FLORIDA NATIVE PLANT SOCIETY
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P.O. Box 278
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Florida Native Plant Society Position on Monarchs and Milkweeds

This policy statement was prepared by the Florida Native Plant Society's Science Committee and is endorsed by the Florida Wildflower Foundation and the Florida Association of Native Nurseries.

The Florida Native Plant Society (FNPS) supports the conservation of native plants and native plant communities. FNPS makes decisions and policy recommendations on the best available scientific information. Recommendations may change with time and circumstances as new information becomes available.

Native insects, including pollinators, are critical components of native ecosystems. It is widely recognized that insect populations are in decline. The monarch butterfly (*Danaus plexippus*) is a charismatic insect, whose unique migration attracts much attention.

Recently, a controversy regarding monarch butterflies and milkweeds in Florida has raised concerns. Claims that native milkweeds planted in yards and gardens or even those growing in natural areas are damaging to monarch populations are not consistent with current scientific consensus. This discussion has occurred primarily in social media, but consideration of published scientific literature is needed to frame FNPS recommendations.

Populations of monarch butterflies in their winter roosting sites have been declining for some time (Boyle et al. 2019, Pelton et al. 2019). Summer populations from 1993 to 2018 (Crossley et al. 2022) appear more stable, but there are various threats to the population. Threats include habitat loss, pesticides, herbicide impacts to milkweed populations, and

climate change. Concern over the decline in monarch populations has led to increased monitoring and research, increased cultivation of its host plants (*Asclepias* spp., milkweed), and captive rearing by some.

One of the threats to monarchs is the protozoan parasite *Ophryocystis elektroscirrha* (OE). Spores of this parasite are ingested by caterpillars feeding on milkweeds and passed to the adult butterflies. Females laying eggs on milkweeds deposit it on the plant continuing the cycle. Although this parasite is naturally occurring, its prevalence has increased in recent years (Majewska et al. 2022). Infection can weaken and kill individuals, but many still reproduce. In temperate areas, winter breaks this cycle as monarchs migrate and milkweeds go dormant.

Planting of tropical milkweed (*Asclepias curassavica*) in Florida and elsewhere in the Southeast has provided monarchs a year-round food source in some areas, allowing non-migratory populations to occur where not previously possible. Unfortunately, this leads to a high prevalence of OE infection (Satterfield et al. 2015). Tropical milkweed also escapes from cultivation and is now widespread in Florida (Wunderlin et al.2024). Tropical milkweed is in the nursery trade and is not listed by the Florida Invasive Species Council (www. floridainvasivespecies.org). It is likely to remain available in the near term.

FNPS recommends that tropical milkweed not be planted and that it be removed from gardens and yards where it occurs. Land managers of natural areas are encouraged to remove it from their sites.

Native milkweeds have been planted as an alternative to tropical milkweed in yards and gardens. Most native milkweeds are expected to become dormant in winter. An exception is swamp milkweed, *Asclepias perennis*, which may not senesce in North and Central Florida. There are no models or data that would justify the removal of native milkweeds from yards and gardens at this time. Homeowners and gardeners may want to include milkweeds native to their region with a variety of other native plants to provide resources for multiple species.

FNPS does not recommend removal of native milkweeds from gardens. FNPS recommends that native milkweeds may continue to be planted in their native ranges along with a variety of other native plants.

There are at least 21 native species of milkweed in Florida including two endemic species (*Asclepias curtissii* and *A. feayi*) (Wunderlin et al. 2024). The native milkweeds occur in upland and wetland habitats and have varying ranges (Wunderlin et al. 2024). Native milkweeds are important components of many native ecosystems supporting native pollinators and other species. There is no credible evidence that native milkweeds in native habitats pose an increased risk to monarchs.

FNPS does not recommend removal of native milkweeds from natural areas.

Continued monitoring of the health of monarch populations and the occurrence of OE is needed to improve understanding of this situation. Citizen science is an important component of this effort. Project Monarch Health (www.monarchparasites.org) provides information on how to take part in this effort.

Concerned individuals may want to assist in the monitoring of OE occurrence as part of Project Monarch Health.

FNPS will follow research developments in this area and may revise recommendations based on future findings.

References

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Satterfield, D.A., J.C. Maerz, and S. Altizer. 2015. Loss of migratory behavior increases infection risk for a butterfly. Proceedings of the Royal Society B 282: 20141734.

Wunderlin, R. P., B. F. Hansen, A. R. Franck, and F. B. Essig. 2024. Atlas of Florida Plants (http://florida.plantatlas.usf.edu/). [S. M. Landry and K. N. Campbell (application development), USF Water Institute.] Institute for Systematic Botany, University of South Florida, Tampa.

The section below addresses some questions that are frequently raised.

How credible is the research?

Dr. Davis is a professor at the University of Georgia and is author or co-author of peer-reviewed scientific papers including papers on monarch butterfly (*Danaus plexippus*) populations and the effects of *Ophryocystis elektroscirrha* (OE) infection. However, we need to distinguish between what is established in peer-reviewed literature and what goes beyond that.

OE is a serious parasite of monarchs. It kills some and weakens others. This is well established.

OE is prevalent in Florida monarchs. Data from the Project Monarch Health (www.monarchparasites.org), a citizen-science project centered at the University of Georgia Odum School of Ecology indicates that OE is prevalent in Florida monarchs,

particularly in and around urban areas. A limitation of these data is that urban areas are where most of the observers/observations are also.

Non-migratory populations of monarchs frequently have high prevalence of OE (Satterfield et al. 2015); in Florida and some other areas of the Southeast Coastal Plain cultivation of tropical milkweed (*Asclepias curassavica*) supports non-migratory monarchs. The lack of dormancy in this species allows OE to persist on the plants and to be transmitted back and forth between plants and monarchs.

In extreme south Florida some native milkweeds may not become dormant. There is a resident non-migratory monarch population there which may be using tropical milkweed and native species. Climatic warming and particularly reduction in occurrence of frost and freezing temperatures may affect the phenology of some milkweeds, extending their growing season. We do not know of any assessment of that currently. One of the native Florida milkweeds, *Asclepias perennis*, swamp milkweed, may not senesce in its Central and North Florida range. Such plants may be used by non-migratory monarchs, but the significance of this is not currently known.

Migration reduces OE infection as the parasite weakens infected individuals who do not survive the migration (migratory culling) (Majewska et al. 2022).

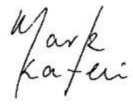
Should Native Planted Milkweeds be Removed or Not Planted?

At this point, Dr. Davis appears to be the only one advocating removal of native milkweeds from gardens and advocating against planting them. This advice seems to go well beyond available data. The OE parasite will persist on native milkweeds and monarch larvae can ingest it and become infected. If the plant dies back in fall, then the infection cycle is broken. There are no data or models at this point showing that cultivated native milkweeds are adding significantly to OE infection. The web sites for the Odum School of Ecology and Project Monarch Health do not currently have such recommendations to not plant or remove native milkweeds.

Are Native Milkweeds in Native Habitats a Risk to Monarchs?

There are at least 21 native species of milkweed in Florida and one introduced species (*Asclepias curassavica*). The native milkweeds occur in upland and wetland habitats and have varying ranges (Wunderlin et al. 2024). Among the native milkweeds are two species endemic to Florida (*Asclepias curtissii* and *A. feayi*). Native milkweeds are important components of many native ecosystems supporting native pollinators and other species. There is no credible evidence that native milkweeds in native habitats pose an increased risk to monarchs.

Sincerely,



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