

“Stars on the March”



The Monarch Butterfly

The Monarch butterfly (*Danaus plexippus*) is one of North America's most iconic insects. The gorgeous golden-brown and black butterfly is probably the most celebrated insect on the continent, and the migration of the eastern population is conspicuous and spectacular. Southbound Monarchs can appear anywhere, even in highly urbanized locals, and the butterflies often use backyard gardens as way stations. Occasionally a resting swarm of hundreds or even thousands of butterflies is encountered. Spectacle of trees dripping with living leaves of butterflies is unlikely to be forgotten.

The General Grand Chapter Community Service Committee is urging our members to learn about the decline in the population of the beautiful Monarchs and bring them back to our communities by planting the food they need to survive - the milkweed. Through a combined effort of our members throughout our jurisdictions, we can truly make a difference. This brochure is intended to inform you about their plight and how YOU can do your part. There are many informative websites where you can learn more, we just need to plant the seeds!

Milkweeds

Monarchs depend on milkweeds as host plants. The butterflies deposit eggs on milkweed plants, which then provide nutrition for the caterpillar phase of the butterfly's life cycle. Plant in the milkweed family contain poisons known as cardiac glycosides, which render them unpalatable to most insects. Monarch caterpillars, and a handful of other insects, have evolved the ability to assimilate milkweed toxins. As the caterpillars, and subsequently the butterflies, sequester these toxic compounds in their bodies, they become distasteful to many predators.

Mating

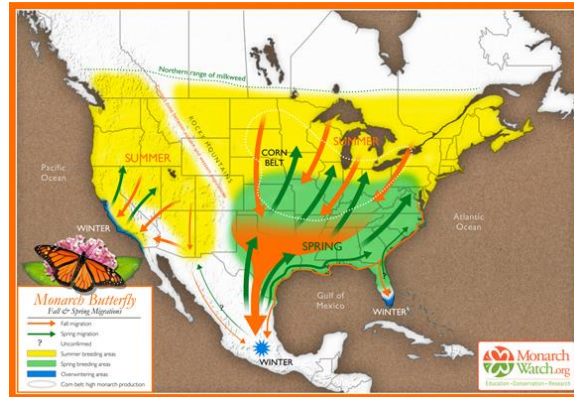
Adult Monarchs begin mating in the spring before they return to their summer range. Female Monarchs will generally lay one to as many as three eggs on the underside of milkweed leaves. She does this many times until she has laid hundreds of eggs. These eggs will hatch into larva, pupate, and become adults in the summer. These new adults will also mate. The new females will lay eggs as they fly northward. Monarchs do not mate until they are three to eight days old. When they mate they will remain together from one afternoon until early the next morning-often up to 16 hours. Females begin laying eggs immediately after their first mating and both sexes can mate several times during their lives. Adults in summer generations live from two to five weeks.

Life Cycle of the Monarch Butterfly

Like all species in the order Lepidoptera (moths and butterflies), Monarchs engage in **complete metamorphosis**. This term indicates that there are four parts to a life cycle: egg, caterpillar, pupa, and adult. A vital component of the Monarch's life cycle is its **host plant**. Host plants are plant species that a moth or butterfly must have as food for the larvae (caterpillars). Caterpillars can only eat a select suite of plant species that is chemically compatible with that particular moth or butterfly species. In case of the Monarch, the host plants are milkweeds and on very closely related species. The butterfly lays its egg on milkweed plants, and tiny caterpillars soon hatch. The caterpillars begin eating the milkweed foliage, and grow rapidly. The growth process involves five molts where the caterpillar sheds its skin and emerges as a larger animal. The stage between molts is termed an **instar**. After reaching the end of its fifth and final instar, the Monarch caterpillar forms a beautiful chrysalis, in which its tissues are transformed and reorganized into the adult butterfly. Once the transformation is complete, the butterfly forces its way from the chrysalis and fluid is pumped into the wings to make them expand. Once the wings harden the butterfly is ready to take flight. The entire process, from egg to adult butterfly, takes four to five weeks.

Monarch Migration

There are numerous insects, including many moths and butterfly species. However, because of the Monarch's large size and conspicuous coloration, its migration is the most obvious of our butterflies. Depending on the length of the season, which can be dictated by weather, Monarchs might have from two to four different broods during migration. The adults produced from the last hatch will make an incredible journey to high elevation oyamel fir forests in central Mexico. This journey might entail traveling nearly 3000 miles, one way. Once in Mexico, the butterflies congregate in massive numbers in a very few favored locales. Roosting trees are blanketed with butterflies, creating one of North America's greatest natural spectacles. Northward migration reaches the U.S. in early March. Females lay eggs on emerging milkweeds through most of the green area of the map. The offspring of this first brood then colonize the remainder of the breeding range in eastern North America.



Check with your regions' Departments of Natural Resources or local nurseries to find the correct species of milkweed to use in your butterfly garden. At a great distance, Monarchs "smell" the milkweed with receptors on their antennae. Most accounts claim this can happen over a mile away.

The Problem

Monarch populations have declined alarmingly in recent years. The early count of monarch butterflies overwintering in Mexico, released March 13, 2020, shows a decrease of 53% from 2019's count and is well below the threshold at which government scientists predict the migration could collapse. Experts estimate that the eastern population of Monarchs has decreased by 90% over the past twenty years. This incredible downturn in numbers serves as an environmental red flag, and efforts should be made to correct the conditions which have led to losses in the Monarch population.

Reasons Behind the Decline

Scientists who study Monarchs cite several causes for population decline. 1) Timbering, and possibly increased infestations of bark beetles and perhaps an escalation of air pollution, have been detrimental to the Mexican oyamel fir forests where Monarchs overwinter. 2) An apparent increase in untimely weather events characterized by hail, freezing temperatures, and high winds have buffeted Monarchs on the wintering grounds and during their northbound migration. 3) A precipitous decline in milkweeds in much of North America is likely a major factor in Monarch declines. The organization Monarch Watch calculates that about 2.2 million acres of potential milkweed - and thus Monarchs - habitat is lost in the United States each year. Much of the loss in milkweeds stems from conversion of land to agricultural uses and other development, and the increasing efficiency of herbicides used in control of non-crop plants.

Other Winter Destinations

The southern coast of California and southern tip of Florida are also destinations for the Monarchs' overwinter areas with migration occurring along the southern most shorelines.

Building a Monarch Butterfly Garden

Filling your garden with butterfly plants creates an inviting, beautiful space to helpful pollinators. But have you considered attracting monarch butterflies specifically to your garden? It's always a thrill to see these orange-and-black beauties flitting around your flowers to fuel up on nectar during the summer. It can be even more exciting to watch their tiny caterpillars hatch on milkweed and grow a little bigger every day until they make their green cocoons, dotted with gold. If you're extra lucky, you might happen to be there when the new adult butterfly emerges a couple of weeks later and [takes its first flight](#). You can make your garden into a more welcoming haven for these beautiful insects with these seven tips.

1. Milkweed, Milkweed, Milkweed

Planting [milkweed](#) remains the best thing that the average gardener can do to help monarchs. It is *the* most essential building block of a proper monarch habitat; it's where the butterflies lay their eggs and the only thing that the caterpillars will eat. Look for plants in the *Asclepias* family, (depending on the region where you live). Native species of milkweed are always best because that's what monarchs would be naturally seeking as they migrate through your area. Get your plants from a reputable grower (one who grows without using commercial pesticides or fertilizers), or [start them from seed](#) yourself.

2. Keep It Chemical-Free

It is no secret that the widespread use of insecticides and herbicides has contributed to the decline of the monarch population. Many pesticides are non-discriminatory, meaning that when you spray them to kill one type of insect, you kill any that come in contact with the chemical.

3. Plant Nectar-Rich Food Source

Adult Monarch butterflies need more than just milkweed to feed on (while the caterpillars devour the entire plant, the adults drink the nectar from the milkweed flowers). Fill your garden with as many nectar-rich flowering species as possible, planning for early, middle, and late bloom times to ensure that there is a constant supply of seasonal food.

4. Grow Colorful Native Plants

The more native plants you add to your garden, the better. Monarchs depend upon a finding diverse food supply, not only during the spring and summer when they are breeding, but also into the fall when they are migrating. Native plant species are perfectly adapted to provide a succession of timely, nectar-rich blooms from spring to fall and they require almost no maintenance.

5. Provide Water and Mineral Sources

Butterflies (especially males) typically obtain extra moisture and essential minerals through a behavior known as puddling - this happens in particular during periods of drought and heat. They will find damp surfaces, such as soil, sand, rocks, or decomposing material. Butterflies need dampness more than standing, deep water. If your garden doesn't naturally include puddling spots, you can easily create a butterfly puddling pool by filling a shallow dish with garden soil and/or low, small rocks. Add minerals periodically by sprinkling salt, compost or small pieces of decomposing fruit.

6. Rock On

Butterflies are cold blooded like all insects so they rely on the warmth of the sun to maintain their body temperature. This is why you will only see them active during the warmest parts of the day. Placing flat, smooth rocks and other heat retentive materials in sunny parts of your garden will give them a warm place to rest and recharge.

7. Give Monarchs Shelter and Protection

It is also important to surround your Monarch habitat with protective plants. Trees, shrubs, and vines with strong woody stems and dense foliage work perfectly for this.

Did you know?

The Monarch Butterfly's average:

- * Wingspan is 3.7 to 4.1 inches

- * Weight is 0.0095 to 0.026 ounces

A group is called a "flutter"