



The Monarch Butterfly

Enclosed within a quiet eucalyptus grove and clustered more thickly than leaves are thousands of monarch butterflies. Gradually, as dappled sunlight warms the grove, they begin opening their wings to bask. Entire branches, layered with butterflies, turn vivid orange and black. Suddenly a cascade occurs. The warming air has increased the temperature within a cluster and hundreds of monarchs become active in the same instant. Releasing their hold on the branches, they flutter skyward filling the air above your head. They are so close and so numerous you can hear the peaceful “susurrus,” the whispering sound like a distant waterfall, made by the movement of their wings.

The scene described above may sound like a dream or the product of wild imaginings. Yet, it is a common natural occurrence each year from November through February at monarch overwintering sites along California’s coast.

To witness this natural spectacle is an experience not to be missed and never to be forgotten.

Two such sites exist in eucalyptus forests within the East Bay Regional Park District: one at Pt. Pinole Regional Shoreline and the other at Ardenwood Historic Farm. Tours of these sites are made available through the naturalist staff by reservation only.



Monarch caterpillars from newly hatched to full grown.

An Intriguing Insect

The monarch butterfly weighs only 1/50 of an ounce. Yet, it can travel up to 20 m.p.h. and has been sighted by glider pilots at elevations of 10,000 feet. It migrates hundreds to thousands of miles each year to reach ancestral overwintering sites it has never visited before. The behavior of this remarkable butterfly is considered unique – no other insect known to science has as long and precise a migration pattern.

Native to North America, monarchs are divided into two populations: one east and one west of the Rocky Mountains. At the end of the breeding season each August, most of the monarchs living west of the Rockies migrate toward coastal California to overwinter in one of the approximately 100 known monarch sites. Eastern monarchs migrate to overwintering sites in Mexico.

After wintering, monarchs search for patches of milkweed, moving north and east from the California coast. When this host plant is located, the female carefully lays 100 or more eggs and then both males and females of the overwintering generation die.



Monarch egg on underside of milkweed leaf.

Monarch Development

Monarch eggs develop and hatch in about four days. Tiny emerging caterpillars dine voraciously on milkweed leaves and increase in size 2,700 to 3,000 times in the first two weeks of life. If a human baby developed this rapidly it would be the size of a blue whale by two weeks of age. Growing to two full inches in length, the plump black, yellow, and white striped caterpillar completes its development and prepares for transformation into the adult form.



Monarch caterpillar attached upside down preparing to shed its skin.

Searching out a sheltered location, the caterpillar attaches itself to a solid object and hangs upside down. Here it sheds its old skin and hardens its new skin into a jewel-like case called the *chrysalis*.



Monarch chrysalis

Within the chrysalis, the body of the caterpillar dissolves into what has been called a “living soup” and its cells rearrange to form the exquisite adult butterfly. This metamorphosis takes 10 to 15 days.



Monarch butterfly emerging from the chrysalis.

Monarchs emerging from the chrysalis in spring live only about two more weeks, long enough to travel farther north and east in search of milkweed, reproduce, and die. Like the first spring monarchs, succeeding spring and summer generations live only six weeks. Thus, generations of monarch butterflies continue the north and eastward migration as spring arrives and milkweed grows in the northern latitudes.

The Migrants Return

By late August as the fifth generation of monarchs develop, the days begin to grow shorter and nights become cooler. These butterflies, sensing the coming change of season, quickly increase body fat and delay mating. They begin their long migration south and west into California to find the ancestral overwintering site they have never seen before. Here, they gather to wait out the winter. Those that survive will reproduce the following spring, having lived to the ripe old age of six months, or more.

Biologists today are just beginning to fully understand the complex relay race of monarch migration. How do monarchs know precisely where to find their overwintering sites when no individual butterfly has ever made the round trip? If a monarch from Ardenwood mates with a monarch from Monterey, where will their offspring overwinter? Many mysteries are yet to be solved. But, we do know that protecting overwintering sites is essential to the survival of the species.



Protecting Monarchs

Because all living monarchs cluster in relatively few sites each winter, destruction of even one site impacts a large percentage of the population. With the increase of development in California, biologists consider monarch overwintering to be an “endangered phenomenon.” As open space disappears, acres of wildflowers which supply nectar for migrating monarchs and dozens of other butterfly species are lost. Without protection, the Western monarch and many of its relatives could become endangered species in the near future.

What You Can Do

You can help the monarch by safeguarding overwintering sites, as the Regional Park District has done at Ardenwood Historic Farm and Pt. Pinole Regional Shoreline. You can also turn your own yard, patio, and/or garden into “butterfly-friendly” habitat. One way to do this is by planting specific nectar-producing flowers and milkweed plants and by restricting your use of pesticides.

For more information on establishing a butterfly garden, see the EBRPD brochure *Butterfly Gardening* available at the District’s visitor centers. In addition, you may wish to call Coyote Hills Regional Park to arrange a visit to the butterfly garden. (510) 795-9385

The Regional Parks Botanic Garden, located in Tilden Park, Berkeley, has an annual native plant sale on the third Saturday of April. Many butterfly-attracting plants are available. (510) 841-8732

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Visitor Centers

ARDENWOOD HISTORIC FARM
Fremont (510) 796-0663
awvisit@ebparks.org

BLACK DIAMOND MINES
Antioch (925) 757-2620
bdvisit@ebparks.org

COYOTE HILLS REGIONAL PARK
Fremont (510) 795-9385
chvisit@ebparks.org

CRAB COVE at CROWN BEACH
Alameda (510) 521-6887
ccove@ebparks.org


SUNOL REGIONAL WILDERNESS
Sunol (925) 862-2601
svisit@ebparks.org

**TILDEN NATURE AREA/EEC
and LITTLE FARM**
Berkeley (510) 525-2233
tnarea@ebparks.org

Further Reading:

Common Butterflies of California, Stewart
California Butterflies, Garth & Tilden
Western Butterflies, Opler

This brochure is provided as a public service of the Interpretive and Recreation Services Department of the East Bay Regional Park District. For more information, call one of the visitor centers listed above.

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