April, 2015

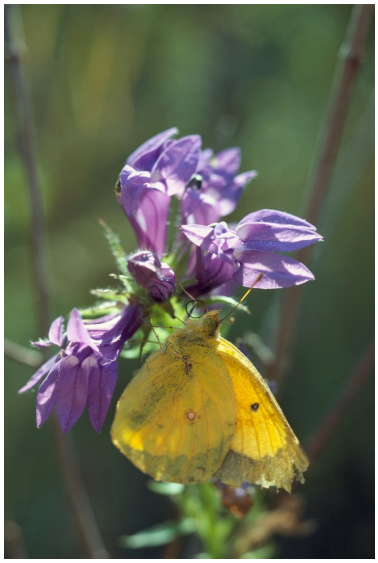
Issue 8

MONARCH JOINT VENTURE

MonarchNet News
A Citizen Science Newsletter

Upcoming Events

- Monarch Citizen Science Webinar with the Monarch Joint Venture, April 30, 3-4:30pm EST
- MLMP Training in Cibolo, Texas, May 2
- Monarch Butterfly Monitoring Workshop in Boise, Idaho, June 19-20



Common Sulphur. Photo: USFWS

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Citizen Science Updates

Citizen Scientists Produce High Quality Data

- A new review paper from Eva Lewandowski and Hannah Specht, at the University of Minnesota, explores the quality of the data collected by citizen scientists. The authors analyzed over 70 studies that had examined the quality of ecological citizen science data, and found the data were consistently deemed to be of high enough quality to be used in scientific research and management decisions. Taken together, the papers that evaluated the quality of both citizen science and professional data did not indicate a clear difference in the quality of volunteers and professional scientists. The hard work and dedication of citizen science volunteers is resulting in useful, valuable data!

Citizen Scientists Make Important Contributions to Monarch Research

- Leslie Ries and Karen Oberhauser recently published a study of the scientific contributions of monarch citizen science projects in the journal Bioscience. Since the first monarch citizen science program was launched in the 1950s, volunteers have made fundamental contributions to our knowledge of monarch biology. Of 503 monarch-focused research publications in which new results were presented from 1940 to 2014, 17% of the total, and almost two thirds of the papers based on field studies used citizen science data. The full paper is available for download here.

Read the Latest #CitSciChat Online

- Did you miss March's Spring-themed #CitSciChat on Twitter? Journey North and the Monarch Larva Monitoring Project were among the panelists, and the discussion included research discoveries, participant experiences, and connection to nature. Moderator Caren Cooper has "storified" the Twitter discussion, meaning she's compiled everyone's tweets into an easy-to-follow story, which you can read here.

Integrating Citizen Science into Your Education Program

- Are you an educator who wants to incorporate citizen science into your classroom or programming? The National Ecological Observation Network has created the Citizen Science Academy. You can take online courses on topics like "Introduction to Citizen Science" and "Using Project Budburst." The courses are free, or you can pay a small fee if you wish to receive continuing education credits.

SciGirls Focuses on Citizen Science

- The third season of the hit PBS show SciGirls is focusing entirely on citizen science! The show, which encourages girls to become involved in science and engineering, will begin airing its latest season this month, and one entire episode will depict girls participating in the Monarch Larva Monitoring Project. You can view a preview of the season here, and check your local listings to find out when the show airs on your local PBS station.

Citizen Science Opportunities

Most of our readers are familiar with the large monarch citizen science projects: tracking migration with Journey North, tagging adults with Monarch Watch, checking for disease with Monarch Health, and monitoring milkweeds for eggs and larvae with the Monarch Larva Monitoring Project. Whether you're engaged in one of those projects, a local monarch program, or a butterfly count like NABA, we want to let you know about a few other fun projects that you might enjoy.

In our last newsletter, we told you about scientists at the College of William and Mary seeking samples of milkweed, milkweed bugs, and milkweed beetles. Here are a few more projects that can be done alongside your other citizen science activities; they're a great way to make an even bigger contribution to science!

- **Unexpected Cycnia Observations**- Scientists from Oklahoma State University are interested in learning more about the range and habitat requirements of the unexpected cycnia moth (*Cycnia inopinatus)*, a relatively rare species that lays its eggs on milkweed. If you see an unexpected cycnia caterpillar while monitoring they would like to hear from you. Learn more here.

- **The Pieris Project**- The cabbage white butterfly (*Pieris rapae*) has spread throughout much of the world and can be found in many very different ecosystems. The Pieris Project wants to analyze the genetic code of the cabbage white to gain insight into how other species might adapt to environmental and ecological changes brought about by climate change. They are looking for cabbage white specimens from across the country and globe. Read more about the project, and how you can participate, on their website: www.pierisproject.org.

- **Notes from Nature**- This online project is perfect for a rainy day. Museums across the world have millions of preserved specimens and handwritten records from the past two centuries that need to be entered into computer systems. The records are digitally scanned and made available on the Notes from Nature website, where it is up to citizen scientists to carefully transcribe all the information they contain. Some records are typed, but many are hand-written; some contain only text, while others are accompanied by digital images of pressed flowers or pinned insect specimens. You can choose to focus on bird registers, herbarium specimens, fungal records, or insect collections, or you can switch back and forth between the categories. The more records that are transcribed, the more scientists and the public have access to information on species variation and distributions, and how those characteristics have changed over time.

Unexpected cycnia larvae. Photos: Dr. Kristen Baum

MLMP on Twitter!

Follow the Monarch Larva Monitoring Project **@MLMPCitSci** for information and updates on MLMP, monarchs, and citizen science.

Crowd Funding

There seems to be a natural link between citizen science, which relies on members of the public to conduct research, and crowd funding, which relies on members of the public to fund a business or project. Like citizen science, crowd funding has exploded in popularity in just the past few years, due in large part to the ubiquity of the internet in our day-to-day lives. There are dozens of popular crowdfunding websites where organizations or individuals can describe their projects and ask for donations from the public to fund them.

Crowd funding is unique because it relies on large numbers of donors, sometimes tens or hundreds of thousands, to support a project, and in many cases those donors have no prior relationship with the projects they choose to sponsor. Often donations are just a few dollars, with projects relying on the large number of donors rather than the size of the donations. Furthermore, many crowdfunding sites use an all-or-nothing funding strategy, meaning that projects must set funding goals, and supporters must only pay if that goal is met. When the goal isn't met, the project receives no money. This strategy is appealing to many donors because it means they aren't spending money on a project that simply doesn't receive enough donations to operate or complete its mission. Like with most fundraising, projects on many crowd funding websites incentivize donations by offering small gifts or rewards to donors, with big donors sometimes receiving the opportunity to have a hands-on role in the project.

Crowd funding hasn't become a substantial part of citizen science just yet, but there have been a number of successfully crowd funded citizen science initiatives. Considering the growth of both fields, it's likely that we will see more crowd funded citizen science projects in the future. Below are a few of the websites that seemed primed to host citizen science projects in search of crowdfunding.

- **Kickstarter.com-** Kickstarter is arguably the largest and most successful crowdfunding site, and it is home to "creative projects" that are all-or-nothing funded. It doesn't have a large contingent of science projects; instead, the site has funded tens of thousands of music, film, game, and technology projects. Some of these campaigns have received millions of dollars in donations, such as the endeavor to provide free access to Reading Rainbow to schoolchildren, which brought in more than five millions dollars from a total of over 100,000 supporters. There have been a few funded citizen science projects, including Yellowstone Wolf, which tracks wolves at Yellowstone through visitors' photographs.

- **Indiegogo.com**- Indiegogo isn't a science-specific fundraising website, but they have hosted successfully funded citizen science projects, including local coral reef surveys and an initiative to gather information on Caribbean birds from local people. The site is unique because it allows projects to choose between fixed and flexible funding. Fixed funding is the same as all-or-nothing funding, while flexible funding allows unsuccessful projects to keep a portion, but not all of their pledged income.

- **Rockethub.com-** This is another site that supports projects of all types, including some cool citizen science initiatives. One funded citizen science project examines nocturnal pollination by moths, while another seeks to study the genetics of red foxes in Colorado. Rockethub funding is not all-or-nothing, so even projects that don't meet their funding goal can receive support.

- **Experiment.com**- This site specializes in science projects, making it a good fit for citizen science. The funding is all-or-nothing, and backers do not receive any sort of gift or reward after they contribute, just the joy of having supported scientific research. Successfully funded citizen science projects on experiment.com have ranged from studying pollinator services in community gardens to using DNA testing to identify species in Alaska, as well as the Pieris Project described on page 2.

Pieris rapae. Photo: USFWS

We want to hear from you!

Are you are a butterfly citizen scientist with a story or a photo 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.