MLMP Updates

An e-Newsletter of the Monarch Larva Monitoring Project

mlmp.org

December 2011 — HAPPY HOLIDAYS!

Midwest Season Summary *by Denny Brooks*

Denny is a monarch citizen scientist extraordinaire! Here's his report on his 2011 monitoring season; read more about his work on p. 3.

Another butterfly season has come to an end, the monarchs are in their winter home in central Mexico and the summer data are on the way to the proper destinations.

Storms and foul weather in the lower Midwest created a delay in the arrival of the bulk of the migrant monarchs to the Great Lakes Region. The monarch front generally arrives from the middle of June to early July, but this year it was early July. The monarchs did not recolonize and settle until mid-July; this was about two weeks later than last year.

This year I checked over 4600 milkweed plants looking for monarch eggs and caterpillars, aphids and bugs and other curious things.

Due to slow remigration my adult 'survey' numbers were much lower than previous years. Last year I surveyed 56 adults, this year 35.When I survey a butterfly, I net it, weight it, measure the wing lengths, test for parasites for MonarchHealth, and then send it back out in the wild. Starting in the last week of August, I will attach a small alpha numeric Monarch Watch tag to the wing. The whole survey process takes less than five minutes and does not harm the butterfly. Of my surveyed butterflies, the parasite rate was low; I only had 2 out of 35 infected by a micro-parasite (*Oe*).

I had a Clouded Sulpher on November 5th, the latest date for me for that species. There were also reports through the Great Lakes region of Sulphers, Cabbages, Commas, Buckeyes, Tortoiseshells, and Morning Cloaks through late October into November.

MLMP Poetry-Submit Yours!

It Came To Rest by G. Kittell

I saw a monarch yesterday --
Just briefly stopping on its way;
Its wings held up discreetly pressed
And in the sun it came to rest.

A thousand miles it has to go --
And last week stalled by days of snow;
Some futile does it seem its quest
And in the sun it came to rest.

And half the flowers last week died --
For butterflies do food provide;
But still and all it's faced the test
And in the sun it came to rest.

Its odds are infinitely high,
As late it's been too cool to fly;
For cold it is a thing unblessed
And in the sun it came to rest.

Today I saw a monarch then --
'Twas in the place it had been when;
Its wings held up discretely pressed
And in the sun it came to rest.

Migration Update

Journey North's map of Fall 2011 Overnight Roosts illustrates a major corridor through which monarchs pass during their migration to Mexico. Reports of this year's wintering population will come in February. View the map of overnight roosts and follow other monarch sightings at the Journey North website.

Eucalyptus trees to be destroyed in California for private development:

Morro Bay City Council decided the fate of 34 eucalyptus trees in California. These trees, currently home to roosting monarchs, are in danger of being cut down for private development. Read the full article in The Tribune at SanLuisObispo.com.

Monarch Student Researchers

Conserve School is located in the Northwoods of Wisconsin and is a semester school for High School students interested in environmental conservation. The school owns and has access to 1200 acres of land used to teach conservation practices to high school students. Their blog highlights Conserve students' research projects with monarch butterflies: *Read blog*

All of the K-6 students at Weaver Lake Elementary School in Maple Grove, Minnesota studied monarchs and insect ecology this fall. They had a school-wide monarch fair at which students shared their findings about monarch life cycles, camouflage, parasites, and ecology with their parents, teachers and administrators. Here's a link to You Tube videos the students made about their work.

Monarch Lab photos from the Insect Fair

Disney's Planet Challenge is a project-based learning environmental competition for classrooms across the United States. DPC teaches kids about science and conservation while empowering them to make a positive impact on their communities and planet. This article highlights a 5th grade classroom in Ohio that is working to save and enhance monarch habitat in efforts to win the Disney competition. *Read more about their project to save monarchs.*

The Monarchs in the Classroom Insect Fair was held December 3rd on the University of Minnesota campus. 300 students exhibited their research projects on monarchs and other insects, and attended educational breakout sessions to learn even more about science. To read more about this years' projects, visit monarchlab.org.

MLMP Parasitism Data

An article recently produced by Dr. Karen Oberhauser of the University of Minnesota utilizes parasitism data collected by MLMP volunteers. The article, *Tachinid flies and monarch butterflies: Citizen Scientists document parasitism patterns over broad spatial and temporal scales*, highlights MLMP volunteers that have provided significant data for the study, in particular: Deb Marcinski, Emily Toriani-Moura, Alan Williams, Donna Kemp, Brian Bockhahn, Sondra Cabell, Ilse Gebhard, Sharon Duerkop, Darlene Pinchot, Susan Payant, Suzanne Oberhauser, Diane Rock, and Charlie Cameron. Data from 130 volunteers throughout the country were used in this analysis. Without citizen scientists to report monarch density and accounts of parasitism, this magnitude of data collection would have been nearly impossible.

Oberhauser reports that even though monarch larvae can be parasitized by a tachinid fly in any instar, the daily risk is higher for second through fourth instars. Sample sizes across the egg and caterpillar stages were impressive: egg=654, L1=619, L2=417, L3=493, L4=1458, L5=3999, pupa=46 where L1=1st instar, etc.). The data also show that in the Upper Midwest there is a correlation between the rate of parasitism and the monarch population density the previous year, which suggests that this tachinid fly species may rely on monarch hosts more than we thought.

Because of the valuable data that citizen scientists provide, there is a greater understanding of monarchs and the organisms with which they interact, and therefore a greater awareness and appreciation of their incredible biology. Thank you to past, present, and future monarch monitors for your contribution to this ongoing project.

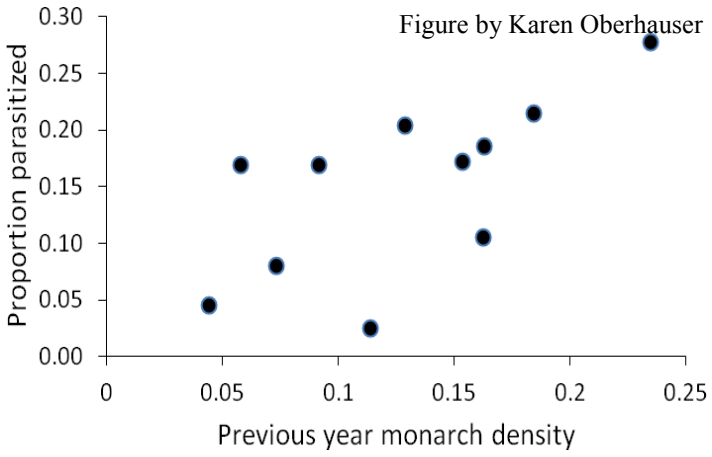
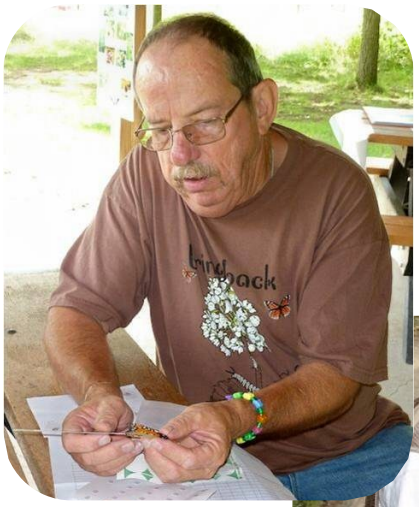


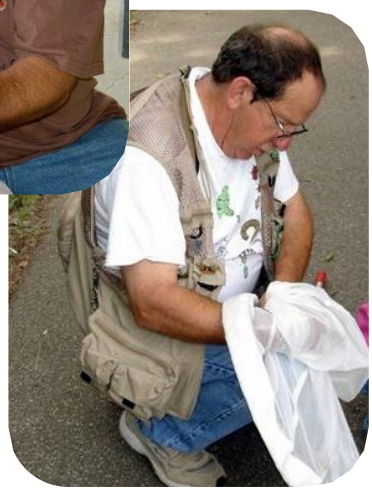
Figure by Karen Oberhauser

Volunteer Spotlight

Denny Brooks — *Midland, Michigan*

For 45 years Denny Brooks has been studying and photographing nature. In 2000-01 he became inspired by monarchs and began tagging them. In 2004 Denny attended an MLMP training session in Kalamazoo, MI. Ever since he has been a dedicated volunteer, monitoring a five acre field at the Chippewa Nature Center Arboretum. In addition to MLMP he is highly involved with other monarch programs including Monarch Watch, MonarchHealth, and Journey North. "The fascination with all the neat critters that inhabit the milkweed and how it evolves through the summer" is Denny's favorite aspect of monitoring. In addition to managing a monarch blog, he hosts 5-10 monarch outreach events each year to increase awareness and enjoys spending time with his five grandchildren who are also very involved with his monarch studies. "During the summer period, I will count approximately 120 -200 Monarchs, check 5000 milkweed plants, survey around 50 butterflies, and tag between 10-20 migrant Monarchs." It's a continuing learning experience; studies of milkweed preferences, caterpillar behavior, and the yearly variations of colonization and migration fill Denny's summers.





Tagging and netting monarchs Photos provided by Denny Brooks

Monarch Fun Fact: Monarch Genome

From The Cell: **The Monarch Butterfly Genome Yields Insights into Long-Distance Migration**

> A recent study published by researchers in Steve Reppert's lab at the University of Massachusetts Medical School in Worcester details the entire monarch genome, only the second lepidoteran genome to be unraveled (silkmoths were first). The 273 Mb genome of the migratory monarch butterfly (includes an estimated 16,866 protein-coding genes. A comparison with the silkmoth (*Bombyx mori)* genome, suggests that the Lepidoptera are the fastest evolving insect order yet examined. Some of the genes that were identified are involved in vision, central processing by the monarchs sun compass and circadian clock, regulation of juvenile hormone synthesis (critical for migration), and directional flight. An exciting finding is the fact that the juvenile hormone synthesis pathway shows unexpected differences between males and females. The monarch genome enhances our ability to better understand the genetic and molecular basis of long-distance migration…. *Read More*

Read other articles about the monarch genome: A Genome Befitting a Monarch from The Cell or Monarch Butterfly Genome Gives Clues about Slew of Migration Mysteries from Scientific American

Monarch by Margaret Righter

Monarch Monitoring Tip:

If there are other volunteers that help to monitor your site, make sure to enter their name and contact information into your profile. Log in to your site, and *Update Site Information.* In this section there is a link that states *If you have other volunteers helping you monitor this site enter their contact information here.*

Have you explored these monarch pages?

Forests for Monarchs
Monarch Butterfly Fund
The Xerces Society: Monarch Butterflies
Monarchchasers Blog: Welcome to the Milkweed Patch
Monarch Watch: Bring Back the Monarchs

Reader Feedback:

Please email us with any interesting findings or unique events that you would like to share in future e-newsletters. We would love feedback and suggestions for things you would like to read about. If you have other questions about monarchs, Ask The Expert **Contact us** at Email: info@mlmp.org or call 612-625-8304