

Monarch Matters February 2013

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The OH Lepidopterists Society held its annual meeting in Columbus on January 19, 2013. The keynote speaker was Dr. Chip Taylor, Director of Monarch Watch. Dr. Taylor presented a power point presentation entitled, “Monarch Butterfly Conservation: The Challenges Ahead.”

Dr. Taylor began by briefly covering the dynamics of the monarch migration. He pointed out that the migration is very predictable, and seems to be associated with the declining angle of the sun. He described how the monarchs arrive in Mexico “virtually the same day every single year,” and their arrival coincides with the local festival, El Dia de Los Muertos, or Day of the Dead. For this reason, the native people of Mexico have long believed that the monarchs are the souls of their deceased loved ones, arriving to enjoy offerings from their ceremonial shrines, or ofrendas.

“The monarch migration is absolutely spectacular,” explained Dr. Taylor. But the monarch population is declining, and World Wildlife Fund has declared the monarch migration endangered. This winter, the monarch overwintering population in Mexico is likely to be the lowest **ever** recorded. Dr. Taylor predicts the population to be about 1.5 hectares, or less than 100 million butterflies. Why are the monarchs declining?

Dr. Taylor earnestly explained that global climate change is underway. “Monarchs are symbolic of what is happening, at some level, to everything that interests you—lepidoptera, birds, native vegetation.” He pointed out that for the past 16 years, U.S temperatures have been above the 20th century average. Global temperatures have been above the 20th century average for the past 36 consecutive years. He warned the audience that global climate change has started, and the effects of this change are coming rapidly. He urged, “We need to find a way to cope with the changes coming our way.” Increasing drought, severe storm events, and unpredictable spring and summer temperatures will become the new reality and these changes will affect not only monarchs, but many of our native flora and fauna.

Dr. Taylor also described the impact that herbicide-tolerant (HT) crops have had on the monarch population. Using a series of graphs, he demonstrated how the monarch population declined coincident with the increased planting of HT corn and soybeans. HT crops were planted beginning in 1996, and began to be used widely in 2000. It was then that monarch scientists began noticing a decline in the monarch population. “Once HT crops represented 40% of the total acreage, we began noticing a significant decline in the monarch population.” Dr. Taylor and his colleagues estimate that 160 million acres of habitat, or roughly 20% of the breeding range of eastern monarchs, has been lost as a result of the introduction of HT corn and soybeans. Interestingly, he pointed out that shifting crop production and the use of Conservation Reserve Protected (CRP) land has also changed dramatically. During a period when farmland decreased by 10 million acres, corn and soybean acreage actually went up—representing a conversion of

25.5 million acres of CRP land, grasslands, range lands and acres previously used for other crops to corn and soybeans.

HT crops have resulted in the loss of monarch habitat. But also at issue is development. In the U.S., development has resulted in the loss of 6,000 acres of habitat per day, or 2.2 million acres per year. Additional habitat has been lost as a result of more intensive agricultural practices that reduce field margins, referring to the space between crops and the roadside. Increased mowing and herbicidal spraying of roadsides has diminished pollinator habitat. Mosquito spraying has detrimentally affected lepidoptera. The list goes on. It feels overwhelming. So what can we do?

Dr. Taylor described two programs he created, the Monarch Waystation program, and the Bring Back the Monarch (BBTM) campaign. Both programs aim to increase the planting of milkweed and the creation of pollinator-friendly habitat. The Monarch Waystation program encourages members of the public to create pollinator-friendly garden habitats at homes, schools, businesses, nature centers and preserves. Citizens can then certify the habitat site through Monarch Watch, and display a metal sign identifying their site as a Monarch Waystation. By certifying the site, citizens can show support for monarch conservation, and displaying the Waystation sign helps educate the public about this conservation effort. The BBTM campaign is a milkweed restoration campaign, which aims to restore native milkweeds by collecting seed, identifying restoration opportunities, growing and supplying milkweed plugs for restoration efforts, and creating partnerships between organizations with the ultimate goal of increasing monarch habitat.

What else can we do to improve monarch habitat? We need to change our mowing practices. Protect our roadside native vegetation. Stop spraying herbicides, and mow less frequently or not at all. Speak up and tell city officials that we do not want them to mow or spray, and pat them on the back when they listen. Ask local plant nurseries to carry milkweed and native plants that are **pesticide-free**. Volunteer on nature preserves and at city parks—encourage management to plant milkweed. Collect milkweed seeds. Monitor a milkweed patch. Educate the public—through school programs, talks at local libraries, displays at nature centers, articles in the newspaper or on radio—by any means we have at our disposal. Realize that no one person can do it alone, we all have to pitch in—and every one of us has a voice that is valuable.

Throughout the presentation, Dr. Taylor referred to the new Imax 3D film, *Flight of the Butterflies*. He shared his experience of the film and said, “There is a shot at the end of the film where butterflies cascade off the trees in unimaginable tens of thousands, and the sky turns orange....suddenly, you become aware of the fact that much of what you are hearing, throughout the film, is the rustle of butterfly wings. How many times have you been to a place where the predominant background sound is the rustle of insect wings?”

Let’s do everything we can to make sure we keep hearing those wings.

For more information on the monarch decline, see “Decline of Monarch Butterflies Overwintering in Mexico: Is the Migratory Phenomenon at Risk?” by Brower et al. 2011 at <http://onlinelibrary.wiley.com/doi/10.1111/j.1752-4598.2011.00142.x/abstract>