March 12, 2025

Public Comments Processing
Attn: FWS-R3-ES-2024-0137
U.S. Fish and Wildlife Service, MS:PRB/3W
5275 Leesburg Pike
Falls Church, Virginia 22041-3803

Subject: Proposed listing of the Monarch butterfly (*Danaus plexippus*) as a threatened species and designation of critical habitat under the Endangered Species Act of 1973, as amended (Act) - Docket No. FWS-R3-ES-2024-0137

Summary of Comments

On behalf of the members of the Western Section and Oregon Chapter of the Wildlife Society, the following comments are submitted supporting the proposed listing of the Monarch butterfly (*Danaus plexippus*) as a threatened species, with protective regulations under section 4(d) and designation of critical habitat under the Endangered Species Act of 1973, as amended (ESA). However, considering the imminent threat to the western population, we feel that listing as an endangered species would be more appropriate based upon the criteria of being "in danger of extinction throughout all or a significant portion of its range". The western population, which is a *significant portion of its range,* faces the likelihood of extinction in the absence of listing protections.

Basis for Comments by the Western Section and Oregon Chapter of The Wildlife Society

TWS was founded in 1937 and is a non-profit professional society representing wildlife biologists, managers, and educators dedicated to excellence in wildlife stewardship through science and education. The mission of TWS is to inspire, empower, and enable wildlife professionals to sustain wildlife populations and habitats through science-based management and conservation.

The Western Section of TWS represents over 1,000 professional wildlife biologists residing in Nevada, California, Hawaii, and Guam. Our members are working wildlife biologists and wildlife professionals with extensive experience in wildlife population research and monitoring,

conducting species- and community-specific wildlife surveys, evaluating sensitive species listing, and brokering mitigation agreements and compliance.

The Oregon Chapter represents nearly 600 wildlife professionals from throughout public and private enterprises composed of students, scientists, educators, technicians, consultants, biologists, and land managers. These professionals dedicate their lives to managing, conserving, and studying wildlife populations and their habitats throughout Oregon. Our mission is to inspire, empower, and enable Oregon's wildlife professionals and students to promote science-based wildlife conservation and management through the participation and leadership of an open and inclusive community of members.

Our collective professional training and experience provide a strong and unique basis for providing the following comments relating to the proposed listing of the monarch butterfly and associated designation of critical habitat. Due to the geographic scope of our collective membership we will focus on the western population of monarch butterflies, but this does not preclude nor diminish the importance of listing for the eastern population.

Summary of Need

The western population of the monarch butterfly has likely surpassed the critically low population level and therefore more aggressive approaches may be necessary to prevent extinction. As established in the TWS issue statement on the Endangered Species Act[1], implementation of the ESA has been successful in achieving the legislation's primary goal of preventing species extinctions. Improvements in the status of listed species are correlated positively with the number of years of protection under the ESA, funding available to the United States Fish and Wildlife Service and/or National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) to implement recovery strategies, and number of recovery plan tasks completed. Greater commitment and integration of federal, tribal, state, local, and private resources are key to ensuring effective implementation of the ESA to achieve its fundamental goal of preventing extinction and recovering species. Identifying rare and declining species before their populations reach critically low levels allows the implementation of more ecologically, socially, and economically viable conservation options.

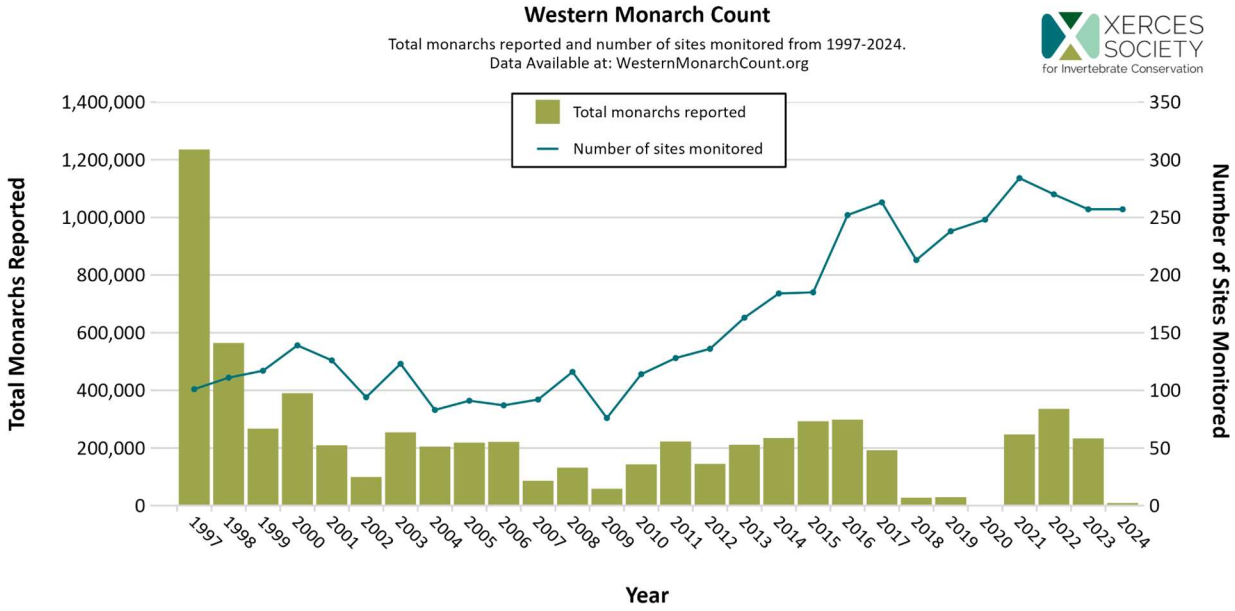
Biology, Range, and Population Trends

There are two recognized populations of monarch butterflies, based on their geographic range: western and eastern. The western monarch population is primarily a migratory population that mostly overwinters along the coast of California and migrates to several western states including Oregon, Washington, Idaho, and Nevada where they spend the spring and summer in their breeding grounds (Pelton et al. 2019). There is a small

[1] https://wildlife.org/tws-issue-statement-the-u-s-endangered-species-act/

western nonmigratory population in southern California, as described in the Federal Register Notice.

We support reliance upon the data provided by the Xerces Society for the western population; they manage the Western Monarch Count and therefore have the best data regarding the number, distribution, and trends of monarch butterflies in the west. See the figure below, provided by the Xerces Society, illustrating the significant decrease in western monarchs even as the survey effort increased.



There is a 99% probability that the western population will be extinct by 2080 if conservation measures are not successful (USFWS 2024). These numbers need to be taken into consideration when evaluating the listing. The Federal Notice only acknowledges a 10-year horizon, which does not communicate an accurate story. However, the 60-68% probability of extinction in the next 10 years reported in the Federal Notice is still cause for concern and support for listing the monarch butterfly at a minimum as threatened, and more appropriately as endangered. Taken in context of the approximate 95% population decline since the 1980s (USFWS 2024; Shultz et al. 2017) the direness of the situation is clearer.

Monarch populations overwintering in California were estimated to number 3-10 million in the 1980's, by 1997 there were just over 1.2 million (westernonarchcount.org), with a precipitous drop in 1998 from which the population has not recovered, fluctuating mostly between 30,000 and 300,000 over the last 20 years (Shultz et al. 2017). The 2024 count of monarch butterflies in California was the second lowest on record, with less than 10,000 individuals (westernonarchcount.org).

Threats and Conservation Actions

Given the large seasonal migrations and dependence on multiple habitat types, loss of habitat and the decline of nectar producing plants are some of the biggest threats to the western monarch population. Urban development, roadside mowing, changing agricultural practices, catastrophic wildfires, and increase in pesticide use have all contributed to the decline of monarch habitat and their food sources. Other additional threats directly impacting monarchs include captive rearing and disease (e.g., *Ophryocystis elektroscirrh*a; OE). The Xerces Society has published Best Management Practices for managing western monarch butterflies (2018) which should be incorporated into conservation actions under this listing.

Planting of native milkweeds and native wildflowers should be incentivized, with clear educational materials that the milkweeds must be native to the area to be beneficial. Some exotic milkweeds are toxic to monarchs and proliferate the spread of disease, such as OE. Milkweeds provide food for caterpillars while wildflowers provide nectar for butterflies (Xerces 2018).

Monarchs are reared in captivity for many purposes including selling for celebratory releases, raising for educational purposes, and the good intentions of releasing them into the wild to supplement the struggling wild populations. Captive reared individuals that escape or are released into the wild from non-professional breeders can be detrimental to the wild monarch population. These captive reared monarchs are unfit for the wild, having reduced physical strength, lack navigational awareness for migration, and can spread disease to the wild population. Of particular concern is the disease *Ophryocystis elektroscirrha* (*OE*; Altizer et al. 2015, Davis et al. 2020, Davis 2021) which spreads more readily in the denser population of captive rearing. OE is a protozoan parasite that impacts flight performance and can lead to increased mortality of adults (Majewska et al. 2022). In addition, exotic milkweed can contribute to the spread of OE and they can increase infection rates of butterflies with OE (Satterfield et al. 2016).

Monarch overwintering sites are strongly correlated with mature eucalyptus groves, which are highly flammable. Landowners, understandably, want to cut down their eucalyptus groves for fire safety concerns, but it will result in immediate loss of habitat. Incentivize planting suitable, native, trees that are more resistant to wildfire, such as monterey pine, monterey cypress, and redwoods.

Pesticide use, primarily the development of neonicotinoid insecticides in the 1990's, has directly impacted monarchs and has become a significant factor contributing to their demise over the last 30 years. Monarchs become exposed to this synthetic chemical when feeding on nectar and pollen of plants that have been sprayed with neonicotinoids (David et al. 2016). Exposure to these chemicals can have both lethal and sublethal

effects on pollinators including developmental effects such as reduced wing growth (Olaya-Arenas et al. 2020), reduced larval survival (Knight et al. 2021), and reduced adult longevity (James 2019).

Changing agricultural practices and the reliance on herbicides to control weeds has also indirectly affected monarch butterflies through the reduction of nectar producing plants. The development of glyphosate resistant crops in the mid 1990's allowed for the widespread application of glyphosate to control weeds within soybean, corn, and many other crops across the west and midwestern states (USDA, Economic Research Service, 2011). This allowed farmers to more effectively control weeds (including milkweed) without causing harm to the crop. This new technology and reliance on glyphosate led to an 81% decline in milkweed found in agriculture fields in the midwest from 1999 to 2010, significantly reducing the abundance of nectar producing plants available to monarch butterflies (Pleasants and Oberhauser 2013). Another changing agriculture practice likely having an impact on monarchs is the shift to No-Till farming practices. Reduced ground disturbance from No-Till practices helps reduce soil erosion and increase soil water storage but increases the reliance on herbicide applications to control weeds and pests (Dang et al. 2020). This reliance on chemicals and shifting agricultural practices has undoubtedly impacted the western monarch population through direct mortality and injury as well as indirect mortality due to a reduction in nectar producing plants across the west.

Given the multitude of threats that are impacting monarch habitats, food sources, and survival/fitness, we recommend several conservation actions to help recover this population. We strongly suggest taking action to protect critical wintering habitat along the pacific coast of California. Development, removal of trees, and wildfires are the biggest threat to winter habitat and actions must be taken to designate more of these areas as critical habitat. Efforts should be made to fill data gaps to identify migration routes and other key breeding habitats across the west. This data will help managers identify areas to protect and restore throughout Oregon, Nevada, Washington, Idaho, and Arizona and may identify new locations in California. In these breeding habitats where we lack knowledge on monarch presence, we recommend limiting roadside mowing during critical periods and encourage the planting of native milkweed species in residential areas and across public lands. Lastly, we propose that captive rearing should only be allowed for conservation and population recovery purposes by permitted individuals. There should be no allowance for-profit or other non-conservation focused captive rearing as they are incompatible with listed species.

Applying or Issuing Protective Regulations

Protections for overwintering habitat in California are inconsistent across local agencies, Local Coastal Programs, and the California Coastal Commission. Protections need to

be strengthened at the federal level so that they may be consistent across California, and the complete range of monarch butterflies. To be effective, violations of protective measures need to be enforceable.

Critical Habitat

Protecting overwintering sites along the California coast is a critical step in recovering the monarch population. These coastal areas provide key habitat that is important for the completion of the monarch life cycle. The Xerces Society has identified 50 of the most critical overwintering sites along the California Coast (Pelton et al. 2016). These sites were identified by evaluating the percent decline over a 15 year period and the proportion of the population remaining at the site. Therefore these identified key areas have experienced the greatest decline but still contain a significant proportion of the remaining wintering population. We are in strong support of designating and protecting all of these top 50 locations identified by the Xerces Society (Pelton et al. 2016) as critical habitat as defined under the ESA.

Data is currently lacking on the key breeding areas and critical spring/summer habitat throughout the west. It is important to work to identify these key areas, as well as the primary migratory pathways, and designate these locations as critical habitat under the ESA.

Possible Impacts on Critical Habitat

Wildfire is a significant threat to critical habitat as much of the proposed locations, as is typical of overwintering habitat in California, are eucalyptus groves which are highly flammable. We recommend incentives to allow land managers to conduct fuels reduction work in these groves and encourage the planting of replacement trees in the understory, or surrounding areas, with native trees that have greater wildfire resiliency.

Efforts should be focused on improving fall-flowering nectar plants along these migration corridors (Oregon I-5 Corridor, I-97 corridor, and rivers) and shifting the timing of roadside mowing during critical periods. Areas throughout Oregon where monarch butterflies historically occurred, but are now in need of habitat restoration to provide suitable habitat, include the Columbia Plateau, Snake River Basin, and riparian areas across the state (Pelton et al. 2019).

In Summary

Thank you for the opportunity to provide comments on the proposed listing of the monarch butterfly and designation of critical habitat. We appreciate consideration of these comments in support of listing the monarch butterfly as threatened, but request consideration of endangered status, and encourage the addition of additional overwintering, nectaring, and migration corridors as critical habitat.

Please direct questions or requests for additional information to The Wildlife Society Western Section Conservation Affairs Committee at conservation@tws-west.org.

Sincerely,

Western Section and Oregon Chapter
The Wildlife Society
Conservation Affairs Committees

Citations

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