

Monarch butterflies found dead in large numbers in Mexico forest

Officials searching for answers

BY MORRIS THOMPSON

Herald World Staff

CERRO SAN ANDRES, Mexico — When up to 5 million monarch butterflies turned up dead here, some people suspected murder.

The mayor of Maravatio, whose jurisdiction includes this remote forest, heard that a pesticide had been sprayed on these magnificent insects and his tale, relayed by an environmentalist, was transmitted in news stories around the world.

The mayor was probably wrong. But the likely cause of the insects' demise — the destruction of the forests where they spend the winter — may be even more worrisome.

Mayor Jaime Hinojosa Campa at first suspected disgruntled residents may have killed the butterflies last month to thwart his efforts to add this traditional monarch wintering area to government preserves.

With the butterflies dead there would be nothing to protect, and residents could have unrestricted access to the forest.

However, the evidence pointed in a different direction — a government report blamed a cold snap. But a cold snap alone was not enough to decimate the monarchs.

Legal and illegal logging in the mountain forests of Mexico's central Michoacan state has degraded and severely reduced the size of the habitat where the orange-and-black butterflies spend the winter before heading toward Canada. The Oyamel fir trees in which the monarchs lived

were too small to provide protection when rain fell and a freeze followed.

"Every day, people are cutting more and more," Hinojosa said. "And the government has only two or three people working to re-establish the forest."

Among the drying stumps and thin trees, the forest floor in Cerros San Andrés is still papered with wafer-like butterfly carcasses.

By contrast, the Rosario butterfly sanctuary, about 25 miles to the southeast, has a healthy forest. Most of the monarchs there departed recently on the long journey north, with major layovers along the Gulf Coast from Texas to Florida.

As the sun warms the firs that top the thick forest canopy, thousands of butterflies flutter from the branches and stream in a swirling procession along the migration paths.

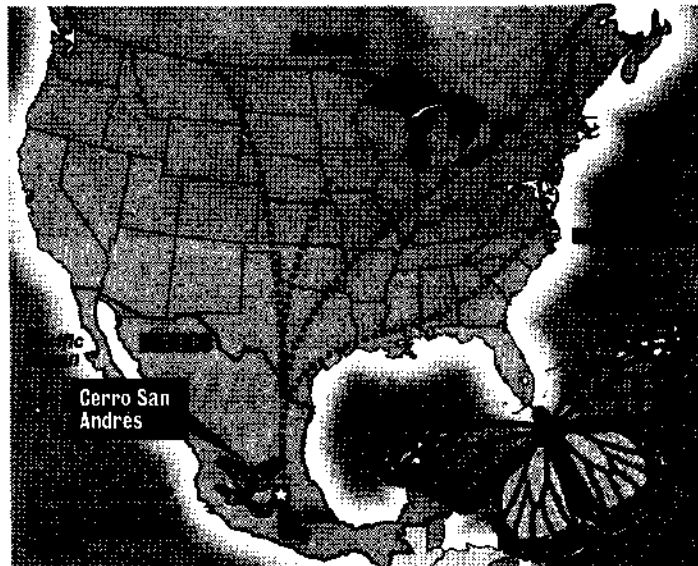
The Mexican government began trying to protect the monarchs' habitats in 1986. Just before former President Ernesto Zedillo left office late last year, he more than tripled the officially protected areas to almost 139,000 acres.

U.S. zoologist Lincoln P. Brower, a leading expert on monarch butterflies, says the expanded area includes about half the monarchs' Mexican habitat. Yet he found, in a study for the World Wildlife Fund, that the tree cover in the reserve area is shrinking; it declined 44 percent from 1986 to 1999.

Adult monarch butterflies that make their summer homes east of the Rocky Mountains come here for the

MONARCH SANCTUARY

Ten million Monarch butterflies leave their sanctuary in Mexico each November, headed for Southern Canada.



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Oyamel fir trees.

Ten million monarchs concentrate in two and a half acres where trees are plentiful. They stay from late November to late March, then migrate toward southern Canada, where Oyamel firs are plentiful but scattered. Monarch colonies west of the Rockies winter along the California coast.

In Mexico, people who live in and near the forests have for generations relied on logging and the small-scale manufacture of products such as furniture and handicrafts.

Deforestation intensified as the population in the area grew from about 20,000 in the 1960s to almost 10 times that today.

Unfortunately, designating an area as a reserve doesn't provide full protection.

The Mexican government owns only about 1,700 of the 42,000 acres in the core

reserve zone, where logging is banned.

The World Wildlife Fund, using a \$5 million grant from the Packard Foundation, has begun paying landowners in the core zone to discourage logging, and is also paying landowners in the buffer zone not to use their permits.

Monica Missrie, head of the World Wildlife Fund's Mexico monarch project, said landowners receive "a bit less" than they would make from logging. The program, which began last October, will pay out about \$400,000 this year. Missrie says the Mexican agencies charged with protecting the monarch reserves don't have enough resources, including personnel and vehicles.

The administration of President Vicente Fox, who took office Dec. 1, is trying to address the issue and is drawing up an enforcement plan.