United States Department of Agriculture
Office of the Chief Economist
Office of Pest Management Policy
1400 Independence Avenue, SW
Washington, D.C. 20250-3810

March 12, 2025

Lori Nordstrom, Assistant Regional Director
Ecological Services
U.S. Fish and Wildlife Service
5600 American Boulevard West, Suite 990
Bloomington, Minnesota 55437-1458

Re: USDA Comments on the Proposed Listing and Section 4(d) Rule for Monarch Butterfly; FWS-R3-ES-2024-0137.

Dear Ms. Nordstrom:

Thank you for the opportunity to comment on the U.S. Fish and Wildlife Service's (FWS) proposed rule to list the monarch butterfly (*Danaus plexippus*) as a threatened species with protective regulations under section 4(d) and designate critical habitat under the Endangered Species Act of 1973, as amended. The proposed rule was posted on December 12, 2024, in the *Federal Register*.

The proposed rule requests information to assist FWS with applying or issuing protective regulations under section 4(d) of the Act to provide for the conservation of the monarch butterfly. FWS asks, "Whether we should include an exception for the use of pesticides and, if so, what measures are reasonable, feasible, and adequate to reduce or offset pesticide exposure to monarchs from agricultural and non-agricultural uses (*e.g.,* rangeland, rights-of-way, forestry, commercial areas, and mosquito control), including measures for specific classes of pesticides (*e.g.,* herbicides, insecticides), pesticide uses, and application methods." Our comments are specific to this request and focus on agricultural uses of pesticides.

Our detailed comments are attached for your review. USDA stands ready to provide FWS with additional information to help determine their approach to pesticide mitigation under the section 4(d) rule for the monarch butterfly, if needed. Please contact Elyssa Arnold at Elyssa.Arnold@usda.gov, or me at Kimberly.Nesci@usda.gov, if you would like to discuss this case further.

Sincerely,

Kimberly Nesci
Director, Office of Pest Management Policy

Cc: Ed Messina, Director, Office of Pesticide Programs, U.S. Environmental Protection Agency

USDA Office of Pest Management Policy Comments on the Proposed Listing and Section 4(d) Rule for Monarch Butterfly by the U.S. Fish and Wildlife Service
Docket FWS-R3-ES-2024-0137
March 12, 2025

Contents

1. Introduction

In the proposed rule to list the monarch butterfly as a threatened species, the U.S. Fish and Wildlife Service (FWS) requests information about whether to include an exception in the 4(d) rule for the use of pesticides, and what that exception might look like. This question impacts all pesticide users, including users of agricultural and non-agricultural pesticides in the U.S. As recognized in the proposed rule, pesticide distribution, sale, and use are regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). FIFRA is administered by the U.S. Environmental Protection Agency (EPA). All pesticides used in the United States must be registered by the EPA.

As part of EPA's pesticide registration process under FIFRA, EPA conducts an ecological risk assessment to ensure that the pesticide "will not generally cause unreasonable adverse effects on the environment." Under ESA, EPA is also obligated to consider the effects of its pesticide registration actions ("federal actions") on threatened or endangered species. EPA must consult with FWS and/or the National Marine Fisheries Service (NMFS) if their action is likely to adversely affect a listed species. Since 2022, EPA has stepped up their efforts to meet this obligation and described their plans to do so in their April 2022 ESA Workplan (USEPA 2022a) and subsequent November 2022 Workplan Update (USEPA 2022b). As laid out in the workplan, EPA has since published a Final Herbicide Strategy to Reduce Exposure of Federally Listed Endangered and Threatened Species and Designated Critical Habitats from the Use of Conventional Agricultural Herbicides (USEPA 2024a). EPA has also published a Draft Insecticide Strategy, with a final expected to follow by March 31, 2025 (USEPA 2024b).

Pesticide use restrictions are communicated to users on pesticide labels and "the label is the law." Pesticide applicators know that they are required to follow pesticide label requirements for

all applications. EPA takes into account risks to non-target species, including insects like the monarch butterfly, as they determine what restrictions are needed on any given pesticide label. They do this for both new pesticide registrations and the registration review of older pesticides that occurs on a 15-year cycle. EPA is also increasingly considering potential effects to listed species "up front" during their normal course of review for registration and registration review actions in addition to their formal consultations with FWS.

EPA's risk assessment process is robust and protective of non-target species. Therefore, in the 4(d) rule for the monarch butterfly, FWS should exempt all agricultural pesticide use that adheres to label instructions as part of normal agricultural practices. FWS took a similar approach in the 4(d) rule for the Puerto Rican harlequin butterfly, exempting "normal agricultural practices, including pesticide use, which are carried out in accordance with any existing regulations, permit and label requirements, and best management practices, as long as the practices do not include: (a) clearing or disturbing forest or prickly bush to create or expand agricultural areas, or (b) applying pesticides in or contiguous to habitat known to be occupied by Puerto Rican harlequin butterfly" (USFWS 2023).

2. Spray Drift Mitigation

In the proposed rule, FWS identifies their primary risk concern with pesticide uses for monarch butterflies as spray drift of insecticides: "*Insecticides are used in areas where monarchs occur and can drift off intended use sites with certain methods of application. They are likely to cause lethal and sublethal effects to nontarget lepidopterans (i.e., the order of insects that includes butterflies and moths) that are exposed.*" FWS also expresses a concern with herbicide uses that may result in the loss of milkweed and nectar.

Spray drift can be a concern for agricultural pesticide applications that use broadcast equipment such as ground booms and airblast sprayers or aerial applications from airplanes or helicopters. FWS is correct in identifying other application methods such as hand-held sprayers, soil injection, in-furrow sprays, tree trunk drenches, tree injection, seed treatments, granular formulations, and baits as having low exposure potential and therefore low risk concern for the monarch butterfly.

EPA has acted on multiple fronts in recent years to address potential risks from spray drift from broadcast agricultural applications of pesticides, including insecticides and herbicides, and we anticipate that additional spray drift restrictions will be added to pesticide labels via the process detailed in EPA's Herbicide and Insecticide Strategies (USEPA 2024a, 2024b).

2.1. *Herbicide and Insecticide Strategies*

EPA's Final Herbicide Strategy (USEPA 2024a) and draft Insecticide Strategy (USEPA 2024b) list the following baseline mitigations that EPA includes on labels with broadcast herbicide and insecticide applications:

1. restricting the maximum windspeed to 10 to 15 miles per hour,
2. prohibiting applications during temperature inversions,
3. boom length restrictions and swath displacements for aerial applications,
4. maximum release heights for ground and aerial applications, and
5. directing sprays into the canopy for airblast and turning off the outer nozzles at the last row.

In addition to those baseline mitigations, the strategies set forth a process for determining a downwind spray drift buffer distance based on the potential for population-level impacts associated with spray drift. For herbicides these impacts are assessed for non-target plants and for insecticides these impacts are assessed for non-target invertebrates. The buffer distances are modified based on droplet size distribution, application rate, the use of spray drift reducing adjuvants, reduced number of tractor or airplane passes through a field, the presence of windbreaks or hedgerows, the use of hooded sprayers, drop nozzles, or layby nozzles, and relative humidity ≥60%. Overall, this comprehensive approach is protective of potential direct impacts of insecticides on the monarch butterfly and of potential indirect impacts of herbicides on the monarch butterfly through effects on milkweed habitat due to spray drift.

A potential vulnerability with relying on the Herbicide and Insecticide Strategies for the protection of the monarch butterfly when a final listing decision is made is the timeline for full implementation. A final listing decision would likely occur in late 2025 or 2026. EPA's Strategies are not self-implementing and instead will be incorporated into pesticide label mitigation through the registration and registration review process over multiple years. However, EPA's efforts to strengthen spray drift language on pesticide labels pre-dates the Strategies and drift reducing measures are already on, or will soon be on, many of the most widely used agricultural herbicide and insecticide labels.

EPA also committed to evaluating and mitigating potential effects to listed species from all uses of newly registered pesticide active ingredients beginning in January 2022 (USEPA 2022c). An increased focus on mitigating all off-target movement is evident in EPA's approval of labels for new pesticides since that time. The most recently registered herbicide, glufosinate-p, incorporates label mitigation in line with the recommendations in the Final Herbicide Strategy (USEPA 2024c).

2.2. Pesticides Undergoing Formal Consultation with FWS

EPA's ESA Strategies forge a path for EPA to implement label mitigation for listed species prior to formal consultation with FWS, as described in detail in the ESA Workplan (USEPA 2022a) and the more recent Joint Statement of Cooperation Between EPA and FWS (USEPA 2025). Alongside this effort, formal consultations between EPA and FWS for many important insecticides and herbicides are underway. FWS has recently completed final biological opinions for the insecticides malathion and methomyl and a draft biological opinion for the insecticide carbaryl. The biological opinions include required label mitigation to ensure that listed species will not be jeopardized by the pesticide uses, including from spray drift. For pesticides that are also undergoing registration review, FWS can consider the comprehensive drift mitigation already proposed by EPA in their Proposed Interim Decisions (PID) for registration review. This was the case, for example, for methomyl, which had detailed mandatory and advisory spray drift mitigation laid out in the 2020 PID (USEPA 2020). Even though the monarch butterfly was not specifically evaluated in the consultation because it was not yet a listed species, the drift mitigation measures imposed to protect other non-target listed and non-listed species also serve to protect the monarch butterfly on a national basis.

Following EPA's schedule of biological evaluations, FWS will next be completing biological opinions for atrazine, simazine, and glyphosate, some of the most widely used herbicides in U.S. agriculture. Those will be followed by three widely used neonicotinoid insecticides, imidacloprid, clothianidin, and thiamethoxam. The list of chemicals and EPA's target dates for

completed biological evaluations are found in Appendix A of EPA's ESA Workplan (USEPA 2022a). Draft and final biological evaluations[1] and biological opinions[2] are available online. Organophosphate pesticides acephate, bensulide, dimethoate, ethoprop, naled, phorate, phosmet, and tribufos have also been scheduled for formal consultation, as laid out in a 2023 court settlement (US District Court 2023). Consultations that are completed following a formal listing of the monarch butterfly will explicitly incorporate mitigations for that species. However, even those completed in the nearer term, like for malathion, methomyl, and carbaryl, will include spray drift mitigation to protect non-target insects and plants and will almost certainly follow the drift mitigation approach in EPA's Herbicide and Insecticide Strategies.

2.3. Registration Review Decisions and FIFRA IEM

EPA reviews each registered pesticide against current standards every 15 years to ensure that it does not create unreasonable adverse effects to human health and the environment. The first round of registration review covers pesticides registered before October 2007. The deadline for the completion was extended from October 1, 2022, to October 1, 2026, in the reauthorization of the Pesticide Registration Improvement Act in 2022. Concurrently, the second round of registration review is underway.

The ongoing implementation of label changes through registration review has and will continue to result in substantial spray drift mitigation on pesticide labels. For pesticides with PIDs published since 2022 but prior to the implementation of EPA's ESA Strategies (or for pesticides for which the current strategies do not apply, such as fungicides), EPA's ESA Workplan Update introduced FIFRA Interim Ecological Mitigation (USEPA 2022b). Interim Ecological Mitigation #3: Reducing Ecological Risks from Spray Drift includes mandatory spray drift requirements to protect non-target species.

EPA's completed cases prior to 2022 similarly reflect a commitment to spray drift mitigation. The Interim Registration Review Decisions for pyrethroids, a major class of insecticides, were published in 2020. The final label language for products with agricultural uses includes both mandatory and advisory spray drift language for aerial, airblast, and ground boom applications. The requirements mirror the baseline spray drift mitigations in the ESA Strategies, addressing droplet size, release height, wind speed, temperature inversions, boom length, and more, with details tailored to pyrethroid applications.

2.4. 4(d) Rule Recommendation

Given the recent and ongoing efforts by EPA to strengthen spray drift mitigation on agricultural pesticide labels to minimize exposure to non-target species, USDA recommends that the final 4(d) rule for the monarch butterfly exempt all agricultural pesticide use that adheres to label instructions as part of normal agricultural practices. The rule could also specify that EPA continues to follow and implement spray drift mitigation as outlined in the ESA strategies, allowing for modifications as additional data are incorporated. Overall, labeled agricultural pesticide uses pose a negligible risk to the monarch butterfly due to existing and ongoing label mitigation strategies for spray drift reduction.

[1] https://www.epa.gov/endangered-species
[2] https://www.epa.gov/endangered-species/biological-opinions-available-public-comment-links-final-opinions-and-links

3. Pollinator Protection

Outside of ESA efforts, EPA has put considerable and repeated effort over the past decade into pollinator protection from pesticide uses. In 2017, EPA published a Policy to Mitigate the Acute Risk to Bees from Pesticide Products (USEPA 2017). EPA has previously required a Bee Advisory Box for neonicotinoid products[3] and pollinator advisory language for pyrethroid labels (USEPA 2021). EPA included pollinator stewardship advisory language in the ESA Workplan Update as a FIFRA Interim Ecological Mitigation (USEPA 2022b). EPA has also supported the development of state pollinator protection plans, which were in place or in development in at least 27 states as of 2022 (AAPCO 2022).

While all of these efforts are focused on bees rather than lepidopteran species, together they help to raise awareness of best practices for protecting pollinator species, including being alert to the presence of pollinators on or near an agricultural field and avoiding pesticide applications on or near blooming plants when possible. These efforts serve to incrementally protect monarch butterflies from pesticide impacts along with other pollinators.

4. Additional Opportunities

While exempting agricultural pesticide use that adheres to label instructions as part of normal agricultural practices in the 4(d) rule, FWS should also undertake an education campaign directed at the agricultural sector to ensure that growers and pesticide applicators are aware of monarch butterflies and their potential sensitivities. For example, FWS can ensure that growers and applicators are aware of the timing of monarch butterfly presence in their region. This effort could build on the many voluntary monarch and pollinator health programs that are already working with agricultural producers to protect the monarch butterfly.

There are many pollinator habitat conservation programs in the United States administered by NGOs, private companies, state governments, and federal agencies. These programs can benefit listed pollinators, including butterflies and bees. In an initial search, USDA identified more than 30 programs specifically focused on pollinator habitat conservation, including rigorous habitat certifications, programs to provide technical and financial assistance for habitat creation and enhancement, and public awareness campaigns. Some programs focus specifically on creating habitat for the monarch butterfly or other listed species, while others focus more broadly on bees and/or butterflies. The programs range from nationwide to regional or state specific and vary in scope from agriculture to residential.

Influential and high impact programs include the Pollinator Partnership's Bee Friendly Farming[4] certification program, the Xerces Society for Invertebrate Conservation's Bee Better Certified[5] program, the National Fish and Wildlife Foundation's Monarch Butterfly and Pollinators Conservation Fund[6], the Bee and Butterfly Habitat Fund's Seed a Legacy Program[7], and the

[3] https://www.epa.gov/sites/default/files/2013-11/documents/bee-label-info-graphic.pdf
[4] https://www.pollinator.org/bff/bff-us
[5] https://beebettercertified.org/
[6] https://www.nfwf.org/programs/monarch-butterfly-and-pollinators-conservation-fund
[7] https://www.beeandbutterflyfund.org/

Monarch Joint Venture's Pollinator Habitat Help Desk[8] and Monarchs and More Western Habitat Programs[9].

Some NGO administered programs connect growers to state or federal government resources. There are also many broad habitat programs administered by federal agencies that apply to pollinators, which also sometimes have pollinator-specific initiatives. A recent analysis shows that these practices have an outsized impact on pollinator populations, accounting for 2.5% of the nation's seminatural habitat and 3.9% of the national pollinator supply (Olimpi and Karpanty 2023).

Critically, FWS should take care not to disincentivize habitat creation or maintenance near agricultural fields with overly burdensome pesticide use restrictions. Milkweed habitat is critical to the survival and recovery of the monarch butterfly population. Research has shown that milkweed habitat in or near agricultural systems is beneficial to monarchs on net, even when pesticides are used in those systems (Grant *et al*. 2022). Working to educate agricultural stakeholders and working together with established monarch conservation programs can help support the recovery of the monarch butterfly in the U.S.

5. Summary

In summary, USDA recommends that as part of the 4(d) rule for the monarch butterfly, FWS exempt all agricultural pesticide use that adheres to label instructions as part of normal agricultural practices for the following reasons:

- EPA already has sufficient spray drift mitigations in place, or being added to agricultural pesticide labels in the near term, as a result of their efforts to reduce risk to non-target species under FIFRA and to comply with their obligations under ESA. While these efforts are not complete, they are substantial and ongoing.
- EPA has implemented multiple pollinator protection labeling efforts for insecticides.
- EPA is responsible for regulating pesticides and communicating use restrictions to pesticide applicators via the label. Mitigations put in place outside of this process would be difficult to effectively communicate to pesticide users. Additional and potentially overly burdensome restrictions, particularly if not clearly communicated, could also have the unintended consequence of disincentivizing monarch and other pollinator habitat creation and maintenance on or near agricultural lands.
- FWS can help to support EPA's ongoing efforts through targeted education for growers and pesticide applicators about how to protect the monarch butterfly. FWS can do this in coordination with the many existing monarch habitat protection programs. This approach will help to protect the monarch and bridge the gap as EPA works to bring all pesticide labels into full compliance with ESA while maintaining robust food and fiber production in the U.S.

[8] https://monarchjointventure.org/mjvprograms/habitat/technical-assistance-for-farmers-and-landowners
[9] https://monarchjointventure.org/mjvprograms/habitat/monarchs-and-more-western-habitat-program

6. References

AAPCO. 2022. 2022 National Assessment – Pollinator Protection Plans. Association of American Pesticide Control Officials. Available at https://aapco.org/2015/07/01/current-topics/. Accessed February 26, 2025.

Grant, Tyler J, Kelsey E Fisher, Niranjana Krishnan, Alexander N Mullins, Richard L Hellmich, Thomas W Sappington, James S Adelman, Joel R Coats, Robert G Hartzler, John M Pleasants, Steven P Bradbury. Monarch Butterfly Ecology, Behavior, and Vulnerabilities in North Central United States Agricultural Landscapes. *BioScience*, Volume 72, Issue 12, December 2022, Pages 1176–1203, https://doi.org/10.1093/biosci/biac094.

Olimpi, EM and SM Karpanty. 2023. Evaluating the nationwide impact and potential of USDA Natural Resources Conservation Service pollinator habitat enhancements in the context of climate-related land cover change. Final Report for USDA's Conservation Effects Assessment Project; Award NR223A750023C003. Virginia Polytechnic Institute and State University. Available at https://www.nrcs.usda.gov/sites/default/files/2024-06/CEAPWildlife-VirginiaTechReport-ConservationProgramsAndPollinators-June2024.pdf. Accessed September 9, 2024.

US District Court for the Northern District of California, San Francisco Division. 2023. Proposed Stipulated Settlement Agreement. Case No. CV-11-0293-JCS. Available at https://www.regulations.gov/document/EPA-HQ-OGC-2019-0478-0009. Accessed February 25, 2025.

USEPA. 2017. U.S. Environmental Protection Agency's Policy to Mitigate the Acute Risk to Bees from Pesticide Products. Washington, DC: U.S. Environmental Protection Agency, Office of Pesticide Programs. https://www.epa.gov/pollinator-protection/policy-mitigating-acute-risk-bees-pesticide-products. Accessed January 27, 2023.

USEPA. 2020. Methomyl and Thiodicarb Proposed Interim Registration Review Decision Case Numbers 0028 (methomyl) 2675 (thiodicarb); September 2020. Washington, DC: U.S. Environmental Protection Agency, Office of Pesticide Programs. Available at https://www.regulations.gov/document/EPA-HQ-OPP-2010-0751-0041. Accessed February 26, 2025.

USEPA. 2021. Updated Label Language for the *Pyrethroids and Pyrethrins Revised Ecological Risk Mitigation and Response to Comments on the Ecological Risk Mitigation Proposal For 23 Chemicals*, September 30, 2020. Washington, DC: U.S. Environmental Protection Agency, Office of Pesticide Programs. Available at https://www.regulations.gov/document/EPA-HQ-OPP-2008-0331-0182. Accessed February 26, 2025.

USEPA. 2022a. Balancing Wildlife Protection and Responsible Pesticide Use. Washington, DC: U.S. Environmental Protection Agency, Office of Pesticide Programs. Available at https://www.epa.gov/system/files/documents/2022-04/balancing-wildlife-protection-and-responsible-pesticide-use_final.pdf. Accessed February 25, 2025.

USEPA. 2022b. ESA Workplan Update: Nontarget Species Mitigation for Registration Review and Other FIFRA Actions. Washington, DC: U.S. Environmental Protection Agency, Office of

Pesticide Programs. Available at https://www.epa.gov/system/files/documents/2022-11/esa-workplan-update.pdf. Accessed May 1, 2023.

USEPA. 2022c. EPA Announces Endangered Species Act Protection Policy for New Pesticides. Washington, DC: U.S. Environmental Protection Agency, Office of Pesticide Programs. Available at https://www.epa.gov/newsreleases/epa-announces-endangered-species-act-protection-policy-new-pesticides. Accessed February 26, 2025.

USEPA. 2024a. Herbicide Strategy to Reduce Exposure of Federally Listed Endangered and Threatened Species and Designated Critical Habitats from the Use of Conventional Agricultural Herbicides. Washington, DC: U.S. Environmental Protection Agency, Office of Pesticide Programs. Available at https://www.regulations.gov/document/EPA-HQ-OPP-2023-0365-1137. Accessed August 30, 2024.

USEPA. 2024b. Draft Insecticide Strategy to Reduce Exposure of Federally Listed Endangered and Threatened Species and Designated Critical Habitats from the Use of Conventional Agricultural Insecticides. Washington, DC: U.S. Environmental Protection Agency, Office of Pesticide Programs. Available at https://www.regulations.gov/document/EPA-HQ-OPP-2024-0299-0005. Accessed February 25, 2025.

USEPA. 2024c. Memorandum Supporting Final Decision to Approve Registration for the New Active Ingredient Isomer Glufosinate-P. Washington, DC: U.S. Environmental Protection Agency, Office of Pesticide Programs. Available at https://www.regulations.gov/search?filter=EPA-HQ-OPP-2020-0250-0047. Accessed February 26, 2025.

USEPA. 2025. Addressing Endangered Species Act 7(a)(1) and 7(a)(2) Obligations: Plan to Promote the Recovery of Species and Streamline Consultation for Conventional Pesticides and Endangered Species Act Listed Species Under the Authority of the US Fish and Wildlife Service. Washington, DC: U.S. Environmental Protection Agency, Office of Pesticide Programs. Available at https://www.epa.gov/endangered-species/joint-statement-cooperation-between-epa-and-fws-help-protect-endangered-species. Accessed February 26, 2025.

USFWS. 2023. Endangered and Threatened Species: Puerto Rican Harlequin Butterfly. Boqueron, Puerto Rico: U.S. Fish and Wildlife Service, Caribbean Ecological Services Field Office. Available at: https://www.regulations.gov/document/FWS-R4-ES-2020-0083-0016. Accessed February 25, 2025.