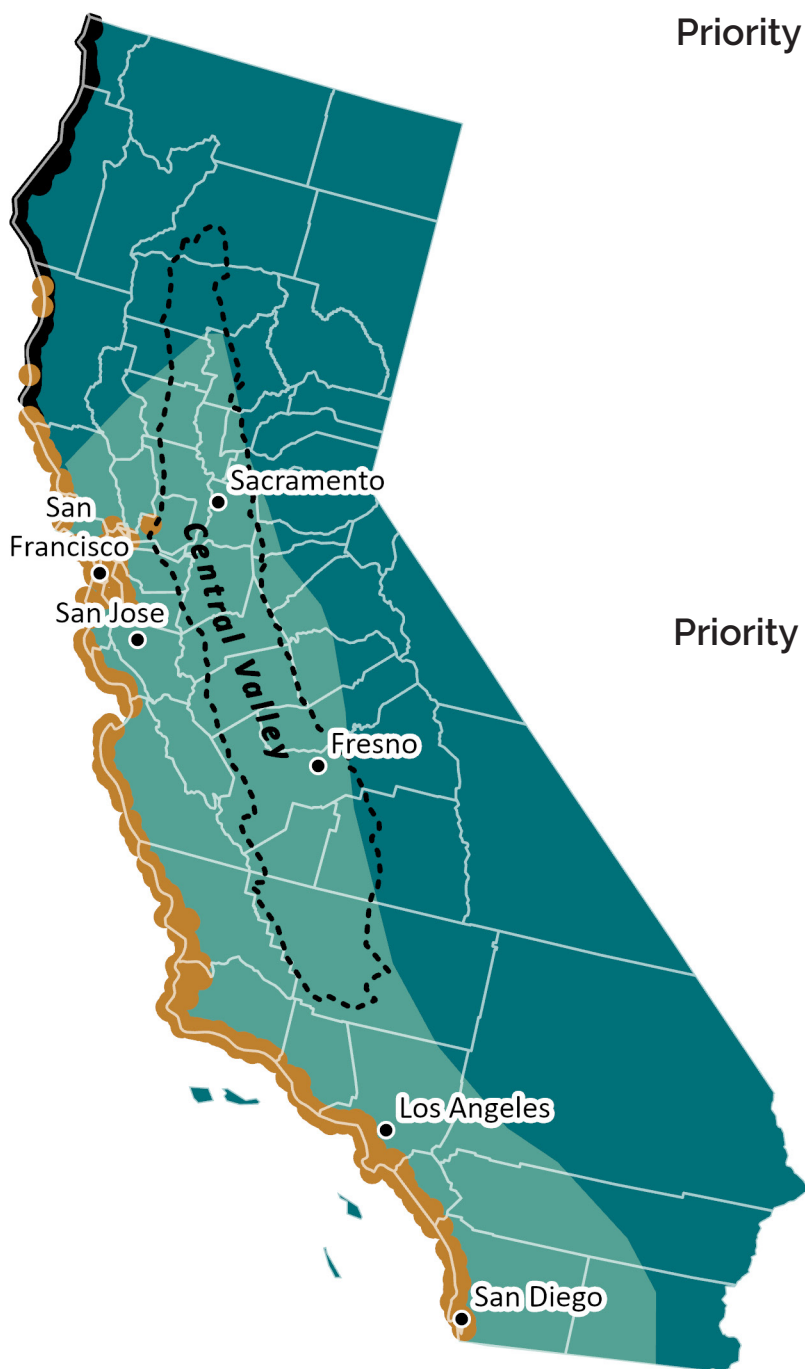





Priority Action Zones in California for Recovering Western Monarchs



Priority #1

-  **Coastal areas where monarchs overwinter:** Protect and restore overwintering habitat and plant pesticide-free native nectar plants. *Avoid planting milkweed at or near overwintering sites.* (See “Where to Plant Milkweed” on back.)
-  **Early breeding zone:** Protect and plant pesticide-free early season native milkweed and nectar plants.

Priority #2

-  **North coast areas where monarchs do not overwinter:** Plant pesticide-free native nectar plants.
-  **Summer breeding zone:** Identify and protect existing native milkweed and nectar plants. Plant pesticide-free native milkweed and nectar plants.
-  County boundaries



Priority Restoration Zones in California for Recovering Western Monarchs

The migratory western monarch population is 95% below its numbers in the 1980s. Working to improve monarch habitat in California is more important than ever. Two of the highest priority actions that can be taken are:

- ⇒ Protecting and restoring overwintering sites (found in the brown color zone on the map) and
- ⇒ Protecting and planting pesticide-free early season milkweed and nectar plants in the early season breeding zone, the region where the first generation of monarchs go after leaving overwintering sites (shown in light teal color on the map).

Methods

The Priority 1 early breeding zone was defined by monarch breeding records reported to the Western Monarch Milkweed Mapper (monarchmilkweedmapper.org) between February and April of 2019 and 2020, when the population was at a historic low. This helped to identify the region where the first generation of monarchs leaving overwintering sites is breeding in the late winter and early spring, the period during which research indicates that western monarchs are most vulnerable.

Milkweed Species Selection

Early season milkweed species include California (*Asclepias californica*), heartleaf (*A. cordifolia*), desert (*A. erosa*), and woolly (*A. vestita*) milkweeds. Early season milkweeds emerge between January and March and are thought to be especially important breeding locations for monarch reproduction during the first monarch generation. This is why this restoration of early season milkweed species is one of the core actions in the Priority 1 Zone. To see where these milkweeds occur and to determine where to plant them, consult the milkweed range maps available at:

- ⇒ CalFlora (calflora.org) and Calscape (calscape.org/loc-California/Asclepias), or
- ⇒ Xerces Society's "Milkweeds of California" fact sheet, xerces.org/publications/fact-sheets/roadside-habitat-for-monarchs-milkweeds-of-california.

Widely distributed native milkweeds include showy (*A. speciosa*), narrowleaf (*A. fascicularis*), and woollypod (*A. eriocarpa*) milkweeds. These species are broadly appropriate for restoration and their plant materials are more commonly available. Explore species accounts on the Western Monarch Milkweed Mapper here: monarchmilkweedmapper.org/app/#/taxon/list.

Avoid planting tropical milkweed (*A. curassavica*). Non-native tropical milkweed remains evergreen through the winter in mild climates and allows for the monarch disease *Ophryocystis elektroscirrha* (or OE, for short) to build up on the plant over time. OE reduces reproductive success and overall fitness of monarchs. Tropical milkweed may also interfere with monarch migration and reproduction.

Where to Plant Milkweed

Plant milkweed in its native range

We recommend planting milkweed species in their natural range, following nature's patterns as the best example. Using locally sourced plant materials helps ensure that the plants are well-adapted to the climate of the planting location and do not introduce novel, potentially deleterious genes into the local population. Visit Calscape's *Asclepias* ranges, which provide detailed maps and the option to search for native plants by address: [calscape.org/loc-california/Asclepias\(all\)](http://calscape.org/loc-california/Asclepias(all)).

Near an overwintering site?

Following a precautionary approach, we discourage the planting of milkweeds at or immediately adjacent to overwintering sites due to their potential to interfere with monarch behavior. To see details of known overwintering site locations, visit westernmonarchcount.org/map-of-overwintering-sites/ (enter your address in the search box). If you prefer a simple rule of thumb, only plant milkweed more than 1 mile away from an overwintering site. Instead of milkweed, plant nectar plants that provide blooms in the fall, winter, and spring while monarchs are at overwintering sites and in need of nectar to help them survive.

Additional Resources

- ⇒ **To find local milkweed seeds or plant materials**, consult the Xerces Society's Milkweed Finder (xerces.org/milkweed/milkweed-seed-finder).
- ⇒ **To determine what nectar plants to protect and plant**, consult this list of Monarch Nectar Plants for California (xerces.org/publications/plant-lists/monarch-nectar-plants-california).
- ⇒ **To identify existing monarch breeding habitat** that should be protected, find milkweed and monarch records using the Western Monarch Milkweed Mapper (monarchmilkweedmapper.org), an online community-science database of monarch and milkweed records in the western United States.
- ⇒ **To determine what time of year to implement management actions** such as mowing, burning, or grazing and when such actions will be least likely to impact monarchs, consult this guide to Timing Management in Monarch Breeding Habitat (xerces.org/publications/guidelines/timing-management-in-monarch-breeding-habitat).
- ⇒ **To identify existing overwintering habitat**, consult the map on the Western Monarch Count website (westernmonarchcount.org/find-an-overwintering-site-near-you/).