

Monarch Butterflies Hit New Low; "Worrisome" Trend

Insects found in only about three acres of habitat, report says.



Butterflies in Mexico's Monarch Butterfly Biosphere Reserve drink from a stream.

PHOTOGRAPH BY MEDFORD TAYLOR, NATIONAL GEOGRAPHIC

Christine Dell'Amore

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The king of the butterflies may reign no more: Monarch butterflies are experiencing a steady decline, a new report says, with the insects occupying the smallest area of land in one Mexican butterfly reserve than they have in two decades.

In December 2012, scientists surveying monarch habitat in Mexico's Monarch Butterfly Biosphere Reserve found the insects occupied 59 percent less land than the previous year—the smallest area recorded in 20 years.

Nine butterfly colonies were found in just 2.94 acres (1.19 hectares) of land, compared with 7.14 acres (2.89 hectares) in 2011 and a high of 44.9 acres (18.19 hectares) in 1997, according to the report, released March 13.

The insects are plummeting due to two main causes: widespread loss of a plant called milkweed, which their young rely on for food; and extreme climate fluctuations, including freezing temperatures and heavy rain.

Like many insect species, monarchs undergo natural booms and busts—but lately there have been more busts, said Omar Vidal, director of WWF-Mexico, which participates in the survey. "That's why it's worrisome."

Chip Taylor, founder and director of Monarch Watch, wasn't surprised by the report. He'd been expecting the low numbers, saying that his butterfly-tagging program has revealed a "real decline" in monarchs in parts of the U.S. Midwest.

Amazing Migration

Monarchs have "the most amazing migratory phenomenon in nature," Vidal said.

Every autumn, millions of monarchs fly south and west from southern Canada and the United States, stopping at sites along the way to feed—a process that takes thousands of miles and spans three to four generations.

Most adult butterflies live only about a month, but the final generation lives about seven to eight months—the time required to make the "incredible feat" of flying from Canada and the U.S. to central Mexico, according to WWF.

The last leg end up in the forests of the Mexican states of Michoacan and Mexico, where they spend the winter before the cycle begins anew. (Read about the discovery of the monarchs' winter home in a 1976 issue of National Geographic magazine.)

To complete the migration to Mexico, butterflies need to lay their eggs on a specific plant: milkweed. Once hatched, monarch larvae eat milkweed leaves as their first meal.

Habitats vs. Herbicides

Milkweed is not a favorite of farmers, though. Once widespread throughout the U.S., the plant's range has fallen considerably due to herbicide use on corn and soybean fields in several parts of the U.S., according to WWF.

Farmers increasingly grow herbicide-resistant crops that can withstand the chemical spraying that is killing off large swaths of milkweed. Research has shown that butterflies often frequent corn and soybean fields, where milkweed plants used to be plentiful.

Another threat to butterflies is climate extremes, including the droughts, heat waves, and storms that have hit North America in recent years, Vidal said. For instance, monarch numbers were very low in 2005 and 2006 most likely because of a severe drought in the U.S.

What's more, eggs, larvae, and pupae develop more quickly in milder conditions, according to WWF: Temperatures above 95°F (35°C) can be lethal for larvae.

Such extreme events could wipe out all Mexican butterfly colonies, Taylor said.

"That's the big concern—the smaller the population gets, the more vulnerable it gets."

Helping Monarchs

It may be tough to change the weather, but there are other ways to help the butterflies, advocates say.

For instance, the U.S. government could impose rules regulating herbicides that are killing off milkweed, Vidal said.

Taylor encouraged people to support monarch-restoration programs, in which landowners and others create butterfly habitat by planting milkweed plants.

"We've got to make this a national priority," Taylor said.

"We're losing a lot if we lose monarch butterflies."