Photo: Monarch Watch

Monarchs at Risk?

Each fall millions of monarch butterflies migrate to overwintering sites in Mexico and to a scattering of locations along the coast of California. In the spring monarchs return to breeding areas and the cycle starts again: a two-way migration that is one of the most spectacular on the planet. Yet, this migration appears to be declining. Researchers are working to determine the causes of this decline; some theories include:

- **Loss of milkweed** needed for monarch caterpillars to grow and develop, due to habitat conversion and adverse land management
- **Drought conditions** in California and other areas in the western U.S., resulting in lower milkweed biomass, and reduced availability of milkweed late in the summer
- **Insecticide and herbicide use** to control insects and weeds, with unintended consequences for monarchs
- **Overwintering habitat loss** and degradation in California, due to development within and adjacent to overwintering groves, and decay of overwintering trees as they age
- **Habitat loss** in overwintering sites in Mexico, due to illegal logging

The **North American Pollinator Protection Campaign (NAPPC)** is a collaborative body of over 140 organizations that work for the protection of pollinators across Mexico, Canada and the United States.
The **NAPPC Monarch Task Force** produced this brochure for your use and information. Feedback is welcome. For more information please contact **info@pollinator.org** or **415-362-1137** or visit **www.pollinator.org**.

FOREST SERVICE US DEPARTMENT OF AGRICULTURE

MONARCH JOINT VENTURE

North American Pollinator Protection Campaign

NAPPC

MONARCHS IN THE CLASSROOM

Monarch Watch.org
Education • Conservation • Research

POLLINATOR PARTNERSHIP

Photo: Eliya Selhub

Protecting Monarchs

What You Can Do to Support Monarch Butterflies

Prepared by the Monarch Task Force of the North American Pollinator Protection Campaign (NAPPC)

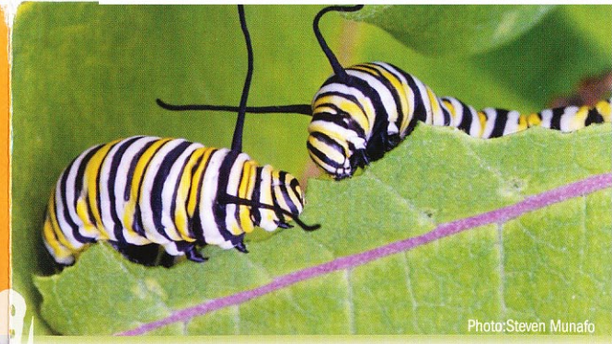
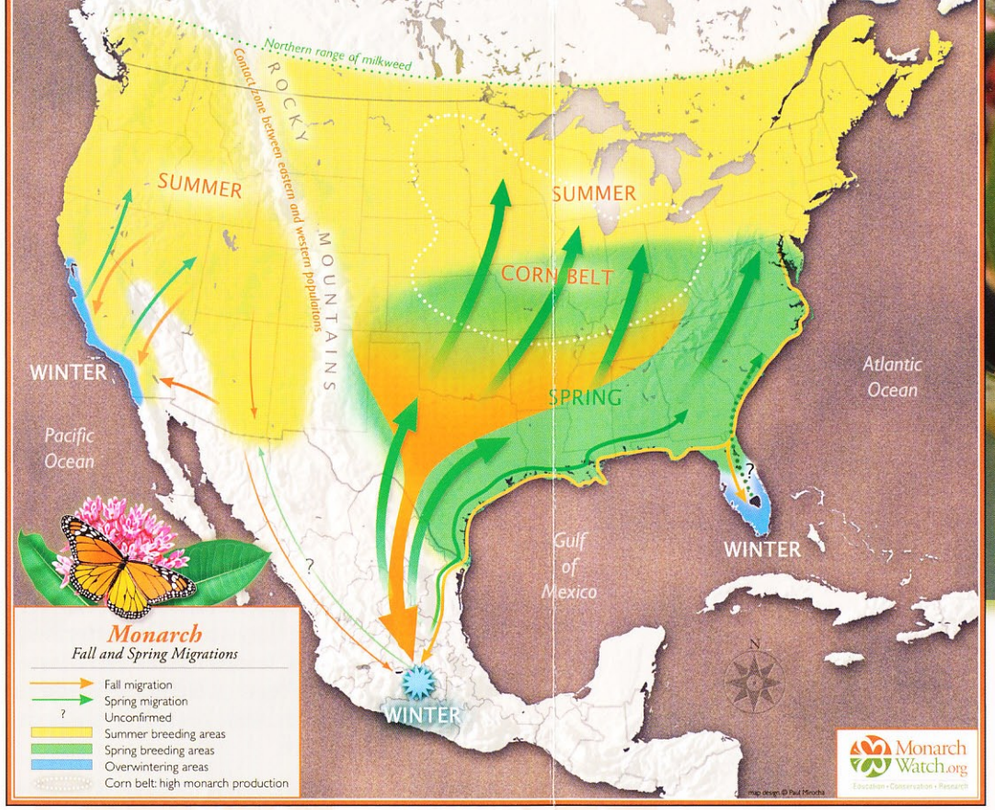


Photo:Steven Munafo

Monarch Facts

- Monarch caterpillars need milkweed plants (in the genus *Asclepias*) to grow and develop into butterflies. They eat and grow rapidly, increasing their weight almost 3,000 times in 10-15 days!
- Milkweed leaves contain toxins that monarch caterpillars accumulate in their bodies. By the time they are adult butterflies, this accumulation of toxins makes them taste quite unpleasant to many predators. Predators learn not to eat them, and this helps monarch butterflies to survive.
- The monarch migration is unique. Successful migrants can navigate more than 1,500 miles to a site unknown to them in the fall, live through an overwintering period of 5 months and then return north to reproduce in the spring for a total life span of 8-9 months.
- To accomplish their great fall migration, monarchs conserve energy during flight. Much like birds, they gain altitude by soaring in "thermals", or updrafts of warm air. Once at the top of each thermal they glide toward their destination. In this way, monarchs make their migration at an average pace of 25-30 miles per day, quite impressive for an insect the weight of a paperclip!
- Most monarchs joining the migration each fall are three or four generations removed from those that made the journey the previous year – yet somehow, they find the same groves of trees visited by their ancestors! How monarchs navigate to these forest groves remains an unsolved scientific mystery.



The Monarch Migration

There are **two populations of monarchs in North America**, one centered east of the Rocky Mountains and the other to the west, although there is probably some interchange between these populations across the Rocky Mountains and in Mexico. Butterflies from the eastern population overwinter in Mexico while those from the west overwinter at numerous sites along the California coast.

The **eastern migration** starts in March as butterflies from Mexico travel north into Texas and other southern states, breeding as they move northward. The butterflies produced in these areas move northward in May and June to colonize the northern states and Canada. Two or three additional generations are produced before the southward migration begins. Beginning in mid-August and continuing into fall, hundreds of millions of monarchs migrate south to spend the winter in high-elevation oyamel fir forests in central Mexico. Visit Monarch Watch (www.monarchwatch.org) and Journey North (www.learner.org/jnorth/monarch/) to track the fall migration and monitor the arrival of monarchs in the spring.

The **western monarch population** moves inland from the coast in the spring, breeding in scattered habitats containing milkweeds throughout much of the west but primarily in California. In November, western monarchs begin to return to forested overwintering sites along the California coast, from Baja to Mendocino County. Visit the Xerces Society (www.xerces.org/california-monarchs) to plan a visit to witness these beautiful clusters of overwintering monarchs.

Photo: Eliya Selhub

Photo: Laura Molenaar

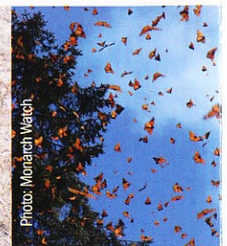


Photo: Monarch Watch

Photo: Monarch Watch

Resources on monarch biology, conservation, and citizen science opportunities:

- Monarch Joint Venture: **www.monarchjointventure.org**
- Monarch Larva Monitoring Project: **www.mlmp.org**
- Monarch Watch: **www.monarchwatch.org**
- US Forest Service: **www.fs.fed.us/monarchbutterfly/**
- The Xerces Society: **www.xerces.org/california-monarchs/**
- Journey North: **www.learner.org/jnorth/monarch/**
- Monarch Butterfly Fund: **www.monarchbutterflyfund.org**
- Pollinator Partnership: **www.pollinator.org/posters.htm**
- For a list of programs: **www.monarchnet.org**

What You Can Do: Help protect monarchs and their migration

Plant milkweed! Monarch caterpillars need milkweeds to grow and develop. There are over 100 milkweed species that are native to North America, many of which are used by monarchs. To learn which species to plant in your region, and how to plant them, visit the Bring Back the Monarchs Campaign at: www.monarchwatch.org/.

Plant butterfly nectar plants! Monarchs need nectar to provide energy as they breed, for their migratory journey, and to build reserves for the long winter. Include butterfly plants in your garden, and avoid using pesticides.

Encourage public land managers to create monarch habitat! Roadsides and parks of all sizes offer great opportunities to create habitat for monarchs and other pollinators.

Join citizen-science efforts to track monarch populations! The data collected by hundreds of citizen scientists across the country are used by monarch scientists to decipher monarch population trends, and to learn more about what might be driving their numbers from year to year.

Support monarch conservation efforts. There are a number of monarch conservation efforts underway doing very good work. Please consider donating to support these monarch conservation programs.

Photo: Mary Holland