



The Garden Club of East Hampton Newsletter

Spring 2015



The Garden Club of America Conservation Committee Endangered Species & Ecological Restoration Jeanne Arthur, Vice Chair February 2015

Monarch Butterflies (*Danaus plexippus*) are born with an innate compass that directs them on their annual migrations. They are born and then live only a few weeks. During their migrations from as far north as Canada, through the eastern continental United States east of the Rockies down south to Mexico, several generations of butterflies are born and die. A much smaller population lives west of the Rockies; they winter in California near San Diego and Monterey. Some monarchs have adapted and live year-round in the Hawaiian Islands.



A monarch never flies the entire migratory route, yet is born knowing it. Each spring and summer about 3 to 5 generations are born and live just about 5 weeks per generation. The exception is the last generation born at summer's end. This is the generation that must make the journey to the cool Sierra Nevada Mountains of central Mexico and the woodlands of central and southern California near San Diego and Monterey. Here the butterflies overwinter until the following spring. Then they fly north to the southern US where they begin to breed and the females search for milkweed on which to lay their eggs. This last generation can live as long as 8 months.



The habitat of Monarchs in spring, summer, and early fall is in warm southern climates where these butterflies are constantly searching for milkweed. Adult monarchs feed on nectar from a wide variety of flowers, including milkweed. However, during the caterpillar stage they live exclusively on milkweed wildflowers in the genus *Asclepias*. Once their hundreds of pinhead size eggs are laid on the underside of milkweed leaves, it takes about 4 days

for the egg to hatch into 1/16 inch caterpillar that grows to about 2 inches over the next two weeks on its diet of milkweed. Milkweed plants contain glycoside toxins that are harmless to monarchs but poisonous to its predators. The caterpillars store the toxins in their bodies through metamorphosis thus making adult monarchs poisonous. Their bright orange wings warn predators that the butterflies are poisonous and taste terrible.



When large enough, the caterpillar will form a protective chrysalis as it undergoes metamorphosis and changes into a butterfly after another two week period. As the butterfly emerges from the chrysalis, it rests long enough for its wings to straighten out and harden and then it sets out on the journey begun by its parents. About five generations are born in succession as the Monarchs continue northward.

The last generation born in late summer is the one that will head to Mexico, beginning the 2000 to 3000 mile cycle again.

When Monarchs fly, they cover about 100 miles a day and fly as high as 10,000 feet (almost 2 miles). They go to Mexico's Oyamel Fir Forest. These firs (*abies religiosa*) grow only at high altitudes. This Oyamel forest ecosystem is Mexico's most endangered type of forest and covers only 2% of its original range. It is now mostly at the top of 12 different mountain tops where the higher altitude is able to keep the moisture and coolness that the trees and the butterflies need. Cooler temperatures slow the butterfly's metabolism so they burn less energy, but if they get too cold they can freeze to death.

This past October, 2014, the Conservation Study Trip was to Monterey, California. While there a few of us drove to Monarch Grove Sanctuary in Pacific Grove, CA. It is a 1.5 acre flag shaped site of pine, cypress, redwoods, and blue gum Australian eucalyptus trees. There is a persistent breeze from the northwest. Dr. Stuart Weiss, consultant for a conservation plan for the area, noted that the butterflies "dynamically" seek microclimates within forest groves. The microclimate is created by the structure of the tree canopy and has its own temperature, wind, and sunshine characteristics. His long term management plan is to anticipate changes to the forest and resultant microclimates over time. He recommended two rows of trees, rather than one, to shelter the area in more directions from winds, to create more openings, and to offer a variety of sunlight from full sun to dappled sunshine, to full shade.

Another important consideration is to provide on-going sources of nectar for the butterflies in the park. Although not native, the Australian Eucalyptus that grows there blooms in the winter, providing nectar during the winter to the monarchs. When we were there, the monarchs had already begun to gather in this small area of forest. They attached themselves to the tree branches and then to each other, dangling like large but delicate orange and black chandeliers to conserve heat. Last week there were almost 8,000 monarchs in Pacific Grove.

On warm days they do leave the trees to drink nectar so they can build energy for when they can mate during the warmer days of February. By March most of the monarchs have left on their spring migration.



The numbers of monarchs wintering in Mexico are down 80% from the highs of the mid-90s. 2014 was the lowest number on record; the migrating butterflies covered only 0.67 hectares of forest, down from 21 hectares in 1996-97. (A hectare is 2.47 acres). This startling fact inspired people all across our country to plant milkweed in their gardens but many planted the wrong species of milkweed, especially tropical milkweed (*Asclepias curassavica*) leading to infestations of a crippling parasite known as OE (*Ophryocystis elektroscirrha*). This year it was hoped the monarch count would go up, and it did, but barely. For the first time in 4 years the numbers are up slightly with a 69 % increase over 2014, but still the second lowest since recording began in the winter of 1993-94.

Only milkweed native to your USDA hardiness zone should be planted in your yard. Go to [http:// planthardiness.ars.usda.gov/PHZMWeb/](http://planthardiness.ars.usda.gov/PHZMWeb/) and enter your zip code to find your USDA hardiness zone. Then go to www.monarchbutterflygarden.net/milkweed-plant-seed-resources/ and find the milkweeds that match your hardiness zone.

Go Native! Use only the matches for your monarchs!

Sources:

1. <http://news.sciencemag.org/biology/2015/01/more-monarch>
2. www.learner.org/jnorth/tm/monarch/SanctuaryFactsOyamel.html
3. <http://www.ci.pg.ca.us/index.aspx?page+251>
4. www.defenders.org/monarch-butterfly.basic-facts
5. www.nwf.org/wildlife/wildlife-library/invertebrates/monarch-butterfly.aspx
6. <http://news.yahoo.com/monarch-butterflies-rebound-mexico-numbers-still-low-154023044.html>
7. <http://www.ci.pg.ca.us/index.aspx?page=251>
8. http://www.ci.pg.ca.us/modules/showco=document.aspx?documentid_308
9. <http://news.sciencemag.org/biology/2015/01/plan-save-monarch-butterflies-backfires>