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The Monarchs: Butterflies *Are* Free

PHOTO: KENT EATON

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Each year the Monarch butterfly migrates south, gathering by the thousands in over-wintering areas. Most everyone knows of the famous Pacific Grove site, which has received extensive coverage from the national press. Remarkably, though, an even larger colony—the western Monarch's largest known over-wintering site—is located within Santa Cruz city limits at Natural Bridges State Park.

Although it receives very little publicity, the Natural Bridges colony fluctuates around the 100,000 mark during its October to March visit. There is no way to anticipate the thrill of seeing tens of thousands of butterflies at one time. Several Monarchs will flutter about on your two-minute walk down the butterfly trail, but at the end of the path, there it is: the Butterfly Tree, with Monarchs clinging so densely together they appear at first glance to be the leaves of the trees.

"When the sun shines and a lot of them are active," Ranger Alex Weiss says "it's like a Fairyland down here." In fact there is a magical enchantment to the place. A woman I told about this story recalled visiting the tree years ago with her children; after sitting quietly for several minutes they were covered with Monarchs.

The reason for the Monarchs' southern migration is based on their tropical origins. The life span of any butterfly is very short—even the Monarch normally lives only four to six weeks—and most cold-weather species have adapted by way of a chrysalis stage which allows them to remain dormant throughout the winter. The Monarch has also adapted with a distinct autumn generation of offspring that possesses high fat deposits thus insuring survival through the colder months.

The Monarchs, whose northern range extends into Canada, cannot survive freezing temperatures. Hence they are the only species of butterfly that makes a mass migration in search of an area with year-round temperate climate. They seek sheltered groves of trees with long narrow leaves which they can cling to. Eucalyptus groves are their favorite because of the leaves and the high canopy of surrounding trees. Here they congregate en masse, living off their fat in a state of torpor, clicking into action but occasionally in order to ingest the water and salt required for survival.

The Monarchs are not disturbed by human observation, even at the state park where 200,000 people come to see them during their six month stay. They lay eggs only on milkweed, but the plant is so widespread that an ample supply of baby Monarchs is assured. The fact that the caterpillar feeds on milkweed gives the adult butterfly another big edge; for milkweed contains an alkaloid that is poisonous to nearly all animal species.

The wide distribution of the Monarch is also a plus for its continued survival. But according to lepidopterist John Lane of the Santa Cruz City Museum, this survival is not so certain in the coming years.

The critical point in the Monarch's life cycle is the wintering spots, where a widely-distributed population congregates in highly-concentrated groups. During the winter, California alone harbors the entire western population of Monarch butterflies. The eastern population over-winters in a small area of southern Mexico. Any disturbance of these areas would have extremely negative effects on the Monarch.

Land development is, of course, the chief culprit. Remove the habitat and you lose the Monarch. Monarchs are highly dependent on their sense of smell in breeding, and hence are endangered by air pollution. High noise levels also could keep the populations away from important wintering sites.

Mexico has protected their entire population in an area that is prime lumbering land—one of the country's leading resources. In a country where the standard of living leads people to feed butterflies to their cattle—one of the few animals who can neutralize the Monarch's poisons—the Monarch is protected. California, on the other hand, has no statewide policy concerning the Monarch butterfly.

No scientific study has ever been undertaken to determine the number and location of over-wintering sites. No study has ever looked into the effects of pollution on the Monarchs. Some prime sites have been lost as a result: Pacific Grove's Butterfly Tree Lodge, for example, no longer attracts Monarchs.

"It's critical that California develop a statewide plan to protect our historically and biologically important population of Monarch butterflies," Lane asserts.

Mr. Lane, who shies away from being called a Monarch expert, has been forced into the role of Monarch advocate. He has appealed to various state agencies, the area Coastal Commission and the state park system without receiving any encouragement. He sees the steps taken locally to educate the young as a very positive step. He feels that the city of Santa Cruz is missing the boat, however, by ignoring a potentially significant tourist attraction.

"The local economy is so lopsided towards the summer tourist income, and yet we have the largest Monarch population in the state here every fall and winter," Lane says. "If the city would do one thing—put up a sign on Ocean Street saying 'Thanks for coming to Santa Cruz. Please return in the fall to visit our Monarch butterflies'—it would be a real boon for the local economy."

In a time of tight money for biological research, Monarchs continue to receive study-grant funding because of their uniqueness and their practical scientific applications. They interest migration specialists as the only insect with a predictable annual migration. It was recently discovered that Monarchs have magnets that guide them—a fact that has opened new areas of study. They are of interest because of their scent glands which are utilized to attract mates. Their detoxification of the poison in milkweed is of interest to the medical community studying the beneficial effects of this chemical on heart patients.

Another, as yet unexamined, application of Monarch study is their possible use in predicting earthquakes. Animals' reactions to an impending quake is a serious study; and here are very small creatures, who should be extremely sensitive to electro-magnetic disturbances, massively congregating in earthquake country.

We are fortunate to have this beautiful and valuable creature in our midst. So go out to Natural Bridges and celebrate the Monarch's return. Let's hope that generations to come will benefit from their presence.

A fee of $2 per vehicle is collected for all-day use, but no fee is charged to visit Natural Bridges for a short time. As Ranger Weiss quips, "The butterflies are free." Group tours of ten or more people can be arranged in advance; this service is free for schools, with a small fee for private groups. □