

localnews

www.peterboroughexaminer.com

Editor JIM HENDRY jim.hendry@sunmedia.ca 745-4641 ext. 242

LIVING

Where have Monarchs gone?

Regal butterflies rare in Kawarthas as climate change, pesticide effects take hold

In this summer of media-grabbing floods and wildfires, another sad story is quietly unfolding in the background - the near total absence of Monarch butterflies. Normally, Monarchs arrive in central Ontario in late May through mid-June via their spring migration north and are common sight by now. This year, however, they are almost none to be found.



DREW MONKMAN

OUR CHANGING SEASONS

The decline in Monarchs is partly due to the increased use of pesticides such as Roundup to eliminate the all-important milkweeds that sustain Monarch caterpillars. However, like the natural disasters that have struck southern Alberta and Toronto, the downward spiral of the Monarch population is also closely connected to climate change. Although, butterfly numbers do show a great deal of variability from one year to the next, what is happening this year has all the markings of something much more sinister.

The dearth of Monarchs is not limited to the Kawarthas. Butterfly counts - which are similar to Christmas Bird Counts - across the province have all reported the same disturbing absence. When the Ojibway Nature Centre in Windsor held its annual count on July 7, only one adult Monarch was spotted. Normally, dozens would have been seen. Counts in Haliburton, Presqu'île, Oshawa and Sunderland have all produced single-digit Monarch numbers, as well. "It's the worst I've ever seen," said long-time butterfly watcher Jerry Ball of Peterborough. "I've only seen one Monarch in Peterborough County this year."

CATERPILLAR COUNT LOW

Monarch caterpillar counts, too, are "the lowest we've ever seen," said Karen Oberhauser, a University of Minnesota professor who runs the Monarch Larva Monitoring Project. This is a citizen science project involving volunteers from across the United States and Canada that collects long-term data on larval monarch populations and milkweed habitat.

The absence of Monarchs is mirrored by a decline this year in bumblebees, parasitic wasps and many other kinds of beneficial pollinating insects - including many other butterfly species such as European Skippers. The basswood and linden trees that were blooming across the Kawarthas earlier this month should have been buzzing with bees and other butterflies but those that I saw were eerily quiet.

According to Lincoln Brower, an American scientist who has studied Monarchs for 58 years, the Monarch's annual migration from Canada and the U.S. to the mountains west of Mexico City could actually disappear. "It seems incredible to me that that could happen, but the Passenger Pigeon went down the drain and it had been a very abun-



TERRY CARPENTER Special to The Examiner

The annual arrival of Monarch butterflies is one of the touchstones of our natural cycle. But the cycle has been thrown off kilter by a number of factors, including the loss of milkweed plants that Monarch caterpillars feed on (left). Below is a vast soybean field that is completely free of milkweeds due to the use of new pesticides like RoundUp and Roundup Ready seeds.



Wikimedia photos

dant bird. Its breeding distribution was almost the same as the monarchs," said Brower last Thursday.

Joining the dots to explain what is happening to Monarchs reveals a complex picture. First of all, the number of Monarchs present in a given summer depends to a large degree on the size of the overwintering population in Mexico. The population this past winter was the lowest ever recorded. The annual census conducted in December 2012 found that the area of forest occupied by the butterflies was only 2.94 acres. This is a 59 percent decline from the 7.14 acres of butterflies measured in 2011 and an 87% decline from the 22 acres that was the average from 1994 to 2003.

A number of reasons explain the decline of the 2012-13 overwintering population. The record warmth of March 2012 allowed returning Monarchs to spread north rapidly. The generation of Monarchs that was born in Texas moved north-northeast out of the state and arrived at record-early dates in their northern breeding territories. In some areas, the butterflies arrived before the all-important milkweed plants had even emerged from the ground. These Monarchs were therefore not able to reproduce. Widespread drought in the summer and early fall of

2012 also created poor conditions for reproduction in many areas. Like the record warmth of March of the same year, the severity and extent of the drought was almost certainly related to climate change. Hot and dry conditions can have the effect of reducing adult lifespan and therefore the number of eggs laid. It almost means that the butterflies have much more trouble finding nectar to fuel their flight southward in the fall.

This year's record-low overwintering population meant that far fewer Monarchs than usual left the Mexican wintering grounds in March of 2013 to start the journey northward and to lay eggs in Texas and other southern states before dying. When weather conditions are good, the Monarch population expands very quickly and large numbers arrive in Ontario. However, in March and April of this year, the butterflies that developed from eggs laid in Texas were hammered by abnormally cold weather and a lack of nectar as they proceeded northward. This resulted in very few Monarchs



Some people may think that losing the migratory population of Monarchs is no big deal. I beg to differ. This spectacular migration is nothing less than nourishment for the human soul and for our sense of wonder.

arriving back in the northern U.S. and Canada.

THE LARGER PICTURE

The impact of climate change on Monarch butterflies goes beyond erratic spring temperatures and drought. It is also affecting their overwintering grounds. As predicted by climate models, severe winter storms originating over the Pacific Ocean are occurring more and more frequently. The storms bring in masses of warm air that sweep eastward and cause huge amounts of rainfall. Because many of the forests

Fruitful grafting

A free bud grafting workshop will take place on Friday, July 26 at the Mount Pleasant Women's Institute Hall at 2432 County Road 10 in Mount Pleasant.

This is an opportunity to learn how to grow multiple varieties of fruit on a single tree. A good-will offering to the Women's Institute would be appreciated or a donation of used soccer shoes for children in Belize, Central America.

The workshop is held simultaneously with the Farmers Market at the same location. You can check out the locally grown organic vegetables, pickled eggs, baked goods, meats and sewn crafts. There is something for everyone. Pre-registration is required because of limited space. The workshops will be held at 3, 4 and 5 pm. Register by contacting Andy Harjula at 705-277-1825 or at andyharjula@gmail.com

have already been thinned by illegal logging, the butterflies are more likely to get wet in these storms and to die from hypothermia. New research is also showing that climate change may eventually kill the Oyalmel fir trees on which the monarchs roost.

Loss of breeding habitat is the other main reason why Monarch's are declining. The prairies of the mid-western United States (e.g., Kansas, Indiana, Iowa, etc.) make up the Monarch's traditional range and, even now, most of the Monarchs that make it to Mexico each fall come out of the corn and soybean cropland of this region. In the past, patches of milkweed were able to survive in corn and soy fields. But milkweed's future changed when farms adopted the widespread use of genetically modified, "Roundup Ready" seeds. These seeds have been genetically altered to resist the herbicide, Roundup, which is sprayed on the fields to kill weeds. With Roundup, virtually all of the milkweed has been eliminated over more than 179 million acres. There has also been a huge expansion in the amount of cropland used to grow corn and soy. This has come primarily from the rush to produce ethanol and biodiesel as an alternative to fossil fuels.

As we are once again seeing this summer, increased drought, severe storm events, and unpredictable temperatures as a result of climate change are quickly becoming the new reality. This is already causing a huge amount of human suffering and billions of dollars of damage. In comparison, some people may think that losing the migratory population of Monarchs is no big deal. I beg to differ. This spectacular migration is nothing less than nourishment for the human soul and for our sense of wonder. And, of course, it's not just the Monarchs that are threatened but all areas of our flora and fauna. What saddens me is to think of all the young people who want to be scientists and devote their lives to studying nature, when so much of the wonder of the natural world is starting to wash away like sand castles under a rising tide of climatic chaos. But still, we refuse to do anything meaningful about it.

Drew Monkman is a retired Peterborough teacher and author of *Nature's Year: Changing Seasons in Central and Eastern Ontario*. He can be reached at dmonkman1@cogeco.ca. Visit his website and see past columns at www.drew-monkman.com