310	300	3.60	3.60	1,258	1,116	1,080
OR	420	420	4.00	4.80	1,681	1,680	2,016
PA	550	500	3.00	3.70	1,800	1,650	1,850
SD	2,400	2,400	2.30	2.40	4,950	5,520	5,760
TX	130	160	4.70	5.50	700	611	880
UT	550	550	4.20	4.20	2,255	2,310	2,310
VA	90	100	3.00	3.40	234	270	340
WA	410	480	4.40	4.90	2,288	1,804	2,352
WI	1,500	1,550	2.70	2.70	3,720	4,050	4,185
WY	530	600	2.90	2.60	1,620	1,537	1,560
Oth							
Sts 1/	200	192	3.05	2.93	513	610	562
US	20,980	20,982	3.32	3.43	69,880	69,620	71,977

1/ Other States include AR, CT, DE, ME, MD, MA, NH, NJ, NC, RI, TN, VT, and WV.
Source: NASS 2009 Agricultural Statistics Board, U.S. Department of Agriculture.
Accessed 9/09 at
<http://usda.mannlib.cornell.edu/usda/current/CropProd/CropProd-10-09-2009.txt>

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**APPENDIX G:
Counties Over CRP Cropland Acres Limit**

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Counties over CRP Cropland Acres Limits

State	County	Total County Cropland Acres	General Signup	Continuous Non CREP	CREP	CRP Cropland Acres	WRP Cropland Acres	% Cropland in CRP or WRP
Colorado	Kiowa	72860	21461	0	0	21461	0	29.5
Colorado	Pueblo	713288	186917	0	0	186917	0	26.2
Colorado	Crowley	98090	27886	0	0	27886	0	28.4
Idaho	Power	199481	85936	34	0	85970	0	43.1
Idaho	Bannock	217170	53233	1301	0	54533	0	25.1
Idaho	Oneida	386329	125170	81	598	125848	0	32.6
Kansas	Hamilton	215822	67625	79	0	67704	0	31.4
Kansas	Clark	452243	130862	0	0	130862	0	28.9
Kansas	Morton	318885	92013	58	0	92071	0	28.9
Louisiana	Caldwell	47121	3163	43	0	3207	9513	27
Minnesota	Polk	313138	126742	11035	20	137796	10281	47.3
Mississippi	Claiborne	69971	13240	14	0	13254	4978	26.1
Mississippi	Jefferson	50255	12696	166	0	12862	1245	28.1
Mississippi	Adams	33754	3506	0	0	3506	5335	26.2
New Mexico	Quay	593088	188540	0	0	188540	0	31.8
New Mexico	Curry	307135	107430	0	0	107430	0	35
New Mexico	Roosevelt	506203	165134	0	0	165134	0	32.6
Oklahoma	Cimarron	513312	149163	0	0	149163	0	29.1
Texas	Bailey	99016	36458	0	0	36458	0	36.8
Texas	Kent	363378	120325	90	0	120415	0	33.1
Texas	Gaines	674052	177322	0	0	177322	0	26.3
Texas	Andrews	73647	24496	0	0	24496	0	33.3
Washington	Douglas	88160	25086	0	0	25086	0	28.5
Washington	Asotin	568993	154066	422	0	154488	0	27.2

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APPENDIX H:
Sample Mid-Contract Management Activities (Iowa and Ohio)

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Sample Mid-Contract Management (MCM) Activities and Guidance (Ohio)

MCM Practice	Applicable CPs	Exceptions	Cost Share / Payment Reduction
<p>Light Disking (4" deep): Breaks up thick grass stands, allows establishment of annuals, wildflowers and legumes. Provides open ground for small animal foraging activity. Leave about 50% of the bare soil, disking across the slope or following contour. Blocks no larger than 20 acres with undisturbed areas in between.</p>	<p>CP1, CP2, CP4B, CP4D, CP9, CP10, CP15A, CP21, CP23, CP23A, CP25, CP27, CP28, CP29, CP30, CP33</p>		<p>\$10/acre cost share</p>
<p>Prescribed Burning: For the reduction of litter, providing bare soil for seed germination, control unwanted weeds. No more than 1/2 a field should be burned, once every 3-5 years.</p>	<p>CP1, CP2, CP4B, CP4D, CP9, CP10, CP15A, CP21, CP23, CP23A, CP25, CP27, CP28, CP29, CP30, CP33</p>		<p>\$25/acre cost share</p>
<p>Herbicide Application: Control of unwanted vegetation for establishment of desirable species. Spot spraying is preferred to reduce impacts to other species. Spray in blocks no larger than 20 acres with unsprayed areas in between. Rotate sprayed areas across the field. Do not spray within 30 feet of waterbodies.</p>	<p>CP1, CP2, CP4B, CP4D, CP9, CP10, CP15A, CP21, CP23, CP23A, CP25, CP27, CP28, CP29, CP30, CP33</p>		<p>\$25/acre cost share</p>
<p>Interseeding of Forbs, Legumes, and Grasses: To establish species missing from the stand that are not likely to become established naturally. Areas would likely require a disturbance activity prior to seeding. May be done in blocks over the entire acreage.</p>	<p>CP1, CP2, CP4B, CP4D, CP9, CP10, CP15A, CP21, CP23, CP23A, CP25, CP27, CP28, CP29, CP30, CP33</p>		<p>\$25/acre cost share</p>
<p>Prescribed Grazing: Domestic Livestock may be used to control plant communities on CRP land. For the improvement of plant diversity and variation in plant height and density. Must be done in an effort to improve wildlife habitat and outside of PNS. Acreage may not be overgrazed.</p>	<p>CP1, CP2, CP4B, CP4D, CP10</p>		<p>\$25/acre cost share. A 25% reduction in annual rental payments.</p>
<p>Prescribed Haying: Used to remove excess plant materials. Must be performed in a way that improves wildlife habitat, and outside of PNS. Cutting height is 4 inches for cool season grasses, and 8 inches for warm season grasses.</p>	<p>CP1, CP2, CP4B, CP4D, CP10</p>		<p>\$15/acre cost share. A 25% reduction in annual rental payments.</p>
<p>Prescribed Mowing: Can be used as a management practice, with specific limitations, to control brush or provide increased stand diversity. Annual mowing is not allowed; no more than 1/3 of the area may be mowed in one year; rotate mowing on a 4-5 year cycle; mow blocks of less than 20 acres.</p>	<p>CP1, CP2, CP4B, CP4D, CP9, CP10, CP15A, CP21, CP23, CP23A, CP25, CP27, CP28, CP29, CP30, CP33</p>	<p>Prescribed mowing for CP33 is allowed only in conjunction with other MCM activities</p>	

Source: NRCS 2007c

Sample Mid-Contract Management (MCM) Activities and Guidance (Iowa)

MCM Practice	Applicable Conservation Practice Standards	Exceptions
<p>Shallow Disking: (2-4" deep) Used to increase open ground, encourage plant diversity and provide habitat/food resources for wildlife. Disk up to 1/3 of field outside of PNS. The disked area should provide no more than 50 percent bare ground leaving at least 50 percent ground cover of residue to prevent soil erosion.</p>	647 Early Successional Habitat Management	
<p>Prescribed Burning: Used to remove excess ground cover, stimulate germination of some annual plants, and improve wildlife habitat quality. When wildlife is a primary concern, no more than 1/3 of field may be burned at a time. FSA does allow whole field burning for other CRP purposes. Burn outside of PNS.</p>	338 Prescribed Burning	
<p>Selected Herbicide Spraying: Used to control plant succession, and improve habitat diversity. Spray up to 1/3 of field at a time. Spray outside of PNS. For cool season introduced grasses, spray in blocks or strips up to 50' wide with non-treated blocks or strips equal to twice the strip width in between. Native or mixed grass and forb stands should be sprayed in narrow strips less than 2' wide with at least 10" non-sprayed in between.</p>	595 Pest Management	This option is not applicable to CP25 (Rare and Declining Habitat [Prairie]) or CP38E (SAFE Grass).
<p>Interseeding of Forbs and Legumes: Used to add diversity and structure to an existing cover. Can be use as a stand-alone management practice, or in combination with other MCMs.</p>	327 Conservation Cover	
<p>Managed Haying or Grazing: Used to reduce duff prior to light disking, spraying or interseeding.</p>		This option is not applicable to CP25 (Rare and Declining Habitat [Prairie]) or CP38E (SAFE Grass).

Source: NRCS 2009e

APPENDIX I:
Acres Hayed and Grazed 2004 to 2008

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2004 Annual State Summary Report									
State	Number of CRP Contracts	Managed Haying Contracts	Managed Haying Acres	Managed Grazing Contracts	Managed Grazing Acres	Emergency Haying Contracts	Emergency Haying Acres	Emergency Grazing Contracts	Emergency Grazing Acres
Alabama	10,221	2	73.7	0	0.0	0	0.0	0	0.0
Alaska	58	2	119.2	0	0.0	0	0.0	0	0.0
California	425	0	0.0	12	3,846.7	0	0.0	19	12,098.0
Colorado	8,359	85	6,907.0	141	22,423.7	0	0.0	0	0.0
Delaware	55	0	0.0	0	0.0	0	0.0	0	0.0
Idaho	5,336	51	5,387.0	50	4,447.2	81	5,465.6	166	31,679.0
Illinois	68,275	76	1,535.5	12	222.7	0	0.0	0	0.0
Indiana	1,528	3	53.0	2	14.1	0	0.0	0	0.0
Iowa	93,347	866	21,612.8	178	3,809.7	3	52.3	3	34.6
Kansas	42,103	538	18,689.2	160	12,288.1	102	5,112.4	340	31,259.1
Kentucky	14,268	50	50.0	50	50.0	0	0.0	0	0.0
Minnesota	54,430	789	30,423.2	48	954.0	0	0.0	0	0.0
Missouri	33,555	821	20,376.2	101	2,939.0	0	0.0	0	0.0
Montana	17,812	3,198	299,300.2	933	155,048.9	319	28,274.3	371	76,044.1
Nebraska	22,981	1,117	33,866.3	246	11,771.3	95	4,137.3	179	23,823.8
New Jersey	134	0	0.0	0	0.0	0	0.0	0	0.0
New Mexico	2,667	2	127.7	57	12,119.5	0	0.0	8	1,098.6
New York	1,791	0	0.0	0	0.0	0	0.0	0	0.0
North Carolina	7,406	6	211.4	0	0.0	0	0.0	0	0.0
North Dakota	35,470	6,510	414,473.5	202	13,022.3	1,236	81,784.3	284	35,247.5
Ohio	3,249	19	339.8	59	0.0	0	0.0	0	0.0
Oklahoma	8,875	179	8,577.4	273	22,192.7	0	0.0	0	0.0
Oregon	2,099	2	50.5	14	1,163.0	0	0.0	0	0.0
Pennsylvania	8,648	1	1.0	0	0.0	0	0.0	0	0.0
South Dakota	25,250	2,805	160,137.0	203	22,072.5	122	10,675.4	85	12,071.9
Tennessee	394	1	16.1	0	0.0	0	0.0	0	0.0
Texas	20,136	101	5,872.1	668	90,637.9	0	0.0	0	0.0
Utah	748	1	0.0	489	0.0	0	0.0	49	18,053.8
Vermont	146	0	0.0	0	0.0	0	0.0	0	0.0
Washington	10,562	30	1,801.2	25	2,860.5	0	0.0	0	0.0

2004 Annual State Summary Report									
State	Number of CRP Contracts	Managed Haying Contracts	Managed Haying Acres	Managed Grazing Contracts	Managed Grazing Acres	Emergency Haying Contracts	Emergency Haying Acres	Emergency Grazing Contracts	Emergency Grazing Acres
Wisconsin	29,887	402	7,386.9	28	496.6	0	0.0	0	0.0
Wyoming	1,055	2	204.0	1	66.7	27	444.8	137	40,879.4
Total	531,270	17,659	1,037,591.9	3,952	382,447.1	1,985	135,946.4	1,641	282,289.8

** For states not listed no acres reported.

2005 Annual State Summary Report									
State	Number of CRP Contracts	Managed Haying Contracts	Managed Haying Acres	Managed Grazing Contracts	Managed Grazing Acres	Emergency Haying Contracts	Emergency Haying Acres	Emergency Grazing Contracts	Emergency Grazing Acres
Alabama	10,629	4	134.6	0	0.0	0	0.0	0	0.0
Alaska	58	1	127.7	0	0.0	0	0.0	0	0.0
Arkansas	4,354	0	99.9	0	64.2	0	135.6	0	0.0
California	252	0	0.0	28	13,792.0	0	0.0	0	0.0
Colorado	12,131	102	8,140.6	209	29,474.2	0	0.0	0	0.0
Delaware	724	0	0.0	0	0.0	0	0.0	0	0.0
Idaho	3,579	33	3,067.4	21	2,672.7	0	0.0	0	0.0
Illinois	38,157	273	5,620.7	31	551.1	328	3,691.3	33	514.5
Indiana	2,296	7	104.4	1	9.3	0	0.0	0	0.0
Iowa	99,503	710	18,232.5	298	6,675.4	196	2,230.7	73	746.0
Kansas	46,527	718	24,007.1	154	11,989.0	0	0.0	0	0.0
Kentucky	13,437	2	156.3	0	0.0	0	0.0	1	13.0
Maryland	6,396	0	0.0	0	0.0	0	0.0	0	0.0
Michigan	735	2	66.0	0	0.0	5	104.1	0	0.0
Minnesota	58,595	0	0.0	0	0.0	0	0.0	2	22.2
Mississippi	1,131	2	242.1	0	0.0	0	0.0	0	0.0
Missouri	33,854	1,128	32,477.0	328	9,958.0	0	0.0	0	0.0
Montana	18,022	1,892	155,246.2	368	62,714.0	0	0.0	31	8,624.3
Nebraska	22,283	1,316	32,817.6	302	9,310.4	0	0.0	0	0.0
New Mexico	2,674	0	0.0	33	3,944.8	0	0.0	0	0.0
New York	1,182	1	18.1	0	0.0	0	0.0	0	0.0
North Dakota	36,361	4,328	229,669.9	80	4,987.6	334	9,555.4	2	72.4
Ohio	5,592	25	432.7	6	80.9	0	0.0	0	0.0
Oklahoma	8,874	121	6,144.2	171	13,082.8	0	0.0	0	0.0
Oregon	2,527	2	184.0	25	3,690.0	0	0.0	0	0.0
South Dakota	27,072	1,790	74,181.0	92	8,801.9	0	0.0	0	0.0
Tennessee	11	10	194.0	1	21.0	0	0.0	0	0.0
Texas	25,001	96	7,312.2	542	64,332.5	0	0.0	0	0.0
Utah	1,080	1	25.3	15	4,473.8	0	0.0	0	0.0
Washington	8,162	18	1,030.9	36	4,691.1	0	0.0	0	0.0

2005 Annual State Summary Report									
State	Number of CRP Contracts	Managed Haying Contracts	Managed Haying Acres	Managed Grazing Contracts	Managed Grazing Acres	Emergency Haying Contracts	Emergency Haying Acres	Emergency Grazing Contracts	Emergency Grazing Acres
Wisconsin	31,423	540	10,609.1	29	421.7	0	0.0	0	0.0
Wyoming	1,116	42	1,777.2	2	449.3	0	0.0	0	0.0
Total	523,739	13,164	612,118.7	2,772	256,187.7	863	15,717.1	142	9,992.4

** For states not listed no acres reported.

2006 Annual State Summary Report									
State	Number of CRP Contracts	Managed Haying Contracts	Managed Haying Acres	Managed Grazing Contracts	Managed Grazing Acres	Emergency Haying Contracts	Emergency Haying Acres	Emergency Grazing Contracts	Emergency Grazing Acres
Alabama	11,206	6	116.3	1	20.1	116	3,422.9	20	736.4
Alaska	58	2	63.6	0	0.0	0	0.0	0	0.0
Arkansas	5,653	1	41.0	0	0.0	432	0.0	0	0.0
California	587	0	0.0	21	6,003.3	0	0.0	0	0.0
Colorado	13,685	25	1,848.1	95	16,456.7	292	26,891.9	1,209	206,256.2
Connecticut	1,018	0	0.0	0	0.0	0	0.0	0	0.0
Delaware	738	0	0.0	0	0.0	0	0.0	0	0.0
Idaho	2,910	35	3,464.4	55	6,419.4	0	0.0	5	1,631.6
Illinois	78,023	51	1,169.2	10	191.2	0	0.0	0	0.0
Indiana	3,149	12	214.6	3	31.0	0	0.0	0	0.0
Iowa	111,306	1,181	31,955.7	480	12,536.9	383	11,136.2	80	2,757.6
Kansas	1,018	9	339.9	0	0.0	0	0.0	0	0.0
Kentucky	267	1	12.2	0	0.0	0	0.0	1	13.0
Maryland	6,677	0	0.0	0	0.0	0	0.0	0	0.0
Michigan	455	0	0.0	0	0.0	0	0.0	0	0.0
Minnesota	66,024	334	9,005.0	58	1,360.0	755	32,038.0	148	6,237.0
Mississippi	21,680	25	377.4	2	25.4	202	5,882.6	27	1,493.8
Missouri	39,041	2,301	76,885.0	499	17,073.0	118	3,048.1	68	1,203.5
Montana	18,460	919	62,004.5	502	76,180.2	4	113.0	156	29,069.9
Nebraska	27,495	2,302	71,605.9	702	18,946.7	911	31,309.6	665	66,689.9
Nevada	1	0	0.0	0	0.0	0	0.0	0	0.0
New Mexico	2,797	3	218.5	25	4,420.0	0	0.0	123	22,505.4
New York	3,150	3	107.0	0	0.0	0	0.0	0	0.0
North Carolina	9,295	0	0.0	0	0.0	0	0.0	0	0.0
North Dakota	37,194	2,129	115,055.5	89	5,572.0	7,879	461,423.3	941	78,556.9
Ohio	7,098	26	348.7	8	126.6	0	0.0	0	0.0
Oklahoma	9,230	630	44,184.2	615	57,087.4	658	33,959.8	610	51,824.7
Oregon	2,949	6	309.4	19	2,364.0	0	0.0	0	0.0
Pennsylvania	11,188	1	7.1	0	0.0	0	0.0	0	0.0
South Dakota	29,775	1,321	57,469.0	168	12,966.0	4,668	215,236.0	671	73,777.0

2006 Annual State Summary Report									
State	Number of CRP Contracts	Managed Haying Contracts	Managed Haying Acres	Managed Grazing Contracts	Managed Grazing Acres	Emergency Haying Contracts	Emergency Haying Acres	Emergency Grazing Contracts	Emergency Grazing Acres
Tennessee	7,890	45	1,452.3	2	74.9	0	0.0	0	0.0
Texas	26,946	226	24,397.1	404	51,591.0	675	48,330.1	2,247	264,618.5
Utah	1,152	0	0.0	44	10,612.0	0	0.0	7	1,511.0
Vermont	104	0	0.0	0	0.0	0	0.0	0	0.0
Virginia	5,312	0	0.0	0	0.0	0	0.0	0	0.0
Washington	8,622	21	1,000.3	21	3,104.1	0	0.0	32	9,342.4
West Virginia	280	1	25.1	0	0.0	0	0.0	0	0.0
Wisconsin	33,846	452	7,476.7	53	659.8	0	0.0	0	0.0
Wyoming	1,038	18	745.1	3	217.0	15	2,612.8	199	58,353.7

2007 Annual State Summary Report									
State	Number of CRP Contracts	Managed Haying Contracts	Managed Haying Acres	Managed Grazing Contracts	Managed Grazing Acres	Emergency Haying Contracts	Emergency Haying Acres	Emergency Grazing Contracts	Emergency Grazing Acres
Alabama	10,500	5	99.6	0	0.0	165	4,871.5	19	768.4
Alaska	65	4	388.2	0	0.0	0	0.0	0	0.0
Arkansas	4,660	10	41.6	0	0.0	0	0.0	0	0.0
California	250	0	0.0	18	4,628.3	0	0.0	12	2,259.8
Colorado	13,719	121	8,372.4	88	11,203.4	0	0.0	0	0.0
Delaware	749	0	0.0	0	0.0	0	0.0	0	0.0
Georgia	56	0	0.0	0	0.0	4	40.9	0	0.0
Hawaii	1	0	0.0	0	0.0	0	0.0	0	0.0
Idaho	5,166	29	893.0	115	18,755.0	42	3,008.0	244	50,823.0
Illinois	77,062	1,006	25,778.9	58	1,211.1	156	3,573.5	19	407.5
Indiana	16,596	217	6,058.7	6	45.8	34	693.6	19	35.1
Iowa	110,995	3,060	98,766.8	511	15,803.8	3	29.6	1	52.4
Kansas	42,001	907	32,870.2	141	12,266.4	0	0.0	0	0.0
Kentucky	17,411	1,030	30,178.9	118	1,040.8	558	13,484.3	94	835.7
Maryland	6,700	0	0.0	0	0.0	4	65.6	0	0.0
Michigan	6,966	97	2,401.6	2	18.8	0	0.0	0	0.0
Minnesota	67,131	867	26,430.0	94	2,462.7	184	6,207.9	16	229.9
Mississippi	20,331	3	54.1	0	0.0	171	4,658.3	22	1,235.2
Missouri	37,127	5,004	174,477.0	437	13,611.0	32	967.8	7	127.9
Montana	1,018	9	339.9	0	0.0	0	0.0	0	0.0
Nebraska	26,843	1,824	46,525.2	274	10,520.0	122	5,192.3	47	5,484.1
New Hampshire	14	0	0.0	0	0.0	0	0.0	0	0.0
New Jersey	206	0	0.0	0	0.0	0	0.0	0	0.0
New Mexico	2,508	1	75.7	15	2,453.0	0	0.0	0	0.0
New York	3,135	3	47.9	1	10.3	0	0.0	0	0.0
North Carolina	9,079	0	0.0	0	0.0	131	1,740.5	1	26.0
North Dakota	39,284	98	276,523.1	93	6,884.4	0	0.0	0	0.0
Ohio	18,727	226	5,453.7	22	360.6	92	2,395.0	3	78.2
Oklahoma	9,210	0	0.0	0	0.0	0	0.0	173	18,813.5
Oregon	4,111	9	774.8	26	3,999.5	6	458.0	20	2,662.4

2007 Annual State Summary Report									
State	Number of CRP Contracts	Managed Haying Contracts	Managed Haying Acres	Managed Grazing Contracts	Managed Grazing Acres	Emergency Haying Contracts	Emergency Haying Acres	Emergency Grazing Contracts	Emergency Grazing Acres
Pennsylvania	11,740	1	16.8	0	0.0	11	129.9	2	18.6
Rhode Island	1	0	0.0	0	0.0	0	0.0	0	0.0
South Carolina	8,373	8	118.7	0	0.0	0	0.0	0	0.0
South Dakota	29,239	2,535	128,149.9	324	12,296.0	0	0.0	3	334.0
Tennessee	7,552	1,102	46,518.4	23	598.8	91	2,010.1	2	74.6
Texas	26,094	95	6,832.5	460	59,187.3	0	0.0	0	0.0
Utah	975	1	50.0	96	24,444.6	2	103.6	32	9,212.0
Vermont	271	0	0.0	0	0.0	0	0.0	0	0.0
Virginia	318	0	0.0	1	20.6	7	70.7	0	0.0
Washington	8,051	43	2,306.8	13	1,433.6	0	0.0	95	30,845.2
West Virginia	357	2	70.6	0	0.0	0	0.0	0	0.0
Wisconsin	32,342	426	9,690.9	64	731.0	0	0.0	0	0.0
Wyoming	1,010	14	689.4	12	3,652.6	4	93.2	51	16,226.1
Total	677,944	18,757	930,995.3	3,012	207,639.4	1,819	49,794.3	882	140,549.6

2008 Annual State Summary Report									
State	Number of CRP Contracts	Managed Haying Contracts	Managed Haying Acres	Managed Grazing Contracts	Managed Grazing Acres	Emergency Haying Contracts	Emergency Haying Acres	Emergency Grazing Contracts	Emergency Grazing Acres
Alabama	9,868	2	73.7	0	0.0	0	0.0	0	0.0
Alaska	65	3	186.3	0	0.0	0	0.0	0	0.0
Arkansas	4,528	1	81.9	1	81.9	0	0.0	0	0.0
Colorado	7,247	179	3,303.6	42	6,203.7	176	20,063.8	469	96,135.5
Delaware	697	0	0.0	0	0.0	0	0.0	0	0.0
Florida	0	0	0.0	0	0.0	0	0.0	0	0.0
Georgia	3	0	0.0	0	0.0	3	62.1	0	0.0
Hawaii	1	0	0.0	0	0.0	0	0.0	0	0.0
Idaho	4,497	80	6,665.7	29	4,136.3	2	212.4	8	566.8
Illinois	78,491	592	12,956.2	25	321.0	30	453.3	7	164.1
Indiana	6,417	36	516.0	1	8.0	2	45.0	0	0.0
Iowa	105,432	2,282	61,274.8	252	5,698.7	1,241	31,261.3	89	1,839.2
Kansas	49,105	534	19,057.5	101	8,805.1	423	18,923.7	621	25,241.3
Kentucky	5,410	73	1,934.1	0	0.0	0	0.0	0	0.0
Michigan	26	26	652.9	0	0.0	0	0.0	0	0.0
Minnesota	64,296	1,464	51,384.5	72	1,842.8	37	1,269.0	9	176.1
Mississippi	7	7	190.4	0	0.0	0	0.0	0	0.0
Missouri	36,668	1,747	52,824.0	111	3,260.0	671	17,729.2	60	1,878.4
Montana	2,385	1,627	143,182.0	373	57,306.0	414	34,073.0	323	58,221.0
Nebraska	25,253	1,415	31,150.7	95	2,881.1	500	13,817.7	208	11,606.6
Nevada	2	0	0.0	0	0.0	0	0.0	0	0.0
New Hampshire	6	0	0.0	0	0.0	0	0.0	0	0.0
New Jersey	230	0	0.0	0	0.0	0	0.0	0	0.0
New Mexico	2,535	2	173.3	0	0.0	0	0.0	0	0.0
New York	3,099	19	493.0	0	0.0	0	0.0	0	0.0
North Carolina	8,919	0	0.0	0	0.0	6	101.0	0	0.0
North Dakota	34,957	5,473	317,531.2	142	11,815.1	1,388	68,068.4	293	26,449.0
Ohio	10,492	44	918.2	4	72.1	0	0.0	0	0.0
Oklahoma	8,560	46	4,110.5	48	3,629.6	190	11,939.0	71	6,538.2
Oregon	2,157	8	498.3	13	2,413.5	0	0.0	0	0.0

2008 Annual State Summary Report									
State	Number of CRP Contracts	Managed Haying Contracts	Managed Haying Acres	Managed Grazing Contracts	Managed Grazing Acres	Emergency Haying Contracts	Emergency Haying Acres	Emergency Grazing Contracts	Emergency Grazing Acres
Pennsylvania	11,859	7	99.9	2	34.7	0	0.0	0	0.0
South Dakota	28,898	2,072	112,864.1	87	6,403.8	0	0.0	0	0.0
Tennessee	3,146	10	452.7	0	0.0	0	0.0	0	0.0
Texas	24,659	155	14,396.3	93	10,663.1	70	6,425.5	196	19,844.5
Utah	721	5	375.0	38	13,547.6	0	0.0	23	8,568.7
Vermont	314	0	0.0	0	0.0	0	0.0	0	0.0
Washington	8,278	108	5,556.4	29	4,086.1	16	1,062.7	15	2,479.5
West Virginia	386	0	0.0	0	0.0	0	0.0	0	0.0
Wisconsin	28,019	1,044	24,598.9	40	570.6	0	0.0	9	168.5
Wyoming	983	10	921.0	3	344.5	0	0.0	0	0.0
Total	578,616	19,071	868,423	1,601	144,125	5,169	225,507	2,401	259,877

** For states not listed no acres reported.

APPENDIX J:
Ecoregion Divisions of the United States

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Ecoregion Divisions of the United States

Ecoregion	General Description	Vegetation Species	Animal Species
<p>NORTHERN FORESTS</p>	<p>This ecological region extends from northern Saskatchewan east to Newfoundland and south to Pennsylvania. It is distinguished by extensive boreal forests and a high density of lakes.</p>	<p>Over 80 percent forested, this ecological region generally supports closed stands of conifers, largely white and black spruce, jack pine, balsam fir, and tamarack. Towards the south there is a wider distribution of white birch, trembling aspen, balsam poplar and white and red pine, sugar maple, beech, red spruce and various species of oak. Areas of shallow soils and exposed bedrock are common and tend to be covered with a range of plant communities, dominated by lichens, shrubs, and forbs.</p>	<p>Characteristic mammals include woodland caribou, white-tailed deer, moose, black bear, raccoon, marten, fisher, striped skunk, lynx, bobcat, and eastern chipmunk. Representative birds include oriole and great horned owl, blue jay and evening grosbeak.</p>
<p>NORTHWESTERN FORESTED MOUNTAINS</p>	<p>This ecological region extends from Alaska south through southern Yukon, interior British Columbia and the Alberta foothills, through northern California and over into Nevada. It contains the highest mountains of North America and some of the continent's most diverse mosaics of ecosystem types, ranging from alpine tundra to dense conifer forests to dry sagebrush and grasslands</p>	<p>Vegetative cover is extremely diverse: alpine environments contain various herb, lichen, and shrub associations; whereas the subalpine environment has tree species such as lodgepole pine, subalpine fir, silver fir, grand fir, and Engelmann spruce. With decreasing elevation, the vegetation of the mountainous slopes and rolling plains turns into forests characterized by ponderosa pine; interior Douglas fir; lodgepole pine and trembling aspen in much of the southeast and central portions; and western hemlock, western red cedar, Douglas fir and western white pine in the west and southwest. White and black spruce dominate the plateaus of the north. Shrub vegetation found in the dry</p>	<p>Characteristic mammals include mule deer, elk, moose, mountain goat, California bighorn sheep, coyote, black and grizzly bear, hoary marmot and Columbian ground squirrel. Typical bird species include blue grouse, Steller's jay, and black-billed magpie.</p>

Ecoregion Divisions of the United States (cont'd)

Ecoregion	General Description	Vegetation Species	Animal Species
NORTHWESTERN FORESTED MOUNTAINS		southern interior includes big sagebrush, rabbit brush, and antelope brush. Most of the natural grasslands that existed in the dry south have vanished, replaced by urban settlement and agriculture.	
MARINE WEST COAST FORESTS	This ecological region covers the mainland and offshore islands of the Pacific Coast from Alaska south to northern California. The wettest climates of North America occur in this area. It is characterized by mountainous topography bordered by coastal plains, and contains all of the temperate rain forests found in North America. These forests are among the most productive in North America, making forestry the major resource activity. Major commercial fisheries occur offshore. The large population of 6.5 million is concentrated in coastal cities and towns.	Variations in altitude create widely contrasting ecological zones within the region. They range from mild, humid coastal rain forest to cool boreal forests and alpine conditions at higher elevations. The temperate coastal forests are composed of mixtures of western red cedar, yellow cedar, western hemlock, Douglas fir, amabilis fir, Sitka spruce, California redwood and red alder. Many of these trees reach very large dimensions and live to great age, forming ancient or old growth. In the drier rain-shadow areas, Garry oak and Pacific madrone occur with Douglas fir. Sub-alpine forests are characterized by mountain hemlock and amabilis fir. Alpine tundra conditions are too severe for growth of most woody plants except in dwarf form. This zone is dominated by shrubs, herbs, mosses and lichens.	Characteristic mammals include the black-tailed deer, black and grizzly bear, elk, wolf, otter, and raccoon. Bird species unique to this area include California and mountain quail and chestnut-backed chickadee. Many seabirds are prevalent, including marbled murrelets, and several species of cormorants, gulls, mures, petrels, and puffins. Other representative birds are northern pygmy-owls, Steller's jays, and northwestern crows. Adjacent marine environments are typified by large numbers of whales (including the killer whale), sea lions, seals, and dolphins. Salmon, steelhead, and associated spawning streams are located throughout this area. Coastal upwelling and freshwater discharge from coastal rivers into ocean waters stimulate the occurrence of abundant marine life.

Ecoregion Divisions of the United States (cont'd)

Ecoregion	General Description	Vegetation Species	Animal Species
<p>EASTERN TEMPERATE FORESTS</p>	<p>This ecological region extends from the Great Lakes in the north to the Gulf of Mexico in the south. From the Atlantic Coast, it extends westward approximately 620 km into eastern Texas, Oklahoma, Missouri, Iowa, and Minnesota. The region is distinguished by its moderate to mildly humid climate, its relatively dense and diverse forest cover, and its high density of human inhabitants that approximates 160 million. Urban industries, agriculture, and some forestry are major activities.</p>	<p>The Eastern Temperate Forests form a dense forest canopy consisting mostly of tall broadleaf, deciduous trees and needle-leaf conifers. Beech-maple and maple-basswood forest types occur widely especially in the eastern reaches of this region, mixed oak-hickory associations are common in the Upper Midwest, changing into oak-hickory-pine mixed forests in the south and the Appalachians. These forests have a diversity of tree, shrub, vine, and herb layers. While various species of oaks, hickories, maples, and pines are common, other wide-ranging tree species include ashes, elms, black cherry, yellow poplar, sweet gum, basswood, hackberry, common persimmon, eastern red cedar, and flowering dogwood. A key tree species, the American chestnut, was virtually eliminated from the Eastern Temperate Forests in the first half of the twentieth century by an introduced fungus.</p>	<p>Food and shelter are relatively abundant in the Eastern Temperate Forests. The region contains a great diversity of species within several groups of animals. Mammals of the region include the white-footed mouse, gray squirrel, eastern chipmunk, raccoon, porcupine, gray fox, bobcat, white-tailed deer, and black bear. The region has extremely diverse populations of birds, fish, reptiles, and amphibians.</p>
<p>GREAT PLAINS</p>	<p>The Great Plains ecological region is found in the central part of the continent and extends over the widest latitudinal range of any single North American ecological region. It is a relatively continuous and roughly triangular area covering about 3.5 million square kilometers. The North American prairies extend for about 1,500 km from Alberta, Saskatchewan and Manitoba in Canada, south</p>	<p>The Great Plains ecological region was once covered with natural grasslands that supported rich and highly specialized plant and animal communities. Short-grass prairie occurs in the west, in the rain shadow of the Rocky Mountains, with mixed-grass prairie in the central Great Plains and tall-grass prairie in the wetter eastern region. The short-, mixed- and tall-grass prairies now correspond to</p>	<p>Wetland concentrations are generally greatest in the glaciated, subhumid northern grasslands and adjacent aspen parkland of the northern Great Plains, where up to half of the land is wetland. Significant wetlands are also found in the Nebraska Sandhills and a large area of playas is located in the southwestern U.S. Prairie wetlands provide major breeding, staging and nesting habitat for migratory waterfowl</p>

Ecoregion Divisions of the United States (cont'd)

Ecoregion	General Description	Vegetation Species	Animal Species
	<p>through the Great Plains of the U.S. to southern Texas and adjacent Mexico, and approximately 600 km from western Indiana to the foothills of the Rockies and into northeastern Mexico. This ecological region is distinguished particularly by the following characteristics: relatively little topographic relief; grasslands and a paucity of forests; and subhumid to semiarid climate.</p>	<p>the western rangelands, the wheat belt and the corn/soybean regions, respectively, to the central and eastern Great Plains. Drier northern sites are home to yellow cactus and prickly pear, with sagebrush also abundant.</p> <p>The Aspen Parkland, the northern transition zone to the boreal forest, has expanded south into former grasslands since settlement effectively stopped prairie fires. In the U.S., native prairie vegetation ranges from grama grass, wheatgrass and bluestem prairie in the north to different shrub and grassland combinations (e.g., mesquite-acacia savanna and mesquite-live oak savanna) and grassland and forest combinations (e.g., juniper-oak savanna and mesquite-buffalo grass) in the south. There are also patches of blackland prairie, bluestem-scachuista, and southern cordgrass prairie in the southern U.S. The eastern border of the region, stretching from central Iowa to Texas, shows patterns of grassland and forest combinations mixed with oak-hickory forest. Throughout the remainder of the Great Plains there are few native deciduous trees that occur, except in the eastern regions or in very sheltered locations along waterways or at upper elevations.</p>	<p>using the central North American flyway. Prior to European settlement, the Great Plains supported millions of bison, pronghorn antelope, elk and mule deer, plains grizzly bears and plains wolves. Today, the Great Plains is home to a disproportionately high number of rare, threatened, vulnerable, and endangered species. The draining of wetlands and conversion of wildlife habitat for agriculture, industry, and urban development are significant issues in this ecological region.</p>

Ecoregion Divisions of the United States (cont'd)

Ecoregion	General Description	Vegetation Species	Animal Species
<p>NORTH AMERICAN DESERTS</p>	<p>The North American Deserts ecological region extends from eastern British Columbia in the north, to Baja California and north central Mexico in the south. The region is distinguished from the adjacent forested mountain ecological region by its aridity, its unique shrub and cactus vegetation with a lack of trees, and generally lower relief and elevations. Population centers have historically been small, but several urban areas like Las Vegas have recently experienced rapid growth.</p>	<p>In this ecological region of altitudinal, latitudinal and landform diversity, there is a variety of vegetation types but low growing shrubs and grasses predominate. In the northern, Palouse area, grasslands and sagebrush steppes were once common; however, most of these northern grasslands have been converted to agriculture and, in some areas, the sagebrush steppe is being invaded by western juniper and cheatgrass. The Great Basin is characterized by sagebrush, with shadscale and greasewood on more alkaline soils. Creosote bush is common in the Mojave desert, a desert that also contains areas of the distinctive Joshua tree. The Sonoran desert has greater structural diversity in its vegetation than the other North American deserts that are dominated by low shrubs. Paloverde-cactus shrub vegetation includes various types of cacti, such as saguaro, cholla, and agave. Plants of the Chihuahuan desert scrub are often shorter with sparser foliage than similar plants of the Sonoran or Mojave deserts. Tarbush and creosote bush are dominant shrubs, and grasses are intermixed throughout much of the Chihuahuan desert. The bajadas and hills include ocotillo, Joshua tree, lechuguilla, and prickly pear.</p>	<p>Larger mammals are not abundant in the deserts area, but include mule deer, pronghorn antelope, coyotes, bobcats and badgers. Feral burros and feral horses are also found. Jackrabbits, cottontail rabbits, ground squirrels, kangaroo rats, mice, and bats are the most common mammals. Birds include golden eagles, several western hawk species, ravens, roadrunners, mourning doves, and black-throated sparrows. Some birds are characteristic of the sagebrush communities such as the sage thrasher, sage sparrow, and sage grouse, while others are restricted to the southern warmer deserts, e.g., Gambel's quail, scaled quail, Gila woodpecker, Costa's hummingbird, and curve-billed thrasher. Reptiles include the gopher snake, various species of rattlesnake, sagebrush lizard, horned lizard, geckos, Gila monster, and desert tortoise. Due to human modifications of aquatic habitat, many of the listed species of threatened or endangered animals are fish. These include the bonytail chub, humpback chub, Sonora chub, Chihuahua chub, beautiful shiner, Pecos bluntnose shiner, razorback sucker, Colorado squawfish, Pyramid Lake cui-ui, and Lahontan cutthroat trout.</p>

Ecoregion Divisions of the United States (cont'd)

Ecoregion	General Description	Vegetation Species	Animal Species
<p style="text-align: center;">MEDITERRANEAN CALIFORNIA</p>	<p>This relatively small ecological region extends 1,300 km from Oregon in the north to Baja California Norte state in the south. It abuts the Pacific Ocean on the west and the Sierra Nevada and deserts to the east. It is distinguished by its warm and mild Mediterranean climate, its shrubland vegetation of chaparral mixed with areas of grassland and open oak woodlands, its agriculturally productive valleys and its high population (30 million) in extensive urban agglomerations.</p>	<p>The Mediterranean California region is characterized by mostly evergreen shrub vegetation called chaparral, plus patches of oak woodland, grassland, and some coniferous forest on upper mountain slopes. The chaparral has thickened, hardened foliage resistant to water loss, and forms a cover of closely spaced shrubs 1 to 4 m tall. Common shrubs include chamisa, buckbrush or ceanothus, and manzanita. Coastal sagebrush, summer-deciduous plants that tolerate more xeric, or dry, conditions than the evergreen chaparral, are found at lower elevations. About 80 percent of the presettlement coastal sage scrub in southern California has been displaced, primarily by residential development. Two listed endangered species and 53 candidate species occur in the coastal sage scrub community. To the north, the chaparral is less continuous, occurring in a mosaic with grassland, as well as broadleaf and coniferous forests. A blue oak-digger pine woodland community forms a ring around the Central Valley, which once had extensive grasslands and riparian forests. The southern oak woodland extends into the transverse and peninsular ranges and includes California walnut and Engelmann oak. Endemic tree species also include Monterey cypress, Monterey pine, and</p>	<p>Endangered or threatened animal species of the Mediterranean California include the California condor, Clapper rail, least tern, Bell's vireo, California gnatcatcher, Smith's blue butterfly, several species of kangaroo rats, salt-marsh harvest mouse, San Joaquin kit fox, blunt-nosed leopard lizard, San Francisco garter snake, Santa Cruz long-toed salamander, tidewater goby, green sea turtle, southern sea otter and Guadalupe fur seal.</p>

Ecoregion Divisions of the United States (cont'd)

Ecoregion	General Description	Vegetation Species	Animal Species
		Torrey pine.	
TEMPERATE SIERRAS	This region extends over part of the states of Arizona and New Mexico in the U.S.	Vegetation can be evergreen or deciduous, primarily being composed of conifers and oaks. They grow from 10 to 30 m, sometimes reaching 50 m. This vegetative cover may comprise from one to three tree layers, one or two shrub layers, and a herbaceous stratum. A mountain cloud forest occurs in places. This forest community is characterized by about 3,000 vascular plant species.	Mammals include: wolf, coyote, cougar, squirrels, rats, and mice. Listed birds include hummingbirds and woodpeckers.
SOUTHERN SEMI-ARID HIGHLANDS	This region extends over part of the states of Arizona and New Mexico in the U.S. The landscape is composed of hills, bottom valleys and plains. In general, the vegetation within this region is dominated by grasslands and in the transition zones by various scrublands and forests.	The characteristic natural vegetation, which presently is very diminished or altered, consists of grasslands and combinations of grasslands with scrublands and forests in the transition zones. Certain species of grasses are dominant, particularly blue-stemmed, threeawn, galleta, and muhly grass. Among the shrubs and trees, in some locales, mesquite and acacia are found. Oak and western juniper are common at the foot of the sierras. On deep clay soils, mesquite groves are the most conspicuous plant community.	Wildlife includes quail, pigeons, doves, hares, jackrabbits, coyote, gray fox, mule deer, white-tailed deer, and pronghorn antelope.
TROPICAL HUMID FORESTS	This ecological region includes the southern tip of the Florida Peninsula in the U.S.	Evergreen and semideciduous forests are the most characteristic plant communities of this region which, in terms of flora and fauna, is doubtless one of the richest zones in the world. Forest stands are typically of mixed	The origin of most mammals is neotropical although some are of holarctic origin. A great abundance and variety of bats and marsupials is present. Common species include the armadillo, squirrel, lynx, peccary, and

Ecoregion Divisions of the United States (cont'd)

Ecoregion	General Description	Vegetation Species	Animal Species
		<p>ages with a great abundance of air plants (epiphytes): bromeliads, ferns, and orchids among others. The mature tree layer may attain heights of 30 to 40 m or more. Typical species include paque, allspice tree, palms, sombreroete, breadnut, and copai-yé wood. Important plants include members of pea, mulberry, avocado, sapote and madder families. In the Florida peninsula, flooded marshes and swamps (both saltwater and freshwater) are widespread, with characteristic mangrove vegetation found in the Everglades.</p>	<p>tapir. Common birds include pheasant, macaos, parrots, and toucans. Amphibians and reptiles are abundant including toads, frogs, arboreal frogs, caimans, and crocodiles. Of 217 endemic vertebrate species that inhabit tropical evergreen forests, 14 are endangered</p>

APPENDIX K:
**Description of Regression Model Used for Predicting the
Effect of Rental Rates on Enrollment Decisions**

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Description of Regression Model Used for Predicting the Effect of Rental Rates on Enrollment Decisions

K.1. A Regression Model for Total CRP Enrollments

A regression model was developed that relates historical enrollment acreage to posted rental rates. Holding all other factors constant, including actual market rates and land characteristics, a higher posted rental rate provides a stronger incentive for landowners to participate in CRP. Higher participation follows because higher posted rates will allow at least some landowners to earn greater rental income from participation.

The crux of the analysis involves developing suitable controls so that comparisons between sample unit areas with different historical posted rates are otherwise similar. Past posted rates for CRP likely contained a certain amount of error that is unavoidable given they were based on limited sample of expert judgments, not actual rental rates. Comparisons between enrollment decisions and rental rates are most plausible if they isolate these errors in posted rates—that is, the difference between actual market rates and posted rates.

Several features of the regression models considered make this key assumption at least somewhat plausible. First, in all specifications a separate indicator variable (a *fixed effect*) is included for each major land resource area (MLRA). Including fixed effects for MLRAs narrows comparisons between different CRP enrollments and posted rates *within* MLRAs. Since MLRAs tend to have similar land characteristics, but overlap political and administrative areas, like states and counties, these fixed effects help to isolate variation in posted rental rates that are unlikely to be associated with unobserved factors, especially true market rates and land characteristics.

Another key control variable is the NASS rental rate for non-irrigated cropland, estimated for the first time in 2008. Because NASS rental rates were obtained from a random sample of actual leases, it provides an objective measure of farmers' true opportunity costs. The essential underlying comparison in the regression comes from differences in enrollments across sample units within MLRAs as they relate to differences between the posted rental rates and the NASS rental rates within MLRAs.

Other important controls include the amount of highly erodible cropland in the sample unit (area of pre-CRP cropland with an EI index greater than or equal to 8) and the total agricultural area in the sample unit. These measures are critical because they serve as baselines for the amount of land likely to be eligible for CRP. Because the analysis considers total enrollment as of 2008, these measures are estimated from the 1982 National Resources Inventory, which pre-dates CRP.

Last, it is important consider the interaction between the environmental characteristics and the posted minus NASS rental rate differential. These interactions are important because the rental rates requested by landowners in General Signups, and the likelihood of acceptance in CRP, are influenced by landowners' balancing of the odds of acceptance with the financial and non-financial gains if their offers are accepted. In many cases landlords offered rent will be constrained by a maximum rate that is tied to the county's posted rate. Interactions are also important because both posted rates and actual market rental rates vary within sample units and other land characteristics.

A baseline regression model is given by (see Table K-1 for variable definitions).

$$(1) \quad E_i = b_0 + b_1 H_i + b_2 A_i + b_3 R_i^{NASS} + b_4 (R_i^{NASS} - R_i^{LVS}) + \\ R_i^{NASS} \times (b_5 H_i + b_6 A_i) + \\ (R_i^{NASS} - R_i^{LVS}) \times (b_7 H_i + b_8 A_i) + \\ b_9 R_i^{NASS} \times (R_i^{NASS} - R_i^{LVS}) + \\ U_{MLRA} + \varepsilon_i$$

The model was estimated by using ordinary least squares to select the parameters b_1, b_2, \dots, b_9 and fixed effects U_{MLRA} . Estimation gives a strong fit (an adjusted R^2 of 0.74) and strong statistical significance of many MLRA fixed effects and of parameters b_1, b_5 , and b_7 , which capture effects associated with erodible cropland (H_i) and interactions of erodible cropland with market rental rates (R_i^{NASS}) and the differences between posted rates and market rates ($R_i^{NASS} - R_i^{LVS}$). These results make sense given the importance of erodibility in environmental scoring of offers and incentives relating to posted and market rental rates. The sign of the estimated coefficient also make sense: b_1 is positive, since more erodible cropland indicates more qualifying acres; b_5 is negative, since higher market rates imply greater returns from farming, and b_7 is positive, reflecting greater returns from CRP enrollment conditional on market rental rates.

The predicted difference in enrollment, if posted rates were to have instead been NASS rates, is given by

$$(2) \quad \Delta E_i^* = -b_4^* (R_i^{NASS} - R_i^{LVS}) - (R_i^{NASS} - R_i^{LVS}) \times (b_7^* H_i + b_8^* A_i) - \\ b_9^* R_i^{NASS} \times (R_i^{NASS} - R_i^{LVS})$$

The (*) denotes values that are estimates of the true values.

The value of ΔE_i is of main interest. Assuming unobserved factors determining enrollment (the model error, ε_i) are unrelated to the explanatory variables, ΔE_i^* gives an unbiased prediction how different enrollment would be if NASS rental rates were used in place of LVS-based rates, *holding all other considerations equal*. A more careful interpretation of this is given below.

To examine the plausibility of the estimates—and particularly the idea that the difference in rental rates is unrelated to unobserved factors (ε_i) to give unbiased estimates—a series of more complex models were also considered. The idea is to examine whether predictions are sensitive to specification of the relationship between enrollment, land characteristics, and rental rates.

Two kinds of complexities were considered. First a series of additional land characteristic measures were added to the model. If a more complex model with additional explanatory variables can explain a significantly larger share of the variance of enrollment, and this does not significantly influence predictions for the predicted change in enrollment ΔE_i , it lends credibility to the idea the differentials between posted and NASS rates are not related to unobserved factors, which suggests estimates are unbiased. Additional explanatory variables considered are: the share of agricultural land in capability classes 1 through 6, and SRPG calibrated crop yields for corn, soybeans, and wheat.

Table K-1. Variable Definitions and Sources

I	Sample unit, typically a county or larger, for which there is a single NASS rental rate estimate (1103 observations in the complete data set)
E_i	Natural log of CRP enrollment for sample unit i in 2007 (FSA).
R_i^{NASS}	NASS rental rate from survey in 2008 (NASS)
R_i^{LVS}	Posted county-level CRP rental rate in 2008, averaged using crop area weights if multiple counties in a sample unit. (NASS)
C_i^{12}	Share of agricultural area in capability class 1 or 2 (STATSGO)
C_i^{34}	Share of agricultural area in capability class 3 or 4 (STATSGO)
C_i^{56}	Share of agricultural area in capability class 5 or 6 (STATSGO)
Y_i^C	Yield productivity index for corn, averaged over agricultural area (STATSGO)
Y_i^S	Yield productivity index for soybeans, averaged over agricultural area (STATSGO)
Y_i^W	Yield productivity index for wheat, averaged over agricultural area (STATSGO)
I_i^C	Indicator for corn productivity index given in soils data, averaged over agricultural area (STATSGO)
I_i^S	Indicator for soybean productivity index given in soils data, averaged over agricultural area (STATSGO)
I_i^W	Indicator for wheat productivity index given in soils data, averaged over agricultural area (STATSGO)
H_i	Natural log of highly erodible cropland (pre-CRP, EI > 8, 1982 NRI-based)
A_i	Natural log of agricultural area (based on satellite image)
U_{MLRA}	A series of effects for each major land resource area (MLRA)

Note: When natural logs are used and there exist observations with zeros, one was added to all observations.

A second complexity is to include CRP enrollment as of 1997 as an explanatory variable. Posted rental rates and enrollment criteria have changed over time, so including this baseline measure focuses rental rate anomalies present only in the most recent decade of the program.

After estimating the basic model in (1), a more complex model with all additional explanatory variables relating to soil and land characteristics and each of these variables interacted with NASS rental rates and the difference between posted rates and NASS rates. This follows the same structure as the model in (1), except with the additional land characteristic variables besides highly erodible acres and total agricultural area. A third model adds CRP enrollment in 1997.

Then, starting with the most complex model, explanatory variables are dropped or added one at a time in an automated iterative process that selects the model with the smallest Bayesian information criterion (BIC). The selected model is much smaller than the complex models but has a fit that is nearly as strong (an adjusted R-squared of 0.884 in comparison to 0.885 for the most complex model).

Results for all four specifications are summarized in Table K-2. The table describes each specification, gives the overall fit of each specification (the adjusted R^2), and gives each model's predicted overall change in CRP enrollment if posted rates were set to equal NASS rental rates, holding all other factors constant.

Note that these estimates hold constant enrollment criteria set by Farm Service Agency, which may be unrealistic for consideration of future signups. In particular, because NASS-based rates are less than the posted LVS-based rates on average, the model predicts less acreage would have been enrolled in CRP. It is impossible to evaluate how exactly FSA would have responded to a different set of offers that it would have received in the general signup had NASS rental rates been used instead of LVS rates. Presumably, however, in an effort to maintain enrollment levels near the limit of their authority, FSA would have reduced critical EBI scores necessary for enrollment in general signups, and perhaps increased premiums paid to landowners targeted for CREP and continuous signups. Changing EBI thresholds or compensation levels would have then fed back into the behavior of landowners seeking enrollment in CRP. For example, landowners recognizing that lower EBI scores would be accepted would have been more likely to request higher rental rates and offer less EBI-enhancing cover crops. The regression model cannot account for these kinds of changes because, as stated above, *it assumes all other factors besides the posted rate are held constant*. It is clear, however, that without other kinds of adjustments, acreage in CRP would decline if rental rates are changed to NASS rates.

Table K-2. Summary of Regression Models for Total CRP Enrollment

<i>Model</i>	<i>Adjusted R-squared</i> (Higher is better)	<i>AIC Model Selection Criterion</i> (Lower is better)	<i>Predicted Change in CRP Acreage</i> (Acres)
(1) Basic	0.735	1225	-6,279,147
(2) Complex	0.753	1306	-4,112,871
(3) Complex with 1997 Enrollment	0.885	469	-3,903,050
(4) Best BIC from Stepwise Selection	0.884	348	-4,165,538

K.2. Developing Predictions for Future Enrollments

This section describes how regression-based estimates were adjusted to account for the schedule of expiring CRP contracts from FY 2010-2012 combined with specific acreage targets. All of these predictions use estimates from the fourth regression model (the BIC selected model) to construct predictions for future total enrollments under alternative specific actions.

Predictions are based on the assumption that, if all current CRP contracts were to expire, enrollment levels in each county would be in proportion to the regression model's predicted enrollment. Adjustments are then made based on current contracts and contracts that will expire by 2012.

The first step calculates a *baseline* level of enrollment for each sample unit. The baseline level of enrollment takes sample-unit predictions from the regression model and adjusts proportionately upward or downward such that total enrollment equals the target level of enrollment under the specific action. For example, under the No Action alternative in Provision 7 with a 32 million acre target, rental rates would not change, so the predicted level of enrollment equals current enrollment and target enrollment equals 32 million acres. Baseline enrollment levels for each sample unit equal current enrollment levels multiplied by the ratio of 32/33.72, since there are currently 33.72 million acres enrolled in CRP. If the specific action considers

new NASS rates, then current enrollments would be adjusted for the predicted change, akin to the calculation in equation (2) above.

After baseline levels were calculated, total *needed* acres were calculated as the difference between targeted acres under the specific action and total acres not expiring before 2012. The *deficit* each sample unit (measured as a proportion) were calculated as the *baseline* acres minus acres in contracts not expiring by 2012, divided by the sum over all sample units of this difference. Projected new enrollment acres for each sample unit were then calculated as *deficit* x *needed*.

K.3. A Regression Model for Targeted CRP Enrollments

A separate regression model was developed for predicting targeted enrollments in relation to rental rates. In concept, this model is very much like the model for total enrollments, with just two critical differences: the dependent variable is the sum of all CRP enrollments except General Signups and, because many sample units have zero enrollment of targeted acres, a censored regression model (called a Tobit) is used rather than ordinary least squares.

Note that a model for General Signups was not estimated because of the joint dependency of General Signup acres and targeted signups (Continuous CRP, CREP, Wetlands, or Initiatives). Because payment rates in the targeted programs are universally equal to or greater payment rates in General Signups, it is assumed landowners will only consider participation in a General Signup if the parcel does not qualify for a targeted signup. One can therefore consider targeted signups separately from general signups but cannot consider general signups separately from targeted signups.

The censored regression model assumes the same linear structure described in equation (1), except that all enrollment values less than zero are truncated at zero in the observed data. Failure to account for the censored nature of the data can yield biased estimates.

Except for these two key differences, all models, model selection and predictions were conducted in the same way as with total enrollments described above. A summary of the four analogous regression model estimates is given in Table K-3.

Table K-3. Summary of Censored Regression Models for Targeted CRP Enrollments

<i>Model</i>	<i>Pseudo R-squared</i> (Higher is better)	<i>AIC Model Selection Criterion</i> (Lower is better)	<i>Predicted Change in CRP Acreage</i> (Acres)
(1) Basic	0.712	4777	-251,172
(2) Complex	0.725	4915	-257,326
(3) Complex with 1997 Enrollment	0.762	4763	-266,756
(4) Best BIC from Stepwise Selection	0.754	4604	-255,679

Table K-4. Estimated coefficients and standard errors for the BIC selected model of total enrollments

<i>Coefficient</i>	<i>Estimate</i>	<i>Standard Error</i>	<i>T statistic</i>
$\log(CRP^{97} + 1)$	0.583	0.017	34.339***
$\log(R_i^{LVS}) - \log(R_i^{NASS})$	0.559	0.181	3.094**
$\log(R_i^{NASS})$	2.205	0.225	9.821***
$\log(H_i + 1)$	0.953	0.118	8.045***
$\log(A_i + 1)$	0.574	0.049	11.625***
C_i^{12}	2.362	0.946	2.496*
Y_i^W	-0.876	0.242	-3.623***
I_i^S	-11.080	3.414	-3.245**
I_i^W	3.025	1.791	1.690'
$\log(R_i^{NASS}) \times H_i$	-0.236	0.028	-8.377***
$\log(R_i^{NASS}) \times C_i^{12}$	-0.628	0.226	-2.781**
$\log(R_i^{NASS}) \times Y_i^W$	0.208	0.055	3.784***
$\log(R_i^{NASS}) \times I_i^S$	3.039	0.850	3.574***
$(\log(R_i^{LVS}) - \log(R_i^{NASS})) \times I_i^W$	7.448	1.820	4.091***
MLRA fixed effects		Yes	

Notes: CRP^{97} is total CRP enrollment in 1997. All other variables are defined in Table K-4. One is added to a variable when the natural log is taken and it has values equal to zero. (***) indicates statistical significance with a p-value less than 0.001, (**) a p-value less than 0.01, (*) a p-value less than 0.05, and (') p-value less than 0.10.

Table K-5. Estimated coefficients and standard errors for the BIC-selected Tobit model of targeted enrollments

<i>Coefficient</i>	<i>Estimate</i>	<i>Standard Error</i>	<i>T statistic</i>
$\log(CRP^{97} + 1)$	0.355	0.027	13.312***
$\log(R_i^{LVS}) - \log(R_i^{NASS})$	1.570	0.282	5.571***
$\log(R_i^{NASS})$	2.627	0.286	9.173***
$\log(H_i + 1)$	0.604	0.187	3.236**
$\log(A_i + 1)$	0.995	0.076	13.039***
I_i^S	2.535	0.734	3.453***
I_i^W	14.969	4.525	3.308***
$\log(R_i^{NASS}) \times H_i$	-0.178	0.044	-4.016***
MLRA fixed effects		Yes	

Notes: CRP^{97} is total CRP enrollment in 1997. All other variables are defined in Table K-5. One is added to a variable when the natural log is taken and it has values equal to zero. (***) indicates statistical significance with a p-value less than 0.001, (**) a p-value less than 0.01.