



MONARCH JOINT VENTURE

Partnering across the U.S. to conserve the monarch migration

www.monarchjointventure.org

Western Monarch Conservation: How to Get Involved

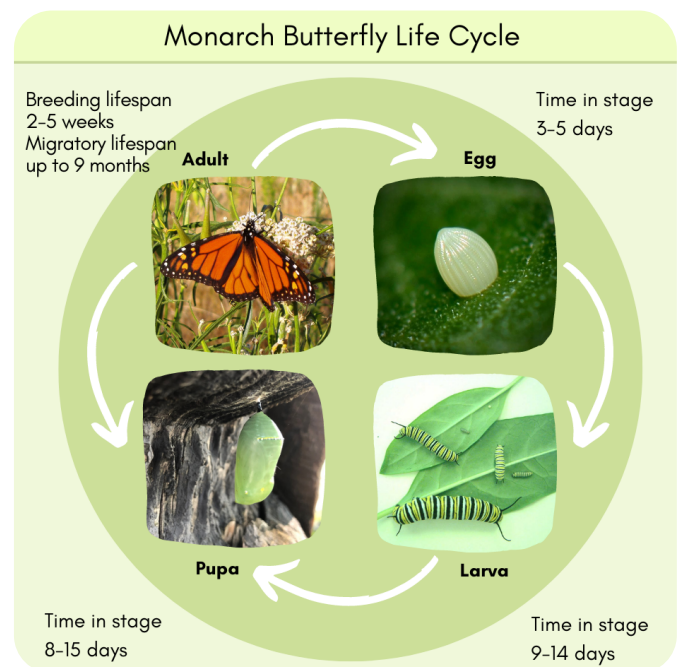
West of the Rocky Mountains, monarch butterfly populations have reached a precarious new low. As a result, conservation efforts have accelerated and everyone can lend a hand. The Monarch Joint Venture coordinates a partnership of more than 120 government agencies, community organizations, academic programs, and businesses working together with engaged individuals to protect monarchs and healthy pollinator ecosystems. Join us! Learn how to get involved at www.monarchjointventure.org.

Why is Monarch Conservation Important?

Monarchs thrive in diverse native habitats, which also support organisms across the food web, including humans. Creating habitat for monarchs helps pollinators, other wildlife, and people thrive. The western monarch population has declined more than 95% over the last 40 years. Much more work is needed to maintain a sustainable western migration. See the MJV blog for current population trends: www.monarchjointventure.org/blog.

Western Migration Cycle

Adult monarchs leave overwintering sites along the California coast in February and March, heading inland in search of milkweed for their eggs. Once first-generation monarchs reach adulthood, they disperse east across the Central Valley and north across the western states. Second- and third-generation monarchs live, reproduce, and die throughout the summer, and the fourth generation emerges in early fall. This migratory generation lives 6-9 months, compared to the 2-5 weeks of earlier generations. Migratory monarchs differ biologically from non-migratory generations; they are in a state of reproductive diapause, meaning their reproductive organs do not mature until later in the adult stage (after winter). Instead of looking for milkweed, fourth-generation monarchs require nectar as they migrate south and west to the overwintering sites along the California coast, arriving around late October. Once there, they roost for the winter in trees, sometimes in aggregations of thousands of individuals. Research shows that a small number of western monarchs also overwinter in Mexico. In February and March, reproductive diapause ends and the annual cycle starts anew.



Western Monarch Habitat

Most western monarch overwintering sites are located within a few miles of the California coast between Sonoma and San Diego counties. Monarchs roost in specific eucalyptus, Monterey pine, and Monterey cypress groves, which are at risk due to human development and other factors; protecting the sites and managing them sustainably are monarch conservation priorities. While breeding, monarchs require milkweed and nectar sources. Milkweeds (*Asclepias* genus) are the only host plants for monarch eggs, and the only food for monarch caterpillars. Flowering plants provide nectar that sustains adult monarchs. When choosing plants for monarch habitat, include a mix of native plants that bloom from early spring through late fall. Get started at www.plantmilkweed.org.



Native Milkweeds of the West

Common milkweeds native to the West include narrowleaf milkweed (*Asclepias fascicularis*), showy milkweed (*A. speciosa*), woollypod milkweed (*A. eriocarpa*), and heartleaf milkweed (*A. cordifolia*). In California, *A. californica*, *A. subulata*, and *A. erosa* are also important host plants. Be sure to check which milkweed and nectar plants are native to your region. North of Santa Barbara, avoid planting milkweeds within 5-10 miles of coastal monarch overwintering sites. Instead, plant plenty of native flowering plants, especially those that bloom in early spring. More info at www.monarchjointventure.org/resources/downloads-and-links.



Monarch butterfly on narrowleaf milkweed (*Asclepias fascicularis*)

Risks of Tropical Milkweed

Tropical milkweed (*Asclepias curassavica*) is not native to the U.S. or Canada. Unlike native milkweeds, tropical milkweed doesn't die back during winter, and in parts of the southern U.S. and California, the year-round persistence of tropical milkweed allows monarchs to breed throughout the winter. Year-round breeding fosters greater transmission of the protozoan *Ophryocystis elektroscirrha* (OE), increasing the number of infected monarchs (Satterfield 2016). Because of this risk, we strongly discourage cultivating tropical milkweed. If it's already part of your landscaping, work to replace it with native milkweeds, and cut it back regularly to reduce parasite transmission.

Threats to Western Monarchs

- **Habitat loss** due to human development and agricultural development is a primary driver of western monarch population declines.
- **Climate change** can disrupt the environmental cues like temperature that tell monarchs when to reproduce, migrate, and overwinter. Increasingly severe weather events like drought, winter storms, and wildfires also can affect monarchs.
- **Residential and commercial pesticide use** can cause unintended harm on beneficial plants and insects, like monarchs.
- **Non-native plant species** such as tropical milkweed can increase the spread of the parasite OE, which has negative effects on survival and migration.

What Can I Do to Help?

- **Plant, protect, and enhance monarch habitat** and identify areas that could be transformed into new habitats, like lawns. Visit www.plantmilkweed.org for resources.
- **Advance monarch research by participating in community science.** This pushes monarch conservation forward. Visit www.monarchjointventure.org for a directory of monarch community science programs.
- **Support monarch conservation organizations.** Volunteer, sign up for a program, or donate.
- **Join the Western Monarch Population Count.** This count is an annual community science program coordinated by The Xerces Society, in which trained volunteers count individual overwintering monarchs. These population data help guide conservation efforts. www.westernmonarchcount.org.
- **Educate others.** Spread the word about monarch conservation.



A Permit is Required to Handle Monarchs in California

As a result of drastic monarch population decline, the California Department of Fish & Wildlife now requires a scientific collection permit to handle any monarch. In California, it's unlawful to take possession of live monarchs, breed and rear them in captivity, or conduct other interventions including tagging, covering eggs, larvae, and adult butterflies with nets, and transporting monarchs without a permit.