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Nevada Native Plant Society

R. Tietje

Society News

Northern Nevada Events

Feburary 7 – Dominic Gentilcore will talk about the botany of Gold Butte National Monument.

March 7 – We are still planning this meeting, but we may hear from **Shannon Swim** about the Sagebrush in Prisons program or **Greg Gust** about collecting in the Basin and Range National Monument.

Meetings are held in room 300G of the Fleischmann Agriculture Building on the UNR campus, north of 9th Street and Evans Avenue. Enter the building under the breezeway on the west side near the street. There's an elevator at the east end of the building. Meet on the third floor and down the hall from the **UNR herbarium**.

Social time at 7:00 PM; program at 7:30. The outside doors are locked at 7:30.

Southern Nevada Events

February 4 – Jeanette Perry, botanist with Ecological & Environmental Monitoring at the Nevada National Security Site will discuss the status of sensitive plant species on the site.

Our program coordinator is Lesley DeFalco. Contact her at **defalco@usgs.gov** to receive email updates for Southern Nevada events.

2019 NNPS Wildflower Calendar

This beautiful calendar features the winning photos from our 2018 Nevada Native Plant Society photo contest. Buy it at our online store (**https://nvnps.org/_catalog**). Only $10 for members.

Margaret Williams Research Grants

The deadline for the 2019 Margaret Williams Research Grant is February 1st. See **https://nvnps.org/grants** for more information.

Newsletter submissions – Please submit photos, essays, tales of your botany field trips, plant-related book reviews, or any other material that would be of interest to members to **newsletters@nvnps.org**.

Events subject to change.
Visit nvnps.org for updates.

Western Monarch Numbers Expected to Be Low this Year

Story and photos by Stephanie McKnight

Over the last three years, I have been lucky enough to do field research to better understand more precisely when and where monarch butterflies breed in the western states. Answering this question is critical to developing a meaningful conservation strategy for the western monarch population. My first season working with monarchs was in 2016, in Nevada. As a biologist with a background in botany, I admittedly knew very little about monarch biology or their life history when I started, but I was immediately intrigued by the diversity of milkweed species that monarch butterflies

can use as host plants in the West – **44 species to be exact**. Of the 44 species, roughly half inhabit very arid desert habitats, with the greatest milkweed diversity occurring in Arizona. Incredibly, monarch butterflies have been documented using over half of these arid species, and that number will likely continue to grow as more surveys are conducted and our understanding of their habits increases.

My favorite of the desert milkweeds is pallid milkweed (*A. cryptoceras*), which inhabits steep, barren slopes in the Great Basin. Not only does this plant somehow survive in one of the driest and most exposed habitat types, but monarch butterflies also manage to find and use it as a larval host. Even as a trained botanist who has spent countless hours scouring challenging habitats for rare plants, finding some of these rare desert milkweeds proved to be fairly difficult—and yet this fragile-looking, brilliant-orange butterfly could fly through the desert and find 15 isolated milkweed plants on a barren hillside! The moment that I realized this was when I became fully enamored with the monarch butterfly.

That first season (2016), my goal was to document where monarchs were breeding in the Great Basin, in order to fill a major data-gap in our knowledge of western monarchs and inform the development of a set of Best Management Practices for monarchs in the West. I found monarch butterfly eggs, larvae, or adults at approximately 80 percent of the milkweed populations I surveyed in the Great Basin. To my surprise, it was relatively easy to find monarchs in the Great Basin: find milkweed, find monarchs.

In 2017, I started field work in support of a different research project with Cheryl Schultz at Washington State University-Vancouver and other partners titled "Western Monarch Breeding Phenology: Implications for Management" (a project supported by the Department of Defense Legacy Fund). This research project is investigating monarch breeding phenology (when and where they breed) in California, Idaho, Oregon, Nevada, and Washington to better inform land management for monarch butterflies. Finding monarch butterflies across these states in 2017 continued to be relatively easy: find milkweed, find monarchs.

However, the second year of fieldwork on this project has been very different. In 2018, monarchs arrived almost a month late to

◂ Monarch flying over showy milkweed (*Asclepias speciosa*), Oregon.

▸ *Monarch larvae on showy milkweed (A. speciosa) in the Great Basin.*

most breeding areas. They didn't even make it at all to some areas of the northernmost breeding range (Washington state), and they were much harder to find in areas where they are normally abundant. At various research sites, the number of immature monarchs (eggs, larvae, pupae) was substantially lower than the previous year. This downturn in numbers was not only documented by the research project I am working on; it was also noticed by citizen scientists, land managers, and other researchers across the West. One researcher, Art Shapiro, **detected the lowest number of monarch butterflies in central California in 46 years**. The consensus amongst all groups of monarch enthusiasts—researchers, citizen scientists, and land managers—is that numbers in 2018 were much lower than normal. Found milkweed, but no monarchs.

While it is hard to pinpoint the exact cause of this year's very low monarch numbers, this is part of a much longer and more disturbing trend. Due to multiple factors such as habitat loss, pesticides, and climate change, monarchs in the West have declined by **97 percent** since the 1980s. And we know this because researchers used citizen science data from Xerces' **Western Monarch Thanksgiving Count** (WMTC), an annual count of monarch butterflies at their overwintering sites during a three week window centered around the Thanksgiving holiday. This year, based on monarch breeding observations from the field and early overwintering observations, researchers, biologists, and citizen scientists are concerned that the annual WMTC count may be very low.

You may be asking, "What can I do to help the monarch?" Besides protecting habitat, avoiding pesticide use, and planting gardens, another way is to contribute monarch and milkweed data to Xerces-led citizen science efforts—namely, the Western Monarch Thanksgiving Count and the **Western Monarch Milkweed Mapper**.

If you live in or near coastal California, you can join the Western Monarch Thanksgiving Count to help estimate monarch populations at their overwintering sites. This year, the 2018 WMTC started on Saturday, November 10, and runs through Sunday, December 2. We are also looking for volunteers to participate in the Western Monarch New Year's Count. This second count will provide additional information on how overwintering monarchs are using these sites and for how long. The New Year's Count starts on Saturday, December 29, and runs through Sunday January 13. To learn more about these counts, and to and sign up, visit the **Western Monarch Count Resource Center**.

◂◂ Pallid milkweed (*A.cryptoceras*).

◂ Monarch pupae on showy milkweed (*A. speciosa*), Nevada.

▸ Monarch nectaring on swamp milkweed (*A. incarnata*), Idaho.

If you live anywhere in the West, you can contribute data to the Western Monarch Milkweed Mapper. All you need is a photograph of a monarch (adult, egg, larva, pupa), and/or a milkweed, the precise location, and the date of the observation. Providing this straightforward information can have a big impact on our understanding of the distribution of milkweed, monarchs, or both.

Every observation of monarch butterflies helps us to better understand when and what habitat types monarchs are using for breeding and migration. We still know very little about important migratory pathways, roost trees and shrubs (otherwise known as aggregation stopover sites), and **nectar resources** used by monarchs both during migration and at their overwintering sites along the coast. By contributing your observations, you can assist with our understanding of this beloved butterfly species, and that information can ultimately help guide conservation efforts to preserve these stunning migrations for future generations.

***Stephanie McKnight** is an endangered species conservation biologist for the Xerces Society for Invertebrate Conservation.*

This article first appeared on the Xerces Society's blog (xerces.org/blog), and is reprinted with permission.

*The **Xerces Society** is a nonprofit organization that protects wildlife through the conservation of invertebrates and their habitat. The Society is a trusted source for science-based information and advice, and collaborates with people and institutions at all levels to protect pollinators in all landscapes. Their team draws together experts from the fields of habitat restoration, entomology, botany, and conservation biology with a single passion: protecting the life that sustains us.*

Nevada Native Plant Society
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