

April, 2016

Issue 14



**MONARCH
JOINT VENTURE**



MonarchNet News
A Citizen Science Newsletter

Upcoming Events

- [Southwestern Monarchs Webinar](#), April 28, 2pm ET
- [Citizen Science Training](#), Neal Smith National Wildlife Refuge (IA) May 6-7
- [Citizen Science Training](#), Columbia MO, May 13-14
- [MLMP+ Trainings](#)
 - Hastings MI, May 19
 - Mattawan, MI, May 25
 - St. Paul MN, June 5
 - Kansas City MO, June 18



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Citizen Science Updates

White House Launches CitizenScience.Gov

- In conjunction with the 6th White House Science Fair, the White House announced the launch of CitizenScience.gov as the new hub for citizen science and crowdsourcing initiatives in the public sector. CitizenScience.gov will provide a connecting point, information, and resources for both government personnel and individuals interested in citizen science. It is a collaboration across federal agencies to scale up citizen science and crowdsourcing in the federal government. Three new resources unveiled with the launch are 1) a catalog of official government citizen science projects, 2) the Federal Citizen Science and Crowdsourcing toolkit, and 3) the Federal Community of Practice for Crowdsourcing and Citizen Science and new agency citizen science and crowdsourcing coordinators. Read more in the White House's blog post [here](#).

First Ever Citizen Science Day Took Place April 16

- The Citizen Science Association hosted the first ever Citizen Science Day on Saturday April 16th. The events included everything from a citizen science hike in New York State, to an online challenge through Notes from Nature, to nationwide BioBlitzes in National Parks. If you missed it, there are still many events posted throughout the monitoring season. You can find one near you [here](#).

A New Season to Submit Data to The Pieris Project

- The Pieris Project seeks to understand how the common cabbage white butterfly has spread across the world. You can contribute this year by sending in the cabbage white butterflies you find while monitoring. Learn more about the project [here](#).

Cheaper, Lighter Moth Trap May Make Citizen Science Projects More Affordable

- Researchers at Michigan State were frustrated with the size, expense and cumbersome nature of using traditional light traps to conduct moth research. So they developed a cheaper alternative, made of easy to access materials so that professional researchers and citizen scientists alike can have a different option. Mercury vapor black light traps (MVTs) are the traditional method of collecting moths; they use wooden frames and batteries and cost between \$200-500. The new trap is an LED funnel trap powered by 9-volt batteries. It costs just \$28.50 and is made of LED light strips, rechargeable 9-volt batteries, a Tupperware-style container, a soda bottle, poster board, tape, glue, Velcro, and twine. While the MVTs are more effective than the LED traps, if you look at cost-per-moth captured, the LED comes out on top. Researcher Joel Stewart sees this new trap as a citizen science opportunity: "This trap could allow more volunteers to contribute data because they are able to construct their own trap while not breaking the bank," he said (Entomology Today). Read more about this new development [here](#).

Discovery of Monarch Eggs and Larvae on Asclepias perennis in Winter at St. Marks National Wildlife Refuge in the Florida Panhandle

Article by citizen science volunteers Ilse Gebhard and Russ Schipper

Unlike the non-native tropical milkweed (*Asclepias curassavica*), native Florida milkweeds are known to die back in winter in northern Florida, including the Florida panhandle. As part of our surveys of overwintering monarchs (*Danaus plexippus*) in the Florida panhandle in 2012, 2013, 2015 and this past winter, we have been on the lookout for any native milkweeds that might not die back and could serve as host plants for monarch reproduction in winter.

On March 20th of this year we were shown* a population of aquatic milkweed (*Asclepias perennis*) that had not died back and some plants even had flower buds already.

A. perennis prefers freshwater wetland habitat, which this site exemplified, namely a hydric hardwood hammock with gum and magnolia trees typically dominant and cabbage palms and cypress generally present in lesser numbers. The site is approximately 2 miles from the Gulf of Mexico, protected by forest and a large expanse of coastal marsh, which likely makes the microclimate more temperate, allowing *A. perennis* to stay green in winter.

On March 22 we returned to the site and checked plants growing along the edges of the two-track bordered by shallow water for monarch eggs or larvae. Plants both on land and in the water were checked. While surveying, a moderately faded female monarch was spotted in egg laying behavior and indeed we found 5 eggs.

On March 23 we again returned to the site, this time checking plants growing in the two-track inwards from the edges and also a bit further out in the water. Two monarch late 1st instar larvae were found on plants growing in the water, one just molting to 2nd. This would put the egg-laying date back to March 15, but likely several days earlier as the temperatures had been cool previous to March 23rd. This early date would indicate reproduction by monarchs overwintering in the area and not by migrants from Mexico. Monarchs had been seen nearby** in February.

A late instar Queen (*Danaus gilippus*) larva was also found on a plant growing in the water. The plant was completely denuded, so the larva had no way to get to another plant except by water. Unless the plants with the monarch larvae grow considerably, this will be their fate as well. Finding this queen larva strongly indicates that *A. perennis* was available for egg laying approximately a month earlier, about February 23.

As with *A. curassavica*, the potential for *Ophryocystis elektroscirrha* (OE) transmission is increased when the *A. perennis* plants don't die back in winter. The confluence of suitable habitat and presence of live *A. perennis* year round is likely so rare that the much bigger threat of OE transmission comes from the ever increasing planting of the exotic *A. curassavica*.

* We thank St. Marks National Wildlife Refuge Ranger Scott Davis for taking the time to show us the site.

**Personal Communication from Elizabeth Kamphausen-Doan



Photos by Ilse Gebhard. Left: Female sunning after egg laying. Center: Monarch Egg on *A. perennis*. Right: Late 1st instar larva found on *A. perennis*.

Monarch Migration Update

Where are the monarchs now?

The northward migration is in full swing. Monarchs have made their way north from the overwintering ground of central Mexico all the way to Texas. The monarchs who spent the winter in Mexico are now feeding on wildflowers in Texas and the south central U.S. and are producing the next generation of monarchs migrating onward. This is a crucial time; they need sufficient nectar sources to continue their migration, and abundant milkweed to lay their eggs on along the way.

How can I report monarch sightings?

Report your observations to Journey North to join the international network of citizen scientists tracking the monarch migration. Find out how to report and sign up for weekly migration updates [here](#). You can stay up to date with live maps showing the monarch movement across the continent, and find educational resources about monarchs. Don't forget you can also report your first sighting of milkweed as well as your first monarch eggs and larvae. When your milkweed emerges, consider reporting weekly egg and larvae observations to the Monarch Larva Monitoring Project, www.mlmp.org.



Photo: Karen Oberhauser. Monarchs migrating near Saltillo Mexico, 2008

Citizen Science Publication Trends

Peer reviewed articles using citizen science are on the rise.

An analysis in the Journal *Plos One* studied the trends in research articles that discuss citizen science (Follett and Strezov, 2015). In 2014, there were at least 250 peer reviewed articles published using or discussing citizen science. Citizen science studies focus on everything from the methodology and theory of citizen science itself, to virtual studies where volunteers identify galaxies. Biology and conservation were the most frequently published topics using citizen science, with birds and terrestrial invertebrates (butterflies consisting of 80% of these) the top two subjects.

With the launch of the new Journal of Citizen Science coming up in May 2016 (and there is a monarch citizen science paper in the first issue!), it is evident that citizen science research is contributing more and more to peer reviewed publications. Follett and Strezov (2015) concluded that as citizen science has risen in peer reviewed research, it has gained a wider use and acceptance in the scientific community. The wide variety of topics that published about citizen science show how widely applicable the approach is to many different disciplines. Based on this “growth in published output and the ability to learn from past experience, it is expected that research using the citizen science method will further increase and expand to new areas” (Follett and Strezov, 2015).

References

- Entomology Today (March 2 2016) A Cheaper, Lighter Moth Trap May Make Citizen Science Projects More Affordable.
<https://entomologytoday.org/2016/03/02/a-cheaper-lighter-moth-trap-may-make-citizen-science-projects-more-affordable/>
 Follett R, Strezov V (2015) An Analysis of Citizen Science Based Research: Usage and Publication Patterns. PLoS ONE 10(11): e0143687. doi:10.1371/journal.pone.0143687

We want to hear from you!

Are you a butterfly citizen scientist with a story, photos, or artwork to share? Would you like to nominate a volunteer or program for recognition in the newsletter? Write to us at mjv@umn.edu with your ideas.

Help us spread the word. Send this newsletter to friends who may be interested, and encourage them to sign up for our newsletter on the MonarchNet website, <http://www.monarchnet.org/newsletters>