

Reserve saves trees but not monarch butterflies

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In this photo taken Nov. 5, 2010, pine seedlings grow at a reforestation project in San Juan Xoconusco, Mexico, part of the wintering grounds of the Monarch butterfly in the mountains west of Mexico City. The Monarch butterfly reserve in the mountains west of Mexico City is a link between developed and developing nations, the butterflies migrate to Mexico from the United States and Canada, and its has benefited from international help, like payments to communities to preserve trees and alternative income projects that helped cut the deforestation rate here by about 95 percent. (AP Photo/Dario Lopez-Mills)

(AP) -- This small patch of mountain fir forest is a model of sorts for the global effort to save trees and fight climate change. The problem is that saving trees has not saved the forest's most famous visitors: Monarch butterflies.

Millions of Monarch butterflies migrate here from the United States and

Canada every year, but their numbers declined by 75 percent last year alone, apparently because of changing weather and vegetation patterns.

The [Monarch butterfly](#) reserve shows how complex the battle against climate change has become, as the world prepares for a United Nations [climate conference](#) in Cancun next week. The conference is expected to focus in part on how best to preserve forests, with questions about who should pay and how to treat communities who already live in the jungles and forests of developing countries.

Forest preservation is the goal of a popular U.N.-sponsored program known as REDD, or Reducing Emissions from Deforestation and Degradation, which garnered more mentions than any other program approved at the last international climate meeting in Copenhagen. The hope is for developed nations to pay poorer ones \$22 to \$38 billion per year to help them preserve forests.

"It is not a hypothetical idea or theory," said Mexico's Environment Secretary Juan Rafael Elvira Quesada of the REDD program. "It's working in many countries around the world. What we really require is....that it convert into an agreement at Cancun."

The Monarch butterfly reserve is an example both of how the program could work, and of its limitations.

The reserve in the mountains west of Mexico City benefits from international help, such as payments to communities to preserve trees and alternative income projects. The deforestation rate there is down by about 95 percent.

Fernando Solis Martinez, 54, is the head of a "communal property commission" that takes care of jointly-owned land inherited from Indian ancestors in San Juan Xoconusco, a village within the 13,550 hectare

(33,482 acre) reserve. He oversees the watering and replanting of oyamel fir seedlings at the village's tree nursery. The 120,000 seedlings will be distributed throughout the reserve come June, when the rains return, to replace areas cut or washed away in severe storms.

"This nursery is a way to do maintenance on the forest, and provide jobs for more people," said Solis Martinez, as he takes a break from efforts to rebuild a balky water pump.

Set up three years ago with help from the World Wildlife Fund, the nursery is part of a mix of projects - direct payments from the government and contributions from private companies; a scheme for collecting sap and selling it to turpentine manufacturers; sales of woven pine-needle artisanry, and hopes for a tourist operation - that could provide income streams for future generations.

It is not paradise; most residents of Xoconusco still have to work for about 120 pesos (\$10) per day) at flower hothouses down in the valley, and illicit loggers are a constant threat. Most communities send patrols of 10 men into the mountains every day to listen for the distant sounds of chain saws. But despite the challenges, the program appears to be working.

Gabriel Colin Camacho, 37, the new head of communal lands in the village of Crescencio Morales, has started to turn around that community's reputation as one of the worst areas for deforestation in the reserve. Now he says most of his neighbors realize that a steady stream of government payments would end if the forest disappears.

"Before, we saw the forest as nothing more than money, that we could take without any considerations," he said. "You could say that we were fools, because we sold the wood for less than it was worth."

Deforestation and soil degradation causes between 17 and 20 percent of greenhouse gases worldwide, a greater proportion than transport. But the idea of saving forests to trap greenhouse gases has come a long way since the days when simply planting a stretch of eucalyptus trees on a clear-cut plain would qualify as "offsets," the practice of balancing greenhouse-gas emissions in one place by "trapping" carbon in trees.

The world is still losing 12.8 million acres (5.2 million hectares) of forest per year, despite reforestation efforts that reduced the annual rate of loss from 20.3 million acres (8.3 million hectares) in the 1990s. So far, an alliance of about a dozen developed nations is providing about \$4.6 billion in funding for projects in about 60 developing nations.

But when you're talking that amount of money, you want some accounting and control, tree by saved tree. And of course you have to raise the money: high-emission companies looking for offsets offer a potentially rich source of funds. The idea angers many activists.

"We do not accept, and the people of the world will not accept, using forests as a sort of reserve so that big corporations can keep on polluting," said Raul Benet, an activist who is organizing protests at Cancun.

While the Monarch Butterfly Reserve is a success story, trees alone won't keep it going.

If the butterflies disappear - and by all accounts they are doing badly - interest in the forest could quickly evaporate. The REDD program has been improved to take into account the importance of biodiversity in forests.

While experts aren't really sure what has been battering the butterflies, changing weather patterns are clearly taking a toll.

Last year, clusters of butterflies covered a total area equal to only about 1.9 hectares (4.7 acres), compared to about 8 hectares (almost 20 acres) in the 2008-2009 winter season. Experts say it is still too soon to estimate figures on this year's migration.

Monarch expert Lincoln Brower cites climate swings of wet and dry weather, storms that damaged the reserve, and the crowding out of the only plant the Monarchs lay their eggs on, the milkweed, by genetically-modified crops.

Javier Espinosa, the coordinator of statistics for Mexico's National Weather Service, said February 2010 - when most of the storm damage occurred - was the wettest on record for the area in 70 years. Brower thinks the February storms may have killed 30 percent of the butterflies.

Brower cautions that a cold snap, combined with wet weather and spotty tree cover, could be disastrous, freezing the Monarchs, but warmer weather could hurt them by making them more restive, burning up the fat reserves they need to fly north in the spring.

Any extreme variation in weather hurts the migration, and that is more or less what climate change is expected to cause. "I think it's a disaster of major proportions that's not being recognized," Brower said.

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