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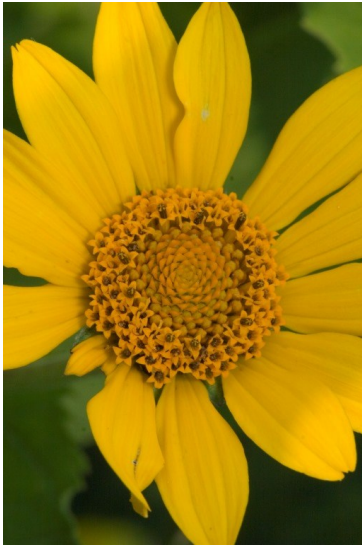
Issue 12



MONARCH
JOINT VENTURE



MonarchNet News
A Citizen Science Newsletter



Top: Richard Hicks

Bottom: Black Swallowtail, Bill Johnson



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Citizen Science Updates

Research on Monarch Parasitism Aided by Citizen Scientists

- New research from scientists at the University of Minnesota's Monarch Lab and Oklahoma State University describes the interactions between monarchs and a species of wasp that parasitizes their pupae called *Pteromalus cassotis*. In addition to finding highly variable rates of parasitism, the authors provide the first documentation of the parasitoid species in monarchs since 1888! Citizen scientists from Monarch Health and the Monarch Larva Monitoring Project provided specimens, photographs, and observational data for this study, which you can read [here](#).



Pteromalus cassotis on monarch pupa. Carl Stenoién.

New Book Introduces Citizen Science to Sasquatch Fans

- The Sasquatch Seeker's Field Manual: Using Citizen Science to Uncover North America's Most Elusive Creature, by David Gordon, has been released. The book describes both citizen science and the history of reported Sasquatch sightings, and then introduces the protocols and evidence that would be needed for a citizen science project to document the existence of the legendary creature or any other organism. While some might question the value of such a project, this book takes advantage of an intriguing subject to introduce readers to scientific research concepts like keeping a field notebook, documenting and preserving specimens, and publishing scientific results. It's a fun resource to introduce people to the process of science, and if you read it closely you'll find several references to well-known lepidopterist Dr. Bob Pyle.

Essay Examines Difficulties in Tracking Citizen Science Outcomes

- Dr. Caren Cooper, with the North Carolina Museum of Natural Sciences, has written an interesting essay entitled *What's not counted when we count "citizen science"?* She discusses the many different terms used to describe citizen science (e.g. volunteer monitoring, public participation in scientific research) and how they can lead people to overlook benefits from citizen science when they aren't familiar with or aren't looking for another term. The essay also covers the importance of tracking non-research benefits of citizen science, such as science literacy and community capacity.

Successful Year for Monarch Health

- 2015 has been a great year for Monarch Health. In addition to the successful funding campaign described in our last newsletter, project volunteers collected samples from over 4,000 monarchs to be tested for parasites, and project scientists published two research studies on results from previous years.

Researcher Spotlight: Gayle Steffy, by Eva Lewandowski

This article was originally published on the [SciStarter blog](#). If you are interested in republishing this post, please contact info@scistarter.com.

Gayle Steffy's fascination with butterflies started when she was thirteen. She found her first monarch caterpillar, brought it home and raised it to adulthood. She's been hooked ever since, collecting data on monarchs years before joining any of the established monarch citizen science projects. Despite her early interest, which eventually led her to acquire a BS in Environmental Studies, she didn't initially envision where her work would take her. "I didn't have a specific goal at the start - I just wanted to record everything I could about each monarch I caught, figuring I could look at it all later and see what it all meant," she said.

Beginning in 1992, she caught, tagged, and released monarch butterflies in Pennsylvania during their annual migration to Mexico, and then recorded if any of the monarchs were later found at their Mexican overwintering sites. After 18 years of collecting migration data, Steffy accomplished something that not many citizen scientists have done before. In August this year, she [published](#) her work in a special monarch-themed issue of the *Annals of the Entomological Society of America*, a well-respected scholarly journal.



Citizen scientists are the backbone of many ecological research studies. They collect data frequent and geographically widespread data, and they often share projects results informally with others and recruit new volunteers to a project. However, there are some parts of scientific research with which citizen scientists seldom become involved –things like designing a project, conducting statistical analyses, and writing up research results for publication in a scientific journal. It's even rarer that a citizen scientist undertakes all of these roles completely on their own, but that's exactly what Gayle Steffy did.

Steffy's results have intrigued professional scientists and members of the public alike. She found that monarchs that migrated earlier in the fall and those that used inland routes to do so were more likely to be recovered in Mexico, indicating a successful migration. Additionally, she found that monarchs that she collected from the wild as eggs of larvae and raised indoors were smaller and less likely to successfully migrate than wild monarchs that matured outdoors. This result has been of particular interest to monarch enthusiasts and scientists, as many people across the United States capture and rear monarchs inside for education or enjoyment.

What stories would you like to see in the MonarchNet News? Email us at monarchs@monarchjointventure.org.

The work that Steffy did was completely independent and not associated with any project, but she has been a long-time contributor to many citizen science projects. She began joining monarch citizen science projects because she "realized that the only way we were going to figure out monarch migration was to pool a huge amount of data, and I wanted to be part of that," she said. Since 1997, volunteered with the [Monarch Larva Monitoring Project](#), which tracks the density of monarch larvae across the country and compiles data on rates of monarch parasitism, and in 1998 she began tagging monarchs for Monarch Watch.. Over the years, she has also volunteered with a project in New Jersey that tracks the fall monarch migration, called the Cape May Monarch Monitoring Project. And when a new citizen science project called [Monarch Health](#) began studying a common monarch disease in 2006, Steffy naturally volunteered.

The contacts she made through her participation in monarch citizen science proved useful when publishing her own research, as she was able to seek advice from professional scientists that she had met over the years. While their support was helpful, she still encountered a number of barriers throughout the process of analyzing and publishing her results as a citizen scientist. From finding time outside her fulltime job to work on the project, to accessing statistical software and costly journal articles for background research, Steffy had to overcome issues that aren't normally present for researchers associated with a formal institution. "The publishing process was extremely difficult for me," she said. "The system is definitely set up for people in academia. In fact, when I submitted my paper, the school and program you were affiliated with were mandatory fields. I had to write "see cover letter" in the blank. I wasn't at all sure if they would take me seriously."

However, her efforts were taken seriously and her hard work eventually paid off when her results were finally published.. Steffy hopes that she'll serve as an inspiration for other citizen scientists who want to follow in her footsteps. When asked what advice she might have for those who would like to conduct their own research and publish the results, she urged others like her to teach themselves the skills they need to do research, and said, "Just go for it! You don't have to wait for a job doing what you love, you can do it anyway."

Monarch Citizen Science Data Online

Many citizen scientists want to view the data they've collected, or that of their peers, but they don't always know where to look for it. A number of monarch citizen science projects post their data online, making it accessible to citizen scientists and the rest of the public. Check out these websites to view volunteer-collected data about monarchs.

- [Monarch Larva Monitoring Project:](#)

The raw data of all MLMP volunteers who monitor for monarch eggs and larvae are available online as soon as they are entered. You can view the data from an individual monitoring site or from an entire state at once. Results are presented as graphs showing the number of eggs and larvae per milkweed plant monitored.

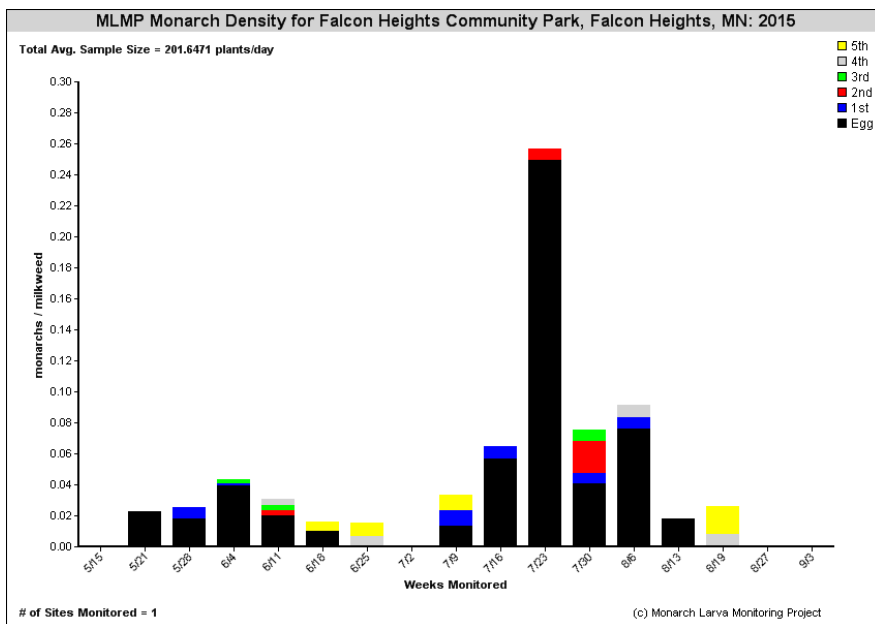
- [Journey North:](#) When citizen scientists submit sightings of monarchs and milkweed, the data are shown on static and animated maps. You can click on individual observation points on the map to bring up sighting details like date, location, weather, or notes on behavior.

- [Western Monarch Thanksgiving](#)

[Count:](#) Citizen scientists submit data on the number of monarchs present at California overwintering sites, and data from 1997 to the present are available to download in a spreadsheet. The project also provides graphs illustrating the estimated size of the total western monarch population over time.

- [Cape May Monarch Monitoring Project:](#) Since 1992, volunteers have been conducting weekly fall monarch censuses at Cape May Point, New Jersey, and the data are posted in a table showing monarchs seen per hour.

- [MonarchNet:](#) As a network of North American monarch monitoring programs, MonarchNet hosts data from multiple projects. With the site's data tool, you can generate graphs of trends in the monarch population from several projects at the same time.



Above: Graph of MLMP monitoring data generated from MLMP website.

Below: Collecting Data. Wendy Caldwell



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 monarchs@monarchjointventure.org with what you would like to see in the newsletter.

Help us spread the word. Send this newsletter to friends who may be interested, and encourage them to “Get Updates” under News & Events on the MJV website at monarchjointventure.org/news-events/get-updates.