



WHAT YOU SHOULD KNOW ABOUT MONARCH BUTTERFLY RECOVERY

The monarch butterfly is a threatened species that serves as a litmus test for the environment. Is it possible that they could make a recovery? And if so, what does that say about our environmental efforts?

The iconic monarch butterfly (*Danaus plexippus*), with its black-and-white-edged wings and bright orange, stained-glass window centers, is synonymous with America. Traveling from Southern Canada all the way down into Mexico on the annual migratory route, these bright and cheerful creatures truly are airborne royalty.

From grade school classroom projects to bestselling books such as Barbara Kingsolver's *Flight Behavior*, this North American species has made a significant impression on those of us who live there.

Yet not significant enough. Sadly, [monarch butterflies are in terrible danger](#). With population numbers down 80-90 percent in the past two decades, monarchs are in major peril. We're not helpless, though. In fact, there's a whole lot we can do for these orange-and-black beauties, according to Plant Ecologist Elizabeth Kaufman of [Pollinator Partnership](#), with whom we were lucky enough to score an interview.

STATISTICS DON'T LIE: MONARCH HABITAT AND POPULATION DECLINE

"Their North American numbers have suffered a steep decline of approximately 90 percent over the past two decades," says Pollinator Partnership. While they are not yet officially an endangered species, "in 2014 the U.S. Fish and Wildlife Service was petitioned to protect the monarch butterfly under the Endangered Species Act."

Their numbers continue to fall today, [according to recent figures](#): "The yearly count of monarch butterflies overwintering in Mexico ... shows a decrease from last year's count and confirms the iconic orange and black butterfly is still very much at risk. Today's count of 2.48 hectares of occupied winter habitat is down from 2.91 hectares last winter."

Naturally, it's not as simple as that, says Elizzabeth Kaufman, who wears several different hats at [Pollinator Partnership](#), including plant ecologist and habitat coordinator for Project Wingspan, which is a Midwestern and Great lakes initiative to increase the quality and connectivity of habitat across those regions.

"The yearly count of the Eastern migratory population numbers increased 144 percent this year in comparison to last, up to 6.05 hectares from 2.48 hectares," she says. "However, the bump in population numbers is largely credited to favorable weather conditions. A one-year increase, while an optimistic sign, is not a tell all that the species is not at risk. Historically, as recently as the mid-1990s, monarchs occupied approximately 21 hectares across their overwintering grounds. The Western monarch population is down by 99 percent."

Given a decades-long decline in habitat and increase in pesticides and other chemicals, this isn't surprising. Which is bad news for us.

"One out of three bites of food we eat comes from a pollinating animal," Kaufman points out. "You can't have healthy ecosystems without pollinators and vice versa."



Monarch butterfly recovery, fortunately, is possible – and indeed, necessary, both for our sakes and for the sake of the butterflies. But first we need to understand the issues, put the right measures in place, and maintain a forward-thinking approach to their preservation.

Let's take a look at what the most recent research shows about the way forward.

WHY ARE MONARCH BUTTERFLIES THREATENED?

Monarch butterflies have had to contend with a number of roadblocks to survival in recent decades.

"The greatest challenge to monarch conservation is being able to restore enough quality habitat to be able to support a viable population despite enormous habitat loss," Kaufman says. "Habitat loss and fragmentation are among the greatest threats to all pollinator species as well as all other forms of wildlife."

Their reproductive staple, milkweed, has decreased significantly in response to large-scale commercial agriculture and development. The problem is, monarchs “will only lay their eggs on milkweed species and caterpillars can only eat milkweed to grow.” Today’s former prairies are now covered by impermeable surfaces and agricultural fields, though, neither of which is hospitable to milkweed.

Monarchs face other challenges as well, such as:

- GMO crops designed to withstand large doses of herbicides, which milkweed cannot survive
- The tendency in agriculture to eliminate non-crop plants around the fringes of fields, where “weeds” necessary to pollinators could thrive
- Increased use of pesticides, insecticides and herbicides in general
- Environmental challenges such as drought and cold snaps

And they’re not alone.

WHAT DOES THEIR SITUATION REFLECT ABOUT THE ENVIRONMENT?

No one needs to tell you that the environment is in trouble, but monarch butterflies make it clear just how *much* trouble it’s in.

They are “a great indicator for environmental health that most people can recognize and relate to, in that they’re highly visible species,” Kaufman points out. “The Midwest is a hotspot for monarch reproduction, and historically the “corn-belt” was comprised of prairies and abundant with milkweeds and other nectar plants.” Today, once-bustling Monarch communities have dwindled 80-90 percent, a shocking depletion that brings home the habitat problem in crystal clarity.



Monarchs are also a bellwether species for the effectiveness of raising animals in captivity, then releasing them into the wild.

“There are folks who hold the belief that it would be beneficial to raise monarchs indoors and then release them,” Kaufman explains. However, “the latest advisories are not to do so unless it’s for educational purposes, such as a learning tool in a classroom. There is no scientific evidence that captive rearing is helping population numbers. Second, we don’t know how we are affecting monarchs in regard to their ecology and behaviors. Third, it’s really easy to introduce disease and parasites which could spread into wild populations.”

Lastly, the monarch situation reflects the relative difficulty of getting a species declared endangered. Despite the population nosedive, the United States Fish and Wildlife Service has not yet made a decision about their status. “The US FWS was petitioned to list the monarch in 2014,” Kaufman says. “The original deadline for a decision was this past June, but that process has been extended to Dec. 2020.” [You can find out more about that here.](#)



TAKING ACTION: CREATE MORE HABITAT IN ALL SECTORS

First and foremost, monarch butterflies desperately need more habitat for all stages of their life cycle. Although destruction of habitat through agriculture and development is hard to overcome, there's plenty we can do.

Those in the agricultural sector can, for instance, plant the margins of their fields with milkweed and other nectar-producing species that give monarchs a place to rest and eat. As a bonus, Kaufman says, this also supports beneficial insects that can reduce the need for herbicides and pesticides in fields, which in turn reduces stress on butterflies. Since those margins aren't in production anyway, there's no need to give anything up.

"For crops that aren't dependent on pollinators, such as soy," Kaufman says, "you will still attract beneficial predatory insects and reduce the need for pesticides. They will go out and eat, for instance, soy aphids."

You don't have to be a farmer to help, though. We need milkweed and other butterfly-supporting plants in as many places as possible, including:

- Homes and businesses
- Schools and other public buildings
- Rights of way and easements
- Community gardens
- Conserved land

ENCOURAGE YEAR-ROUND MONARCH BUTTERFLY RECOVERY THROUGH POLLINATOR-FRIENDLY PLANTINGS

Supporting monarchs is totally possible right at home. Monarchs, after all, need a lot of habitat to make up for all that lost prairie.

"The USGS came up with an estimate that we need to restore between 1.3 and 1.8 billion stems of milkweed within the Midwest, the monarch's primary breeding habitat, to stabilize the population and prevent extirpation," Kaufman says, so every little bit helps. "If you have limited space, plant a small garden. If you have larger space available, plant more."

Milkweed is required for monarch reproduction, but native wildflowers which provide nectar for adult butterflies are essential as well. Make sure, too, to plant wildflowers that bloom throughout the seasons, from spring into late fall. Kaufman explains that late fall is "a critical time for the southern migration. They're flying up to 3,000 miles, from Southern Canada and the Northern U.S. all the way back to the Central Highlands in Mexico."

To that end, she says, “We advise people to use a minimum of three different blooming species per season, and to incorporate bridging plants to provide vital nectar, and pollen for bees, between seasons so that floral resources are available throughout spring, summer, and into late fall.”

[\(You can download a guide to your planting zone here.\)](#)

One last caveat: Steer clear of cultivars. “While a cultivar might be beautiful, it’s always best to go with tried-and-true native species,” Kaufman explains. “Pollinators have evolved over millennia with native plants and these plant-pollinator relationships are complex. When you consider life on the evolutionary timescale, planting novel species that we developed in recent times for particular characteristics that appeal to us, those may not provide the same quality resources for wildlife as do plant species that co-evolved together with pollinators.”

BECOME A CITIZEN SCIENTIST AND ADD TO THE MONARCH BUTTERFLY KNOWLEDGE BASE

You can also join initiatives such as [Project Wingspan](#), which is dedicated to creating pollinator habitat. The project, according to the website, “is leading a coalition of partners in an effort to enhance land across the Midwest to support our imperiled pollinators.”

Their mission is to engage “public land managers and private land stewards throughout the 8-state target region of Arkansas, Illinois, Indiana, Michigan, Missouri, Ohio, Pennsylvania, and Wisconsin through a series of monarch habitat enhancement activities with the goal of enhancing and securing 10,000, acres of high-quality monarch and [Rusty Patched Bumble Bee] habitat.”



The purpose of the program, Kaufman explains, is “to quickly and rapidly develop a supply of local genotype seed, which is seed that inherently has genetics specifically adapted to local environmental conditions, for restoration projects across the Midwest and Great Lakes landscape.” (Each state is divided into two to three seed collection and re-distribution zones.)

They work with volunteers all across the region to collect, geotag and clean seed. They then distribute seeds and plugs back to the regions from where they were collected, creating native habitats for the pollinators that live there, monarchs included.

You can help in a number of ways:

- Collecting seed
- Monitoring monarchs through counting eggs, caterpillars and adults
- Monitoring disease outbreaks



"It is impressive mobilization, and really restores one's faith in humanity, because the participation level has been so phenomenal," Kaufman enthuses. "It has really engaged people at so many different levels. Such a range and diversity of educational, socioeconomic, and political backgrounds, and multiple organizations and agencies are involved. The monarch has become a really great ambassador for the conservation of many pollinator species and for the restoration of native habitat."

If you want to get involved, check out the [Project Wingspan](#) web page to learn more. If you'd rather learn about planting a butterfly garden in your own yard, we invite you to [get in touch](#) with Ecogardens today.

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GET IN TOUCH TODAY!

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