September 2011
Monarch Update

The University of Minnesota held our annual monarch distribution from August 22 to September 12. Teachers from throughout MN came for monarch eggs and caterpillars to raise with their classes. We’re excited about the great learning that is going on in all of these classrooms.

The 3rd annual Monarch Festival was held at Lake Nokomis in Minneapolis, MN on September 10th. About 8000 visitors enjoyed the festival’s activities, and made their own personal connections with monarchs, Mexican culture, and monarch habitat. Volunteers from the UM MonarchLab and other organizations helped with a monarch tagging program that was a big hit with attendees. Dozens of groups of six people engaged in short sessions with volunteers to learn about monarchs and migration, tag a monarch, and release it in the Lake Nokomis butterfly garden.

Monarchs on whorled milkweed

Pete and Sanny Oberhauser and Jessica Miller from the Mosquito Hill Nature Center in New London Wisconsin found several monarchs (upper right) eating whorled milkweed (Asclepias verticillata).

Jessica reports that “that area of the prairie, every year (late summer/early fall), has a significant number of monarch larvae. The common milkweed has all but dried up on the property but the whorled is just blooming and still lush. Very rarely do I see eggs/larvae on the plants during the height of summer.” This year she collected 15 monarchs in one day from the whorled milkweed patch.

We are always interested in seeing photos from your monitoring season! Submit your photos here!
Exciting Findings

Little is known about how monarchs find sites for pupation. Julie Dunlap found the chrysalis pictured on the left and caterpillar on the far right on stems of bluestem grasses at the James and Anne Robinson Nature Center in Maryland (Photos by Bruce Smith). She noted that the nature center was under construction in preparation for its grand opening September 10th. The monarchs were in a rain garden in the middle of a circular driveway, far from other plants. On closer inspection, Julie found a few very small swamp milkweed plants that must have provided their larval food. The center photo was provided by Sandy Macziewski of West Central Minnesota. Luckily for the monarch, she removed it from the tire before driving away.

Though we do not know much about how monarchs choose a pupation site, we do understand what triggers the event. Insects have a pair of endocrine glands behind the brain that are responsible for producing and secreting juvenile hormone (JH). The presence of JH allows insects to molt and remain in the juvenile stage. In monarchs, the presence of this hormone allows them to go through five larval instars. Caterpillars have inter-segmental grooves that allow growth. It is the stretching of these grooves that triggers a second hormone, ecdysone, to be secreted from the prothoracic gland causing the caterpillar to molt. The higher level of JH causes the larva to molt to another larval instar. Before pupation there is a sudden drop in the level of JH that allows the caterpillar to form a pupa/chrysalis. When the transformation within the chrysalis is complete, JH is absent and a burst of ecdysone allows the adult to eclose.

Migration Update

By the middle of September last year, Journey North had 156 reports of fall roosts, whereas this year at that time there were only 43. They also report that the roosts this year have been smaller than those of last year. Last year the largest roost reported was around 10,000 monarchs and this year the largest roost so far was reported at about 1500 monarchs. To follow migration on Journey North, visit the interactive maps of monarch fall roosts and monarch sightings.

Due to the severe drought in Texas this summer, scientists are worried that the nectar source that the state usually provides for monarchs may run short this year. Monarchs need this nectar source in order to energize for the migration and store fat in order to survive the winter in Mexico.

Help monarchs energize for their journey to Mexico by preparing a butterfly buffet.
Volunteer Spotlight

Cindy Petersen, St. Anthony, Minnesota
Cindy has been a dedicated MLMP volunteer since 1998. The site that she monitors near the Minnesota Landscape Arboretum is a restored wetland of grasses, forbs, shrubs and upland trees. Cindy became a volunteer as part of an NSF grant that allowed her to work with two students in Minnesota during the summer, and Texas during the fall. She loves working with students and getting them excited about exploring nature and researching. Each summer she works with a research team of 16-24 middle school students. Cindy and her research team monitor and develop other research projects. For 3 years she has taken students to monarch overwintering sites, and this year, her research team visited Costa Rica to learn about the ecology and biodiversity of rainforests, cloud forests, dry ecosystems, oceans, and rivers. Other conservation projects that she is involved with are E-bird, feeder watch, lakeshore restoration, Monarch Watch, and Great Lakes Worm Watch. Attendees at the 2012 Monarch Biology and Conservation meeting will be able to meet Cindy and her students in person, and visit their monitoring site!

Concept of the Month: Senescence
Nearing the end of the normal life span. This term is often used to describe plants (see the photo of senescing milkweed (bottom right), but also lakes or other bodies of water in advanced stages of eutrophication. For example, a lake that is filling with accumulated aquatic vegetation, dead plant material, and sediments can be described as senescent because it is nearing extinction as a productive lake environment.

Monarch Fun Fact: Most monarchs found east of the Rocky Mountains winter in the Transverse Neovolcanic Mountain Belt in Mexico; those found west of the Rockies winter along the California coast where they roost in Eucalyptus trees, Monterey pines and Monterey cypresses. California monarchs make up about 5% of the overall worldwide monarch population. There is some interchange between the eastern and western populations, probably both over the Rockies and in Mexico.

Interesting Link: Provide critical habitat for monarchs and other wildlife! Garden For Wildlife-National Wildlife Federation

Reader Feedback: If there is anything you would like to share in the next e-Newsletter, let us know. Please email us with any interesting findings or unique events that you would like to share. We would love feedback and suggestions for things you would like to read about. Email MLMP Updates
If you have other questions about monarchs, Ask The Expert

Contact Us: Questions or comments? Contact info@monarchlab.org or call 612-624-8706. Visit our website at www.mlmp.org or www.monarchlab.org