August 24, 2015

Via Federal eRulemaking Portal
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Public Comments Processing
Attn: Docket No. EPA-HQ-OPP-2015-0389
Ms. Khue Nguyen
OPP Docket
Environmental Protection Agency Docket Center (EPA/DC), (28221T)
1200 Pennsylvania Ave., NW
Washington, DC 20460

Re: Comments Regarding *Pesticides; Risk Management Approach To Identifying Options for Protecting the Monarch Butterfly; Notice of Availability and Public Comment Opportunity*; 80 FR 36338; June 24, 2015; Docket No. EPA-HQ-OPP-2015-0389

Dear Ms. Nguyen:

CropLife America (CLA) appreciates the opportunity to review and comment on the subject proposed guidance document. Established in 1933, CLA represents the developers, manufacturers, formulators and distributors of crop protection chemicals and plant science solutions for agriculture and pest management in the United States. CLA's member companies produce, sell and distribute virtually all the crop protection and biotechnology products used by American farmers.

CLA represents interests of its member companies by, among other things, monitoring legislation, federal agency regulations and actions and litigation that impact the crop protection and pest control industries, and participating in such actions when appropriate. CLA is committed to working with the Environmental Protection Agency (EPA or the Agency), as the primary federal agency responsible for the regulation of pesticides, to encourage practical, science-based regulation of its members' products.

EPA has requested input on identifying activities that will balance weed management needs across varied landscapes with conservation of the milkweed plant. In particular, EPA is soliciting public comments on which potential action or combination of actions would be the most effective in reducing the impacts of herbicides on the monarch butterfly (*Danaus plexippus*).[1] CLA and its members recognize the role that the monarch butterfly and other pollinators play in agriculture and ecology, while also recognizing the importance that herbicides play in weed management in agricultural systems and other habitats.

[1] 80 Fed. Reg. 36,338 (June 24, 2015) *available at* www.regulations.gov/contentStreamer?documentId=EPA-HQ-OPP-2015-0389-0001&disposition=attachment&contentType=pdf.

In light of the many complex factors influencing monarch populations that do not fall under the authority of any single federal agency or national government, CLA supports an approach to conservation, focusing on public-private conservation partnerships and further research. CLA also makes several recommendations to EPA for balancing the goal of milkweed conservation with the need for management of milkweed and other weeds.

In considering a course of action for monarch butterfly and milkweed conservation, EPA must recognize that the decline in the population of monarch butterflies is the result of a complex set of factors, with complex solutions, many falling outside of EPA's authority. Recent studies even call into question whether summer monarch populations are experiencing the population declines observed in winter populations, suggesting that more research is needed on the role of milkweed habitat and monarch population dynamics.[2] It is important that any actions taken by EPA's Office of Pesticide Programs only be implemented if there is strong evidence that such actions will have a measurable, significant, positive and directly attributable impact on monarch butterfly populations.

EPA's activities must also be consistent with the Canada/Mexico/U.S. Trilateral Committee for Wildlife and Ecosystem Conservation and Management[3], in coordination with the U.S. Fish and Wildlife Service (FWS), as the U.S. signatory to this Memorandum of Understanding, and the Canadian and Mexican Governments. Further, EPA's efforts should be consistent with the interagency *National Strategy to Promote the Health of Honey Bees and Other Pollinators*[4], which emphasized the importance of evidence-based decision-making, collaborative public and private partnerships and expanded research programs to fill data gaps and assist in developing best management practices that address habitat improvement for monarch butterflies. In this strategy document, the White House recognized the need for additional research on the value of pollinators in natural systems, which is much more difficult to discern than for managed honey bees.[5] EPA has stated that it will be considering and evaluating information related to the monarch butterfly life cycle, seasonal distribution, population demographics, modeling analyses and other aspects that could impact the efficacy of monarch habitat sites. The Agency, however, should not duplicate efforts underway by Department of Interior and other groups that have been evaluating this information to develop best practices and implementation plans to support monarch habitat. If EPA's actions are not successfully coordinated with these other

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[2] *See, e.g.*, Ries, L., Taron, D. and Rendón-Salinas, E., *The Disconnect Between Summer and Winter Monarch Trends for the Eastern Migratory Population: Possible Links to Differing Drivers*, Annals of the Entomological Soc'y of Am. 108:1-9 (2015) *available at* http://aesa.oxfordjournals.org/content/aesa/early/2015/08/03/aesa.sav055.full.pdf.

[3] Memorandum of Understanding Establishing the Canada/Mexico/United States Trilateral Committee for Wildlife and Ecosystem Conservation and Management (1996), *available at* http://www.trilat.org/component/docman/doc_download/70-trilateral-mou.

[4] National Strategy to Promote the Health of Honey Bees and Other Pollinators (May 19, 2015), *available at* https://www.whitehouse.gov/sites/default/files/microsites/ostp/Pollinator%20Health%20Strategy%202015.pdf.

[5] *Id.* at 6.

conservation efforts, the Agency's actions could impose burdens on land managers without any measurable contribution to the goal of monarch conservation.

Current Monarch Conservation Efforts

Over the last two decades over which North American monarch populations have been monitored, habitat degradation, fragmentation and loss exacerbated by weather events (*e.g.*, low winter temperatures and drought), predation, pathogens, parasites and other stressors have contributed to a decline in the North American migrating populations. A combination of these factors results in significant variability in the observed area of the overwintering population. Expanding milkweed and nectar resources, while not necessarily the whole solution, is a prudent step towards improving the size of the migrating monarch populations.

The most impactful action that can be taken now to increase the size of monarch butterfly populations is to develop robust, multi-state programs to expand habitat. Partnerships will bring together groups with similar interests, build capacity, develop best practices and guidance, incentivize private land owners and drive multi-state initiatives that will expand habitat and positively affect monarch butterflies. Such partnerships should establish research on the cultivation and management of milkweed in non-crop areas to minimize cost and interference with agricultural production.

There is growing momentum among public researchers, state and federal government agencies, conservation groups and the private sector to restore and sustain milkweed populations alongside agriculture, in non-agricultural public and private lands and in urban and suburban settings. Several completed and ongoing monarch conservation efforts are summarized below. There are many other efforts not listed here that are also directed towards the goal of protecting and expanding monarch habitat.

- **Mexico**
  - The *Monarch Butterfly Biosphere Reserve* (Mariposa Monarca Biosphere Reserve) was established by the Mexican government in 1986 to protect 62-square miles of forests within four separate monarch sanctuaries. The Biosphere Reserve was expanded to include 217 square miles in 2000. The Biosphere program and recent Mexican government enforcement efforts to halt illegal logging in the area have been highly effective in preserving monarch wintering habitat within the reserves.[6]

  - The *Wildlife Without Borders Program – Mexico* is a grants program of the FWS, in partnership with Mexican authorities and non-governmental organizations, which has

[6] Vidal, O., López-Garcı´a, J. and Rendon-Salinas, E., *Trends in deforestation and forest degradation after a decade of monitoring in the Monarch Butterfly Biosphere Reserve in Mexico*, Conservation Biology, 28:177–186 (2014); Monarch Butterfly Conservation in North America, United States Department of Agriculture Forest Service (accessed Aug. 22, 2015) *available at* http://www.fs.fed.us/wildflowers/pollinators/Monarch_Butterfly/conservation/.

invested over $900,000 since 1996 in projects to protect and restore the wintering habitat of the monarch.[7]

- **United States - Federal**
  - The *Monarch Butterfly Program* of the U.S. Forest Service (USFS) is a subset of its Wings Across America Program, an international initiative addressing threats to the monarch and its habitat by uniting a wide range of partners across the monarch's migratory path in the United States, Canada and Mexico.[8] USFS coordinates and advances habitat conservation efforts through training and community outreach that reach both urban and rural populations. This program is designed to engage a wide range of audiences, including urban youth and schoolchildren that reside along the monarch's entire North American migratory path. In addition to these efforts, the Program works to create and preserve milkweed and other prairie plants.

  - The *U.S. Department of Agriculture* (USDA) has committed a total of $12 million in incentives for farmers and ranchers to establish programs to improve honey bee and pollinator habitat in the upper Midwest.[9] Under the Conservation Reserve Program, $8 million was made available. Four species of milkweed were included on the approved list of species eligible for planting under the program to "suppor[t] habitat for monarch butterflies."[10] The other $4 million was made available under the Environmental Quality Incentives Program to improve habitat for honey bees and pollinators.[11]

  - The *Monarch Joint Venture* (MJV) began in 2007 as a partnership of federal and state agencies, non-governmental organizations and academic programs to support and

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[7] Wildlife Without Borders Program – Mexico, U.S. Fish & Wildlife Service, *available at* http://www.fws.gov/international/wildlife-without-borders/mexico/ (accessed Aug. 11, 2015); *see also* Conserving the Monarch Butterfly, U.S. Fish & Wildlife Service *available at* http://www.fws.gov/international/animals/monarch-butterfly.html (accessed Aug. 11, 2015).
[8] *See* U.S. Forest Service Monarch Butterfly Program, *available at* http://www.fs.fed.us/global/wings/butterflies/welcome.htm (accessed Aug. 11, 2015).
[9] News Release, U.S. Department of Agriculture, USDA Provides $8 Million to Help Boost Declining Honey Bee Population (June 20, 2014), *available at* http://www.usda.gov/wps/portal/usda/usdahome?contentid=2014/06/0130.xml&contentidonly=true (accessed Aug. 11, 2015); News Release, U.S. Department of Agriculture, USDA to Provide $4 million for Honey Bee Habitat (Oct. 29, 2014), *available at* http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/home/?cid=stelprdb1262944 (accessed Aug. 11, 2015).
[10] U.S. Department of Agriculture, CRP Honey Bee Initiative (Aug. 19, 2014), *available at* https://www.fsa.usda.gov/Internet/FSA_Notice/crp_775.pdf (accessed Aug. 11, 2015).
[11] News Release, U.S. Department of Agriculture, USDA to Provide $4 million for Honey Bee Habitat (Oct. 29, 2014), *available at* http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/home/?cid=stelprdb1262944 (accessed Aug. 11, 2015).

coordinate efforts to protect the monarch migration across the lower 48 United States.[12] Since 2009, the MJV has engaged 18 partners, allocated financial contributions for science-based monarch conservation projects, and issued contract awards for over $750,000 to 12 partner organizations.[13]

- The MJV approach to monarch conservation work is guided by the North American Monarch Conservation Plan (NAMCP), a plan developed in 2008 by the intergovernmental organization, the Commission for Environmental Cooperation (CEC), to support cooperation among the United States, Mexican and Canadian governments to address environmental issues of continental concern.[14] The NAMCP provides an updated account of the species and its current situation; identifies the main risk factors affecting it and its habitat throughout the flyway; and summarizes the current conservation actions taken in each country. Against this background, the NAMCP offers a list of key tri-national collaborative conservation actions, priorities and targets to be considered for adoption by Canada, the United States and Mexico.

- The MJV's actions and projects address the following main objectives: (1) decrease or eliminate deforestation in the overwintering habitat; (2) combat threats of habitat loss and degradation in the flyway; (3) address threats of loss, fragmentation and modification of breeding habitat; (4) develop innovative enabling approaches that promote sustainable livelihoods for the local population; and (5) monitor monarchs throughout the flyway.

- *Monarch Conservation Funding*. FWS has allocated $2 million of additional funding in 2015 to existing projects dedicated to preserving or restoring more than 200,000 acres of habitat for monarchs, while also supporting over 750 schoolyard habitats and pollinator gardens.[15] The funds focus primarily on habitat restoration and enhancement projects, native seed strategies and education and awareness programs in the monarch's migration path along the I-35 corridor from Texas to Minnesota (*i.e.*, the areas that provide important spring and summer breeding habitats in the Eastern population's central flyway). Funds are also dedicated to the western monarch population.

- The *North American Pollinator Protection Campaign* (NAPPC) is a collaborative body of more than 120 diverse partners. Scientists, researchers, conservationists, government

[12] U.S. Department of Agriculture, The Monarch Butterfly in North America, *available at* http://www.fs.fed.us/wildflowers/pollinators/Monarch_Butterfly/index.shtml (accessed Aug. 11, 2015).
[13] Wendy Caldwell, *Monarch Joint Venture*, July 2009 – May 2014, *available at* http://monarchjointventure.org/images/uploads/documents/MJV_final_report_2014_FINAL.pdf.
[14] Secretariat of the Commission for Environmental Cooperation, North American Monarch Conservation Plan (2008), *available at* http://www.cec.org/Storage/62/5431_Monarch_en.pdf (accessed Aug. 11, 2015).
[15] U.S. Fish and Wildlife Service, Save the Monarch – Monarch Projects, *available at* http://www.fws.gov/savethemonarch/projects.html (accessed Aug. 11, 2015).

officials and dedicated volunteers are succeeding with major programs to protect pollinators, to raise awareness of pollinator-related issues and to benefit the health of all species – particularly those most threatened. Although the NAPPC is focused on pollinators generally, its conservation efforts positively impact the monarch.

- **United States – State and Local**
  - *California*. Several units of the National Park system and State Parks in California contain monarch overwintering sites.[16]

  - *Iowa*. The Iowa Monarch Conservation Consortium is a farmer-led, scientifically-based group that is working to enhance monarch butterflies in Iowa through the combined efforts of farmers, private citizens and their organizations. It is comprised of Iowa organizations representing farmers, livestock producers, conservation interests, the Iowa Department of Natural Resources, the Iowa Department of Agriculture and Land Stewardship and Iowa State University (ISU). ISU is currently raising approximately 10,000 seedlings of several milkweed species in greenhouses, to be planted later this year on 13 ISU research and demonstration farms throughout the state. The coordinated research and extension/outreach components of the consortium will also ensure that resources invested in conservation have a high likelihood of successfully supporting monarch populations.[17]

  - *Minnesota*.
    - The Minnesota Board of Water & Soil Resources (BWSR) is restoring approximately 5,000 to 8,000 acres of prairie and wetland on marginal agricultural lands as part of the Reinvest in Minnesota program each year. The Minnesota Prairie Conservation Plan guides restoration efforts in core areas of grassland habitat and corridors connecting these areas across the Minnesota landscape. Seed mixes with a minimum of twenty species are being used for these projects following the BWSR Native Vegetation Establishment and Enhancement Guidelines. Many of the projects also have native seedbanks that provide additional native flowers that benefit pollinators such as mints, vervains and milkweeds. Cost-share funding is also being used to increase diversity of existing projects through a habitat enhancement program.[18]

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[16] *See, e.g.*, Natural Bridges State Beach – California Department of Parks and Recreation, *available at* http://www.parks.ca.gov/?page_id=541 (accessed August 22, 2015).
[17] *New Consortium Launched to Conserve Monarch Butterfly Habitat in Iowa*, Mar. 2, 2015, *available at* http://www.cals.iastate.edu/news/releases/new-consortium-launched-conserve-monarch-butterfly-habitat-iowa (accessed Aug. 11, 2015).
[18] Minnesota Board of Water & Soil Resources, *Pollinator Plan* (Apr. 4, 2014), *available at* http://www.bwsr.state.mn.us/native_vegetation/Pollinator_Plan.pdf (accessed Aug. 11, 2015).

- The *Minnesota's Environment and Natural Resources Trust Fund* recently awarded to Pheasants Forever a grant for creation of the Minnesota Pollinator Partnership. Pheasants Forever, including its division, Quail Forever, is the nation's largest nonprofit organization dedicated to upland habitat conservation. Through this new initiative, Pheasants Forever will host 40 community events throughout the state to educate youth and their families about the value of pollinators to humans and pheasants through interactive habitat projects.[19]

- *Community Habitat Initiatives*. The National Wildlife Federation works with several local communities to create monarch habitat, educate citizens and advocate for local ordinances that protect milkweed and flowering plants. Such activities have occurred in the following communities: Utah, Cache Valley Wildlife Association; Maryland, Woodland Hills; Missouri, Chesterfield Citizens Committee for the Environment; Connecticut, Community Wildlife Habitat of Colchester and California, Alpine.[20]

- **Other International**
  - The *Trilateral Monarch Butterfly Sister Protected Area* (SPA) Network is a partnership of wildlife refuges and national parks in the United States and Canada, and natural protected areas in Mexico working together on monarch conservation projects.[21] The SPA network is a project of the Trilateral Committee for Wildlife and Ecosystem Conservation and Management. The project was initiated in May 2006 to collaborate on monarch habitat preservation and restoration; research and monitoring; and environmental education and public outreach.

- **Other Joint Public and Private Conservation Efforts**
  - In 2015, the National Fish and Wildlife Foundation (NFWF) established the Monarch Butterfly Conservation Fund to fund monarch conservation efforts. The Monarch Butterfly Conservation Fund was created with an initial $1.2 million commitment from FWS, which was matched by a three-year, $3.6 million commitment by one of CLA's members and further strengthened by $1 million in NFWF private funds, $400,000 in U.S. Forest Service funds, $250,000 in Bureau of Land Management funds and $250,000 in USDA Natural Resources Conservation Service funds. This Conservation Fund will focus on habitat restoration through: (a) planting native milkweed for caterpillars and nectar plants for adult monarchs; (b) increasing organizational capacity and coordination among organizations, states and regions engaged in monarch

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[19] News Release, "Pheasants Forever Earns Grant to Teach Minnesota Youth About Birds & Bees," *available at* http://www.pheasantsforever.org/Newsroom/2014-June/Pheasants-Forever-Earns-Grant-to-Teach-Minnesota-Y.aspx (accessed Aug. 11, 2015).
[20] National Wildlife Federation – Monarch Butterfly, *available at* http://www.nwf.org/Pollinators/Monarch/Communities.aspx (accessed Aug. 11, 2015).
[21] Trilateral Committee for Wildlife and Ecosystem Conservation and Management, *available at* http://www.trilat.org/ (accessed Aug. 11, 2015).

conservation and monitoring, milkweed seed blend production and distribution and monarch programming to ensure efficiency and the use and sharing of best practices; and (c) native seed production and distribution to increase production and availability of seeds and plants essential to habitat restoration. NWFW has received project proposals over the past few months and project awards will be made in September 2015. It is anticipated that an initial round of projects will commence in fall and early winter 2015.[22]

- A recent *Memorandum of Understanding* (MOU) between FWS and the National Wildlife Federation (NWF) is designed to serve as a framework for cooperation to restore and conserve monarch populations and habitats.[23] FWS and NWF have pledged to cooperate, particularly on efforts to raise awareness of monarch populations and their habitat. NWF will utilize its existing *Gardening for Wildlife* and *Forest and Farm* programs to promote monarch habitats. NWF will also conduct outreach and raise awareness of the monarch butterfly. FWS will make its public lands, staff and facilities available to further the MOU, develop a national communication strategy to raise awareness, and coordinate with other Federal agencies.

- The *Keystone Center Monarch Collaborative* is bringing interested parties together in an attempt to communicate the many ongoing efforts to a broader group of stakeholders. Government, private sector growers, agribusiness groups and environmental NGOs are working together toward collaboration, funding and implementation of comprehensive initiatives to address the recent decline in monarch populations.[24]

- The *Dakota Pollinator Partnership* is a collaboration between two leading pollinator habitat nonprofit organizations, Pheasants Forever and Project Apis m., and the Browning Honey Company, a family-owned beekeeping operation in the upper Midwest, with support from the USDA and the U.S. Geological Survey. This public-private conservation partnership builds on federal efforts to increase the quality and amount of habitat and forage for pollinators. The Partnership seeks to improve the health and survival of honey bees and other pollinators, including the monarch, by reversing the loss of high quality pollinator habitat in a geographic region that is home to a substantial

[22] National Fish and Wildlife Foundation – Monarch Butterfly Conservation Fund, *available at* http://www.nfwf.org/monarch/Pages/home.aspx#.VdnLC5dFpqM (accessed Aug. 22, 2015).
[23] Memorandum of Understanding between the National Wildlife Federation and the United States Fish and Wildlife Service, *available at* http://www.fws.gov/savethemonarch/pdfs/monarch-mou-signed.pdf (accessed Aug. 11, 2015).
[24] Keystone Policy Center, Monarch Butterfly Conservation, *available at* https://www.keystone.org/policy-initiatives-center-for-science-a-public-policy/environment/monarch-butterfly-conservation.html (accessed Aug. 11, 2015).

portion of the country's managed honey bees.[25] The project will run from October 2014 through August 2016.[26]

- *Integrated Vegetation Management Partners*, a specific private entity that has expertise in working with utilities and public rights of ways managers, has already established demonstration sites to show how rights of ways can be managed for pollinator habitat.[27] This effort serves as an example that can be expanded to include milkweed and nectar-bearing species necessary for the monarch butterfly by managing mowing activities and utilizing herbicide treatments that release existing seed for habitat development. These efforts serve as a basis for public rights of ways managers in state departments of transportation to work with adjacent land holders to provide monarch habitat while also minimizing the threat of undesirable weed species from gaining a foothold.[28]

- Apart from the milkweed necessary for monarch butterfly larvae, state Managed Pollinator Protection Plans (MP3s) are a vehicle for developing nectar sources for the adult monarch butterflies. The organizations working to provide summer habitat should be encouraged to include blooming species (including milkweeds and other nectar-bearing species) that support adult monarch butterflies, as many of these plants are likely to support other native and managed pollinators. The National Association of State Departments of Agriculture and its members have taken the lead in this area and are effective public partners working with the agricultural community.[29]

EPA should be aware of and consider ongoing cooperative monarch conservation efforts that mitigate potential impacts of herbicides on milkweed abundance, and conservation efforts that rely on the use of herbicides in any regulatory decision-making related to herbicides. These cooperative conservation efforts should form the basis for EPA's approach to maintaining a grower's ability to farm while conserving milkweed resources that can support resilient monarch populations.

Herbicide Use and Weed Management

Any EPA regulatory actions intended to protect milkweeds must be compatible with the vegetation management needs of land owners and managers, and recognize that policies and

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[25] *See* PAm – Pheasants Forever Habitat Partnership, *available at* http://projectapism.org/?page_id=1410 (accessed Aug. 11, 2015).
[26] *See* Contract No. 002-033, "North Dakota Pollinator Partnership" (Dec. 31, 2014), *available at* http://www.nd.gov/ndic/out/reports/SP-002-033.pdf (accessed Aug. 11, 2015).
[27] *See, e.g.*, IVM Managed Corridor, *available at* http://monarchjointventure.org/success-stories/ivm-managed-corridor (accessed Aug. 11, 2015).
[28] *See* 12 Million ROW Acres for Pollinators, *available at* http://www.ivmpartners.org/pollinator/ (accessed Aug. 11, 2015).
[29] State Managed Pollinator Protection Plans: Public-Private Partnerships, *available at* http://www.nasda.org/File.aspx?id=34760 (accessed Aug. 11, 2015).

practices that foster farmland productivity can be a catalyst for conserving and protecting wildlife habitat. As EPA is well aware, its regulation of pesticides must balance a host of environmental, economic and social factors. Without this thoughtful consideration, new herbicide use/label restrictions could inadvertently result in land management changes that would be more detrimental to milkweed and monarch butterfly populations than current practices.

These types of potential restrictions on herbicide use outlined in EPA's proposed guidance document,[30] focused only on potential impacts to milkweed and monarch butterflies, would appear to ignore the other numerous factors EPA must consider when establishing application rates, timing and buffers. Such restrictions could have significant economic and environmental consequences for farmers, as well as other entities that rely on herbicides for managing vegetation on public and private lands. For example, such restrictions could lower farm productivity and income, reduce the feasibility of reduced tillage systems, conflict with weed resistance management programs or discourage farmers from supporting habitat conservation. Solutions need to be practical and economically feasible, and take into account the myriad of factors that must be balanced in responsible pesticide use.

For example, such herbicide use limitations placed on farmers would impact yield.[31] In a thirtieth anniversary Nobel Peace Prize laureate speech, Dr. Norman Bourlaug cautioned that without the adoption of modern agricultural technologies including herbicides, fertilizers and modern genetics, global cereal production would have required the use of three times as much agricultural land across the globe to produce the same yields.[32] Rather than benefiting the monarch and increasing available habitat, broad herbicide use restrictions could have the unintended consequence of converting *more* land across the United States for agricultural use in order to maintain the same level of agricultural productivity, actually *decreasing* the amount of available habitat for the monarch butterfly.

A more successful approach would be to educate farmers on the importance of expanding and maintaining designated milkweed habitat outside of cropfields, coupled with targeted changes to herbicide use instructions, focused on further reducing herbicide effects on and around these habitat sites. These changes could include use of drift reduction technology and other practices to restrict drift and avoid impacts on milkweed resource sites or similar situations where the land manager's goal is to conserve monarch habitat. This approach is compatible with weed

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[30] Possible restrictions on herbicides that EPA has mentioned in its proposed guidance document include lower rates, decreased/limited frequency, modified application timing or in-field spray drift buffers. Risk Management Approach to Identifying Options for Protecting the Monarch Butterfly, U.S. Environmental Protection Agency, *available at* www.regulations.gov/contentStreamer?documentId=EPA-HQ-OPP-2015-0389-0002&disposition=attachment&contentType=pdf (accessed Aug. 11, 2015).

[31] *See* Gianessi, L. and Ankula, S., *The Value of Herbicides in U.S. Crop Production*, Weed Technology 21(2):559-566 (2007) (observing that agricultural yield losses from weed competition of 50-90% are not uncommon for crops grown in natural weed infestations).

[32] Norman E. Bourlaug, 1970 Nobel Peace Prize Laureate, *The Green Revolution Revisited and The Road Ahead*, The Norwegian Nobel Institute, 5 (September 8, 2000) *available at* http://www.nobelprize.org/nobel_prizes/peace/laureates/1970/borlaug-lecture.pdf.

management objectives in cropland and in non-crop areas adjacent to designated milkweed habitat sites. Specific instruction use changes would advise land managers and herbicide applicators of best management practices for protecting these designated sites.

Herbicides are commonly used in non-crop areas to (a) prevent the spread of unwanted weeds into crop fields; (b) keep waterways open; (c) eliminate fire hazards; (d) improve land access; (e) facilitate landscape restoration and renovation; (f) improve habitat for pollinators, monarchs and wildlife; and (g) remove woody and invasive species. Selective herbicides are important tools within an integrated vegetation management program to promote and maintain milkweed habitat. Herbicides are also critical for maintaining safety and infrastructure. Weeds can degrade or cause hazards on roads, sidewalks, railroads, industrial rights of ways and near communication, power and electrical transmission lines. These are also areas where EPA may consider whether label changes to promote milkweed growth might be productive.

In this instance, dialogue with stakeholders is essential to ensure that regulatory actions are practical and would appropriately balance all the factors that should be considered when regulating pesticide labeling. EPA's actions must be based on productive discourse that considers the importance of increasing agricultural productivity, sustaining environmental gains from reduced tillage systems, improving the economics of crop production and considering incentives/disincentives for growers responsible for implementing best management practices and complying with regulatory requirements. Continued agricultural production should be supported to benefit both agriculture and the monarch.

As herbicides and tillage have been very effective in managing milkweed for many decades prior to the introduction of genetically engineered (GE) crops in the 1990s, EPA should not accept a data correlation as evidence that over-the-top herbicide use is disproportionally responsible for the monarch butterfly's decline. Common milkweed (*Asclepias syriaca*, native to North America) thrives in disturbed habitat, so the development of American agricultural production over the past few hundred years may have been indirectly responsible for significant increases in monarch habitat and populations, long before such trends were a matter of widespread public interest.

Research Efforts

Similar to previously mentioned monitoring and conservation efforts, the majority of research conducted with the monarch butterfly has been carried out by citizens, governmental agencies and state/local governments. Not only is it important to document butterfly populations but also to understand the creature's biology in order to identify the most responsible and scientifically sound conservation efforts[33]. Research includes understanding parasitism on survival and

[33] Brower, L.P., Fink, L.S., Brower, A.V.S., Leong, K., Oberhauser, K., Altizer, S., Taylor , O., Vickerman, D., Calvert, W.H., Van Hook, T., Alonso, A., Malcolm, S.B., Owen, D.F. and Zalucki, M.P., *On the dangers of interpopulational transfers of monarch butterflies*, BioScience, 45(8):540-544 (1995).

reproduction,[34,35] host-parasite systems,[36,37,38] how parasitism can impact migration (such as wing size, shape, load),[39, 40] immunity and sex differences[41] and other areas that could potentially impact flight performance.[42,43,44,45] Continued research in these areas as well as others could provide the necessary information to promote butterfly populations and overwintering success.

Understanding the complex relationship between the milkweed plant and the monarch butterfly is essential in identifying and carrying out butterfly conservation efforts and successful milkweed propagation. Research on milkweed has been relatively limited; however, research evaluating

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[34] Altizer, S.M. and Oberhauser, K.S., *Effects of the protozoan parasite, Ophryocystis elektroscirrha, on the fitness of monarch butterflies (Danaus plexippus)*, Journal of Invertebrate Pathology, 74(1):76-88 (1999).

[35] Sander, S.E., de Roode, J.C., Davis, A.K. and Altizer, S., *Genetic factors and host traits predict spore morphology for a butterfly pathogen*, Insects, 4:447-462 (2013).

[36] Altizer, S.M., Oberhauser, K.S. and Brower, L.P., *Associations between host migration and the prevalence of a protozoan parasite in natural populations of monarch butterflies*, Ecological Entomology, 25:125-139 (2000).

[37] Lindsey, E., Mehta, M., Dhulipala, V., Oberhauser, K. and Altizer, S., *Crowding and disease: effects of host density on parasite infection in monarch butterflies*, Ecological Entomology, 34:551-561 (2009).

[38] Pierce, A., de Roode, J.C., Altizer, S. and Bartel, R., *Extreme heterogeneity in parasitism despite low population genetic structure among monarch butterflies inhabiting the Hawaiian Islands*, PLoS One, 9(6): e100061 (2014).

[39] Bradley, C. and Altizer, S., *Parasites hinder monarch butterfly flight: implications for disease spread in migratory hosts*, Ecology Letters, 8:290-300 (2005).

[40] Altizer, S.M., *Migratory behaviour and host-parasite co-evolution in natural populations of monarch butterflies infected with a protozoan parasite*, Evolutionary Ecology Research, 3:611-632 (2001).

[41] Lindsey, E.A. and Altizer, S., *Immunity and sex differences in response to selection in monarch butterflies*, Evolutionary Ecology, DOI:10.1007/s10682-008-9258-0 (2008).

[42] Bartel, R., Oberhauser, K., DeRoode, J. and Altizer, S., *Monarch migration and parasite transmission in eastern North America, Ecology,* 92:342-351 (2011).

[43] Altizer, S., and Davis, A.K., *Populations of monarch butterflies with different migratory behaviors show divergence in wing morphology*, Evolution, 64:1018-1028 (2010).

[44] Davis, A.K., Chi, J., Bradley, C. and Altizer, S., *The redder the better: wing color predicts flight performance in monarch butterflies*, PLoS One*, 7:*e41323 (2012).

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the effects on mowing[46], temperature[47], burning[48] and shade[49] on milkweed establishment/survival and its impact on the monarch butterfly have been published. Promoting science-based research in areas such as integrated milkweed management is essential in protecting the monarch butterfly. Future research areas via government, industry and academic partnerships and collaborations should seek to better understand milkweed biology and environmental factors that influence its establishment and survival, provide thorough surveys of milkweed densities in non-agricultural habitats, evaluate the introduction of milkweed and its impact on non-crop habitats, research best practices to ensure successful milkweed establishment in various non-crop landscapes and identify different vegetation and land management practices that could potentially impact milkweed densities and sustainably improve the foraging behavior of the monarch butterfly.

Overall, more research is needed to better understand the unique relationship between the monarch butterfly and the milkweed plant. Continuing research is essential in order to promote and conserve monarch populations in the most sustainable, efficient, effective and economical way possible.

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CLA and its members are ready to work with EPA, other federal and state agencies and private-sector partners to develop solutions that help restore and maintain monarch populations, while ensuring that our working agricultural lands remain productive. Expanding current partnerships will bring interest groups together, build capacity, promote research, further develop best practices and guidance, incentivize private land owners and drive multi-state initiatives that will expand biodiversity on public and private lands in agricultural, urban and suburban areas. Supporting cooperative conservation efforts is the most impactful way that EPA can positively affect monarch butterflies across North America.

CLA appreciates the opportunity to comment on this proposed guidance. Should you have any questions or comments, please feel free to contact me at 202-872-3874 or RMcAllister@croplifeamerica.org.

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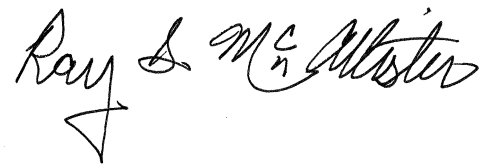
Regards,



Ray S. McAllister, PhD
Senior Director, Regulatory Affairs
CropLife America

cc: Jim Jones, Assistant Administrator, OCSPP
Jack Housenger, Director, OPP
Dan Ashe, Director, FWS