The Florida Mosquito Control Association

10 February, 2025

Martha Williams
Director
U.S. Fish & Wildlife Service
C/o Public Comments Processing
Attn: FWS-R3-ES-2024-0137-0001
U.S. Fish and Wildlife Service, MS: PRB/3W
5275 Leesburg Pike
Falls Church, VA 22041-3803

Re: Docket Number FWS-R3-ES-2024-0137-0001
Comments on the U.S. Fish & Wildlife Service ("USFWS") proposed rule to list the monarch butterfly as a threatened species and designate critical habitat

Dear Director Williams,

The Florida Mosquito Control Association (FMCA) is pleased to submit comments on the U.S. Fish and Wildlife Service (USFWS) proposed rule to list the monarch butterfly as a threatened species and designate critical habitat, as published in the Federal Register on December 12, 2024.

The FMCA supports its members, including mosquito control programs and industry partners, by promoting environmentally sound, effective mosquito management to protect public health statewide. FMCA enhances disease prevention efforts through public awareness campaigns, fostering community support for mosquito control, and advancing scientific expertise with training and education. Our members play a vital role in safeguarding Florida's residents and visitors.

While FMCA supports conservation efforts for pollinators, including monarch butterflies, we have significant concerns about the potential unintended consequences of the proposed rule, particularly the impact of restrictions on mosquito control activities. Given Florida's climate and unique public health risks associated with mosquito-borne diseases, it is imperative that public health protection measures, including Integrated Mosquito Management (IMM), are not hindered by overly broad regulatory interpretations. Effective mosquito control is essential not only for protecting public health but also for supporting Florida's robust tourism-driven economy by preventing disease outbreaks that would deter visitors and harm local businesses.

We offer the following comments to ensure that the listing of the monarch butterfly does not result in unnecessary public health and economic consequences due to potential restrictions on mosquito control efforts in the State of Florida.

Re: 4(d) 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

The USFWS identifies pesticide exposure, particularly from insecticides, as a probable factor contributing to the decline of monarch butterflies (Federal Register, pages 100672-100673). Specifically, the agency emphasizes the impact of insecticides used in vector control programs, patricularly pyrethroids and organophosphates. Krischik et al. (2015), James et al. (2019), and Bargar et al. (2020) are cited in the Species Status Assessment Report as evidence that pesticides have demonstrated monarch toxicity at product label application rates, but these studies assess imidacloprid (a neonicotinoid), an active ingredient not used in mosquito control. Similarly, Krishnan et al. (2020) evaluates foliar insecticides used in maize and soybean fields for aphid control, which is also unrelated to mosquito control. None of the cited studies specifically address mosquito control practices, and the proposed rule incorrectly categorizes mosquito control operations alongside agricultural pesticide applications, failing to recognize the distinct methodologies used in vector control.

Ground and aerial ultra-low volume (ULV) adulticide applications differ fundamentally from agricultural and forestry insecticide applications. ULV applications are precisely calibrated to produce droplet sizes in a fine mist that remains suspended in the air column, effectively targeting flying adult mosquitoes while minimizing ground deposition and reducing exposure to non-target organisms (Dukes et al 2002, Zhong et al 2011, Qiu et al 2021, Hart et al 2024). These applications are carefully designed to deliver the minimum effective dose required for mosquito control. Since the product loses efficacy upon reaching the ground, maintaining an airborne mist is essential. By minimizing deposition and refining dosage, we enhance the precision of mosquito control efforts while also reducing operational costs and potential impacts on non-target species (Dukes et al 2002). ULV applications are typically conducted between dusk and dawn, when monarch butterflies and other pollinators are inactive, further mitigating ecological risks. These treatments are generally focused on residential areas, where monarch host plants are less prevalent (Kim et al 2022). When industry best practices are followed—such as proper drift management, droplet characterization, effective dosing, and application timing—the impact on monarch butterflies is minimal and not expected to affect their populations (Giordano et al 2020, Kim et al 2022).

Research demonstrates that while ground applications of the pyrethroid-based product Deltagard can potentially harm monarchs in an open field, these effects diminish with distance from the spray route (Giordano et al 2020), highlighting the importance of effective drift management. Studies using malathion, an organophosphate, suggest that butterflies in natural settings are less impacted by mosquito control applications than laboratory and open field tests indicate, emphasizing the importance of conducting adulticide sprays at night and adhering to label guidelines to reduce non-target impacts (Kim et al 2022). In addition, mosquito control ULV applications primarily target residential areas, where monarch host plants are less common, further reducing potential impacts. When applications follow proper drift management practices and are timed appropriately, the impact on monarch populations is unlikely to affect the species at the population level.

Further, ground and aerial larvicide applications primarily rely on organic, naturally derived compounds specifically designed to target mosquitoes and other nuisance pests. These applications are strategically deployed in aquatic habitats, posing minimal risk to monarch butterfly populations. In fact, larvicide use has been shown to reduce the need for adulticide applications in nearby residential areas (Hribar et al 2011).

Mosquito-borne diseases remain a persistent public health threat in Florida, a state home to over 80 mosquito species. In the past three years, the spread of the dengue virus has been a growing concern, with 91 locally-acquired cases and 999 travel-associated cases reported in 2024 (FDOH 2025). Additionally, Florida experienced its first malaria outbreak in two decades in 2023, which was effectively controlled through coordinated mosquito control efforts. Emerging threats, such as the oropouche virus introduced through travel-related cases (FDOH 2025), and potentially novel pathogens originating from natural areas (Fish et al 2021), continue to pose risks. By suppressing mosquito populations and mitigating disease transmission, mosquito control plays a vital role in safeguarding public health, enhancing community well-being, and supporting the state's economy.

At this time, the impacts of monarch deaths due to ULV mosquito control applications should be considered minimal and unlikely to affect the monarch butterfly at the population level. ***We respectfully propose that incidental take resulting from routine mosquito control insecticide applications conducted in accordance with existing or revised label guidelines and established best management practices be exempted from the prohibitions under this 4(d) rule.*** We further recommend that these exceptions be clearly outlined through the use of the Bulletins Live! Two system, similar to the mosquito control mitigations proposed in the EPA's Vulnerable Species Action Plan and the malathion biological opinion. This approach would provide regulatory clarity for mosquito control professionals, ensuring continued protection of public health and the economic vitality of Florida while supporting ongoing conservation efforts for the monarch butterfly.

Please consider the Florida Mosquito Control Association as a resource on this important issue, and we are happy answer any questions or concerns you may have. Please do not hesitate to contact the association at ExecutiveDirector@yourfmca.org.

Sincerely,

Jorge R. Rey, PhD
President@yourfmca.org
President
Florida Mosquito Control Association

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