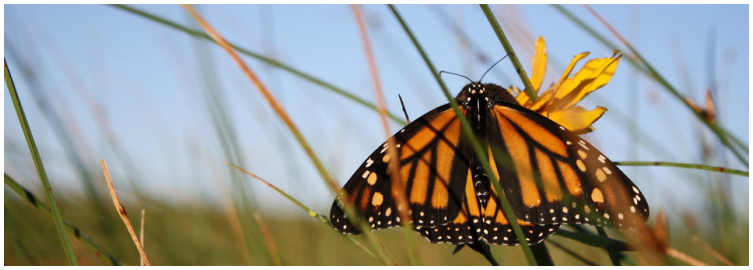
# Restoring Habitat for Monarchs in Marin

By creating habitat for Monarchs using locally native nectar plants, gardeners can improve habitat for other species of butterflies and all other native insects, which form the base of the food chain upon which all wildlife depend.



The beloved Monarch butterfly (*Danaus plexippus*) is experiencing a rapid population decline. In California alone, there were nearly 4.5 million Monarchs just 30 years ago. During the most recent Monarch count this past January the western population of Monarchs was estimated to be 28,429 individuals. Many factors have contributed to the decline, including use of pesticides and herbicides, increased wildfires, loss of habitat and habitat fragmentation, and loss of milkweed (*Asclepias species*), which is necessary to Monarchs for reproduction. There is no fast and easy way to restore the population of Monarchs, but there are ways to help this iconic species survive.

Monarchs go through four life cycle stages: egg, caterpillar, chrysalis, and butterfly, and are famous for their long annual migration. Adult butterflies arrive at the coast in the fall and stay at overwintering sites on the coast where temperatures are warmer through winter. During this time the butterflies need to conserve their energy and are in a period of reproductive diapause. They use environmental cues, such as increased daylight time and warmer temperatures, to know when it is time to leave their overwintering grounds.

The Marin population typically mate and disperse in February. The females fly off in search of milkweed, the only host plant on which Monarchs can lay their eggs. Successive generations continue to travel east throughout the spring and summer. The butterflies that return to the coast in the fall are the third or fourth generation descendants of the prior year's overwintering population.

**If you live in Marin, the best way to help is to restore habitat by adding native nectar plants that support the adult Monarchs that arrive in the fall and overwinter on the coast near Bolinas and Muir Beach.** Recent research indicates that it is not helpful to add milkweed within five miles of the coast, as having milkweed near overwintering grounds disrupts the period of reproductive diapause. During warm days in the winter Monarchs fly to nectar sources and hydrate, so it is especially important to increase viable sources of nectar near overwintering grounds. Please refer to the back side of this handout for nectar plants native to Marin.

## HOW YOU CAN HELP

**If you live within 5 miles of the coast:**

- Plant native nectar plants, particularly those that bloom late fall, winter, and early spring
- Do not add milkweed, and if your garden already contains milkweed cut it to the ground in October

**If you live in inland areas:**

- Plant native nectar plants
- Plant the locally native milkweed, Narrowleaf milkweed (*Asclepias fascicularis*)

To best support overwintering Monarchs, please utilize the map to determine whether you live in an inland area or a coastal area. If you live more than five miles from the coast, it's helpful to add the locally native species of milkweed, narrowleaf milkweed (*Asclepias fascicularis*), for adults that may be in Marin during their reproductive time. Please do not plant tropical milkweed (*Asclepias curassavica*) as this species commonly hosts a protozoan parasite that infects Monarchs. Narrowleaf milkweed grows best in wet areas such as swales and ditches. Milkweed is toxic to livestock. These same tips can be applied to places outside of Marin by using plants native to your area.


For additional information about habitat restoration in Marin, please contact Audrey Fusco, SPAWN's native plant nursery manager, at **audrey@seaturtles.org**. For more ways to help save Western Monarchs visit the Xerces website at www.savewesternmonarchs.org.

# General List of Nectar Plants for Monarchs

The following list of locally native, fall and spring blooming plants are known to be nectar sources favored by Monarchs. Monarchs prefer large nectar-rich clusters of flowers, particularly those in the aster (Asteraceae) and mint (Lamiaceae) families. Please choose the nectar plants that are most appropriate for your plant community. There is a knowledge gap as to which plants Monarchs utilize for nectar during the winter. If you live in a coastal zone and observe Monarchs nectaring on native plants, please write to **audrey@seaturtles.org** and let us know which plants they use!

## COASTAL & INLAND

| Season | Common name | Scientific Name | Bloom time |
|---|---|---|---|
| Fall | Saltmarsh baccharis | *Baccharis glutinosa* | June - October |
| | Coyote brush | *Baccharis pilularis* | September - November |
| | California fuchsia | *Epilobium canum* | August - October |
| | Narrow-leaf buckwheat | *Eriogonum fasciculatum* | April - September |
| | Grass-leaved goldenrod | *Euthamia occidentalis* | August - October |
| | Common gumplant | *Grindelia camporum* | April - October |
| | Hairy gumplant | *Grindelia hirsutula* | April - October |
| | Coyote mint | *Monardella villosa* | June - October |
| | West coast goldenrod | *Solidago elongata* | August - September |
| | Goldenrod | *Solidago velutina* | August - October |
| | California aster | *Symphyotrichum chilense* | July - October |
| | Western vervain | *Verbena lasiostachys* | April - September |
| Spring/Summer | Manzanita | *Arctostaphylos sp.* | February - June |
| | Blueblossom | *Ceanothus thyrsiflorus* | March - June |
| | Western thistle | *Cirsium occidentale* | April - July |
| | Bluedicks | *Dichelostemma capitatum* | February - April |
| | Wild hyacinth | *Dichelostemma congestum* | February - April |
| | Canyon gooseberry | *Ribes menziesii* | January - March |
| | Pink-flowering currant | *Ribes sanguineum* | January - March |
| | Narrow-leaf mule ears | *Wyethia angustifolia* | March - July |
| | Smooth mule-ears | *Wyethia glabra* | March - July |

## COASTAL ONLY

| | | | |
|---|---|---|---|
| Fall | Yellow sand verbena | *Abronia latifolia* | March - October |
| | California goldenbush | *Ericameria ericoides* | August - October |
| | Pacific gumplant | *Grindelia stricta* | May - October |
| | Dune goldenrod | *Solidago spathulata* | May - November |
| Spring/Summer | 'Pt. Reyes' Manzanita | *Arctostaphylos uva-ursi* | March - June |
| | Seaside daisy | *Erigeron glaucus* | February - July |
| | Spreading gooseberry | *Ribes divaricatum* | March - May |

## INLAND ONLY

| | | | |
|---|---|---|---|
| | Calif. narrow-leaf milkweed | *Asclepias fascicularis* | July - September |
| | Hillside gooseberry | *Ribes californicum* | January - March |

*Text by Audrey Fusco, with special thanks to Skylar Lipman, Rebekah Staub, Mia Monroe, and Charlotte Torgovitsky for contributions; map by Skylar Lipman.*

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