Greetings!

We’re sending this newsletter during a time of profound change and upheaval, but the natural world is continuing apace. There have been monarchs in Wisconsin since May 7, right on time, and we are now seeing third instars at our two UW-Madison Arboretum MLMP monitoring sites. The Journey North first sightings map documents the movement of monarchs well into their summer range.

But events of the past weeks and months make it clear that things in our human world will not, and in many ways should not, return to “normal”. First, we are experiencing a global pandemic, and this will affect the way that we carry out our day to day business for what is likely to be a long time. We’ve included some tips on monitoring safely during this time of physical distancing in this newsletter (see page 4).

Second, two weeks ago we witnessed the brutal and unnecessary killing of George Floyd in Minneapolis, where I lived for over 30 years. I am struggling to figure out how I can be an active participant in creating a more just world. That will mean working even harder to ensure that the Arboretum provides a welcoming atmosphere for everyone, and to bring the healing and nurturing power of the natural world to diverse audiences. Some days, the best I can do is show a family a tiny monarch caterpillar on a milkweed plant; in this time of social distancing that’s not as easy as it used to be, but it can be done. It’s something….

From my home “office”, I wish you all the best. Jessica Ross has left her role as the Arboretum citizen science coordinator, and I’ve taken over coordination of the MLMP. It is wonderful to be the voice at the end of the info@mlmp.org email again, to be back in close touch with so many of you, and to work with my MLMP and monarch conservation colleagues at the Monarch Joint Venture. Please feel free to write—I’ll answer. And please, be safe, inclusive, and well. I hope that you take time celebrate the wonder that monarchs bring to all of us, and help us to understand and help them by being a monarch citizen scientist. Thank you for your contributions to the MLMP!

Sincerely, Karen Oberhauser

Virtual Training June 20

Celebrate the beginning of summer with an MLMP workshop! In this two-hour, online training, participants will learn about monarch biology and MLMP protocols and findings, practice data entry protocols, and prepare to monitor monarchs at the Arboretum or in their communities. The training will 1) be appropriate for people new to monarch monitoring, 2) be a good refresher for current volunteers, 3) include time to ask questions, and 4) be relevant for people who just want to learn more about monarchs. MLMP is a national citizen science project jointly run by the UW-Madison Arboretum and the Monarch Joint Venture. Instructor: Karen Oberhauser, UW-Madison Arboretum director and MLMP founder and coordinator.

Saturday June 20, 9 a.m.–11 a.m. Central Time

To register, fill out this form: MLMP monitoring (if the link doesn’t work, please cut and paste this URL into your browser: https://go.wisc.edurat244). You will be sent a link to the virtual training and relevant materials in advance of the event.

Freshly-eclosed monarch. Photo: Long-time MLMP volunteer, Denny Brooks of MI
New Monarch Research

The MLMP is jointly coordinated by the UW-Madison Arboretum and the Monarch Joint Venture. This month, we’re telling the story of some of the exciting research being conducted by MJV staff and summer interns.

Monitoring Milkweed with Drones: 
By Kyle Kasten, Monarch Joint Venture

Researchers, conservation workers, and precision agriculture businesses are collaborating to quantify and identify monarch butterfly habitat

Effective monarch conservation starts with having the best available knowledge of monarch habitat. Getting a sense of milkweed distribution on the landscape helps conservationists decide where milkweed needs to be planted, and good data can also help us understand the effectiveness of restorations. Most milkweed monitoring is done by on-the-ground researchers counting individual plants (see next page for an example). However, this process can be time-consuming and expensive. An area as large as a football field can take over two hours to survey comprehensively. Remote sensing technologies, like drones, could offer a way to collect data faster and over a broader area. The same football field could feasibly be sampled in as little as 10 minutes with a drone.

Using drone technology effectively requires the right technology and specific skills. That is why the MJV has partnered with Sentera, a Minnesota-based company that has developed cutting-edge vegetation sampling technologies primarily used for agricultural surveys. With Sentera, we are working to develop a new approach to milkweed-monitoring.

The project will go through several phases, starting with machine learning. In this stage, the goal is to teach a computer to recognize when milkweed appears in an image. Using images collected by the drone, Sentera will then train an artificial intelligence software to recognize and count milkweed plants in images. After over 600,000 images the software will recognize what is a milkweed plant and what is not. We can then compare these results to the results of on-the-ground milkweed surveys to determine the accuracy of the software.

If you would like to know more about this project, or if you have any questions, please contact Kyle Kasten at kkasten@monarchjointventure.org.
New Monarch Research: Continued

Assessing the Success of Habitat Restoration:
By Laura Lukens, Monarch Joint Venture

The Monarch Joint Venture (MJV) and the National Fish and Wildlife Foundation (NFWF) are working together to evaluate habitat restoration and enhancement projects funded through NFWF’s Monarch Butterfly and Pollinators Conservation Fund. Since 2015, this fund has supported the enhancement and restoration of about 300,000 acres across the US.

Much of the native grassland habitat that used to cover the central US landscape has been converted to cropland or developed in other ways. Monarchs, pollinators, grassland birds, and other species relying on those habitats have faced significant losses, enough to cause substantial population declines. Scientists estimate that we have lost 1.3-1.6 billion stems of milkweed in the Eastern US during the last two decades. In order to bring the Eastern monarch population back to a sustainable size, we will need to add milkweeds (as well as nectar sources) back to the landscape.

While habitat restoration can increase milkweeds and nectar availability, it is essential that we investigate how seeding and management practices affect habitat quality. Understanding the outcomes of our work will help to ensure that we are spending our conservation dollars most efficiently and effectively.

Using Integrated Monarch Monitoring Program (IMMP) protocols, the MJV is surveying restored sites across the US to assess the quality of monarch habitat focusing on milkweeds and flowering plants. Our research crews are also monitoring milkweeds for monarch eggs and caterpillars and conducting surveys for adult monarchs. They will collect data from May through September, monitoring a total of 50-60 sites across 10 states (MN, WI, IA, IL, ND, SD, OH, IN, MO, NE). Additionally, the data will feed into a larger database to help understand habitat availability, monarch distribution, and conservation practices on a national scale.

Ultimately, this project will help us better understand the impacts of conservation funding and outcomes of restoration processes. We will be able to report the number of milkweed stems added to the landscape, the richness and abundance of flowering plants, and the number of monarchs observed using each site. We will also be able to explore how seed mix design, site preparation, and management (such as mowing, burning, and herbicide use) have impacted the state of habitat at each site.
MLMP Monitoring in the Time of COVID

By Gail Morris (Coordinator, Southwest Monarch Study) and Karen Oberhauser

Being outdoors, connecting with nature, and being involved with a positive force for good is important to our emotional well-being at all times, and especially during the current pandemic. Monitoring monarchs can be done in ways that respect human health and the environment, whether you are in your own backyard or a public area. As always, if you aren’t monitoring on your own land, make sure that you follow all guidelines for accessing other land safely, especially during this time of physical distancing (see information on choosing monitoring sites here). If monitoring requires permission to access a public site, call in advance to be certain that the site is not closed to visitors this year.

- Always follow your local Board of Health and CDC advisories and regulations. Check for updates regularly to ensure your compliance as the recommendations are changing rapidly. When in doubt, always err on the side of safety.

- For your safety and for the safety of the community where you will be monitoring, limit travel to decrease the likelihood of transmitting COVID-19 during this time of pandemic community spread.

- If you or any member of your household have COVID-19 symptoms, do not go in the field to monitor monarchs.

- Participate and review on-line monitoring training and data collection available on our website prior to your trip.

- Carpool only with members of your own household.

- Be prepared for "leave no trace" personal care while in the field (e.g. restrooms may be closed). For more details, check here.

- Have a plan for parking, restrooms, meals, etc. that allows you to practice social distancing. If your trip includes a meal, eat outside with a minimum six feet distance between people.

- Avoid contact with the public to explain what you are doing. If you have traveled to a site, consider leaving a laminated information sheet in your car window explaining your activity.

- Discuss any monitoring concerns with us prior to your trip: info@mlmp.org

MLMP monitoring can be done safely alone, or with household members. Photo of MJV Education Coordinator Katie-Lyn Bunney by Karen Oberhauser.

Have a monarch story or art to share? We’d love to hear from you!
info@mlmp.org | www.mlmp.org
Karen Oberhauser | UW-Madison Arboreum | 1207 Seminole Hwy | Madison WI 53711