**Disappearing Monarchs**

PostAuthorIconWritten by Carly Baldwin; Teacher at Fairview High School (Ashland, KY) | [Print](http://scijourner.org/index.php?view=article&catid=7%3Abiology&id=274%3Adisappearing-monarchs&tmpl=component&print=1&layout=default&page=&option=com_content&Itemid=28)

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I was eagerly awaiting visitors this past August. Every year I ready my home and classroom for the arrival of monarch butterflies. I plant milkweed, the Monarch’s favorite habitat, and wait for the migration to travel through Ashland, KY. The monarch buttery exhibits the most highly evolved migration pattern of perhaps any known insect, according to the [World Wildlife Fund](http://worldwildlife.org/species/monarch-butterfly). However, for the first time that I can remember, they never showed up. Was this disappearance happening nationwide?

A monarch caterpillar munching on milkweed. Will this become a rare sight? Credit: Carly Baldwin.

There has been a significant decline in the monarch population since 2003, according to [Chip Taylor](http://www.monarchconservation.org/?q=node/142), a Professor of Ecology and Evolutionary Biology at the University of Kansas and founder of [Monarch Watch](http://monarchwatch.org/). Monarch Watch is an outreach program focused on education, research and conservation relative to monarch butterflies.

According to [Lincoln Brower](http://www.biology.sbc.edu/faculty/HomePageLPB.html), a Research Professor of Biology at Sweet Briar College, this winter's population will be the smallest ever recorded in Mexico. The monarchs of North America are the only butterflies to make a two-way migration every year.  Most of the population, the monarchs that are east of the Rocky Mountains, migrates to the same over wintering sites each December. The monarchs take shelter in the [Oyamel fir trees](http://www.google.com/imgres?imgurl=http://api.ning.com/files/OcjT2oDSV4m1EqUlzNcYBzrjB1CS2kXQdPjzEL81A4H*w*afEVVI6suEUOYQJNIzWrN167WjG6cJqms9QuxM*GsFMWLkE2JN/PICT0185.JPG&imgrefurl=http://originalblessing.ning.com/xn/detail/2250942:Photo:12379&h=2112&w=2816&sz=3859&tbnid=nGAp97N2ST9O3M:&tbnh=106&tbnw=141&zoom=1&usg=__JA8YgYu0Wco7JCwjqVg6xCsBz5E=&docid=pI3-6OowQ9fygM&hl=en&sa=X&ei=tsw3UZyDI4Gf2QXVnoDwDQ&sqi=2&ved=0CDgQ9QEwAQ&dur=18) in the Transvolcanic Mountains of central Mexico after a 2,500-mile journey from Canada.

The monarchs that hatch in the late summer and early fall are biologically different from their summer counterparts, according to MonarchWatch.org. They will not mate or lay eggs until the following spring. Instead, they prepare for the long flight down to Mexico. Their abdomen stores extra fat needed to complete the journey and survive the long winter. These monarchs stay in the overwintering sites until the following spring.

Around the second week of March, the weather signals the monarchs to mate and begin the northern migration. The crucial part of this journey depends on whether the monarchs will find milkweed. Milkweed is the only plant that female monarchs lay their eggs on, and therefore the only food source for their caterpillars. After the females lay their eggs, they soon die. It is the next generation that continues the migration into Canada. During the summer, there might be three or four generations of monarchs. So, it is likely the great, great grandchildren that get to migrate to Mexico next fall.

There are many theories on why the monarch population is declining. Julie McDonald, a naturalist at Audubon State Park in Henderson, KY, noticed that high heat and drought in the summer of 2012 affected the monarch population of western Kentucky. The drought caused the main food source of the monarchs, common milkweed, to be scarce. This leads to the bigger problem, because milkweed is the only plant where females will lay eggs.

Taylor also believes the decline to be related to the use of herbicide tolerant row crops. Farmers are planting these crops in fields previously home to milkweed and popular monarch habitats. Taylor estimates that 100 million acres of monarch habitat has been lost due to these crops.

Taylor is not the only scientist to be concerned about the link between the increase of planting genetically engineered crops and the decline of available milkweed for Monarch habitats. John Pleasants of Iowa State University and Karen Oberhauser of University of Minnesota published an article in[*Insect Conservation and Diversity*](http://onlinelibrary.wiley.com/doi/10.1111/j.1752-4598.2012.00196.x/abstract) in 2012 that estimated that there has been a 58% decline in milkweeds on the Midwestern landscape and an 81% decline in monarch production in the Midwest from 1999 to 2010. Monarch production in the Midwest each year was positively correlated with the size of the subsequent overwintering population in Mexico. Taken together, these results strongly suggest that a loss of agricultural milkweeds is a major contributor to the decline in the monarch population.

Birds such as black-beaked orioles and black-headed grosbeaks are common predators at monarch overwintering sites. Only time will tell if the decline in monarchs will cause a decline in these species, as well.

**So what?**

Many of these organizations are now reaching out to the community and schools to start planting milkweed. Monarch Watch started a nationwide campaign called [*Bring Back the Monarchs*.](http://monarchwatch.org/bring-back-the-monarchs/) The goal of this program is to restore 20 milkweed species and encourage the planting of nectar-producing native flowers throughout the US, according to MonarchWatch.org. If the decrease in milkweed is a leading cause of monarch decline, then creating more habitats are needed to reverse the trend.

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I know that I have planted milkweed in my backyard and have encouraged my neighbors to do likewise. I'm hopeful that this August the regal monarch will visit my home once again.

Carly Baldwin