MLMP Updates

An e-newsletter of the Monarch Larva Monitoring Project

MLMP MARKS 30 YEARS

By: Karen Oberhauser

2025 marked the 30th year of Monarch Larva Monarch Project data collection! The project began in 1996 in the University of Minnesota Monarch Lab. That year, graduate students Michelle Prysby, Sonia Altizer, and Liz Goehring and I, along with undergraduate assistants, began monitoring former farmland in western Wisconsin. The first year, we monitored an average of 903 plants a week, on old fields with high densities of common milkweed. We established a protocol that would allow week to week and year to year comparisons. In 1997, Michelle turned that protocol in a citizen science effort and recruited volunteers from the relatively new Monarch Watch and Journey North listservs, and 19 sites—in FL, ME, MI, MN, PA, Ontario, RI, TX, VA, and WI—joined the roster. Of the original 1997 volunteers, three (or their family members) are still monitoring sites in Stonington MI (Susan Jamison), Manhein Township PA (Gayle Steffy), and Pella WI (Pete and Sanny Oberhauser). We added the monarch survival protocol (Activity 3) in 1999.

Michelle's 2001 MS thesis and her 2004 paper in *The Monarch Butterfly: Biology and Conservation* provide summaries of how the program started and early findings.

Over the last 30 years, MLMP volunteers in 48 US states (we still need volunteers in New Mexico, and there aren't monarchs in Alaska), five Canadian provinces, and one Mexico state have helped us keep a finger on the pulse of spring, summer, fall, and winter breeding monarchs. Thanks for being part of our team!

Above photo: Early MLMP team members Karen Oberhauser and Liz Goehring (left and center) with Madison volunteer Beth Whitaker (right) in summer 2025.

CONTENTS

Monarch Population Update

How did monarchs fare in summer 2025?

Monarch numbers were relatively high throughout their main northern breeding range in July and August, at least compared to the last several years. Promising July "density humps" of eggs and larvae in most of the Upper Midwest continued into August, with fairly good numbers even past mid-August. All of the eggs and larvae we see after about the end of July will become migratory adults (if they survive), so we sent off relatively good numbers to the south. Figure 1 compares 2025 (left graph) and 2024 (right graph) egg and larva densities in Wisconsin. For more detailed comparisons across years and in your own state see the results page on the MLMP website.

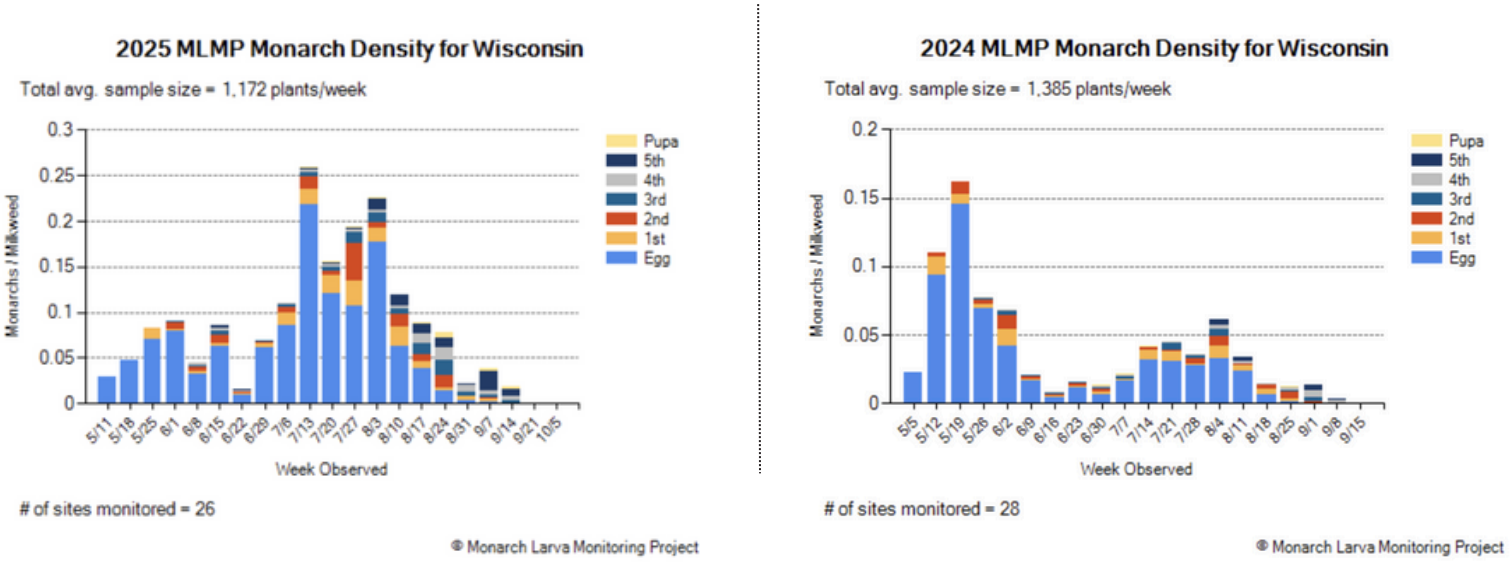

Figure 1. Wisconsin MLMP data from 2025 and 2024. Note the large increase in per plant density of monarch eggs and larvae from June to July in 2025. 2025 dips during the weeks of June 8 and July 20 reflect rainy conditions, when monarchs weren't laying many eggs. Note the bigger increase from the first to the second "humps" in 2025, reflecting more population growth than we saw in 2024.

As migratory adults left their northern breeding range in August through September (and even into October, for those September larvae on the graphs) they faced some dry conditions in the south, although conditions were better than in 2024. Figure 2, from the U.S. Drought Monitor team, shows the 2025 and 2024 drought maps. We'll keep you updated on final reports of the numbers from Mexico; given higher production in the north and slightly better migratory conditions, we're hoping for good news.

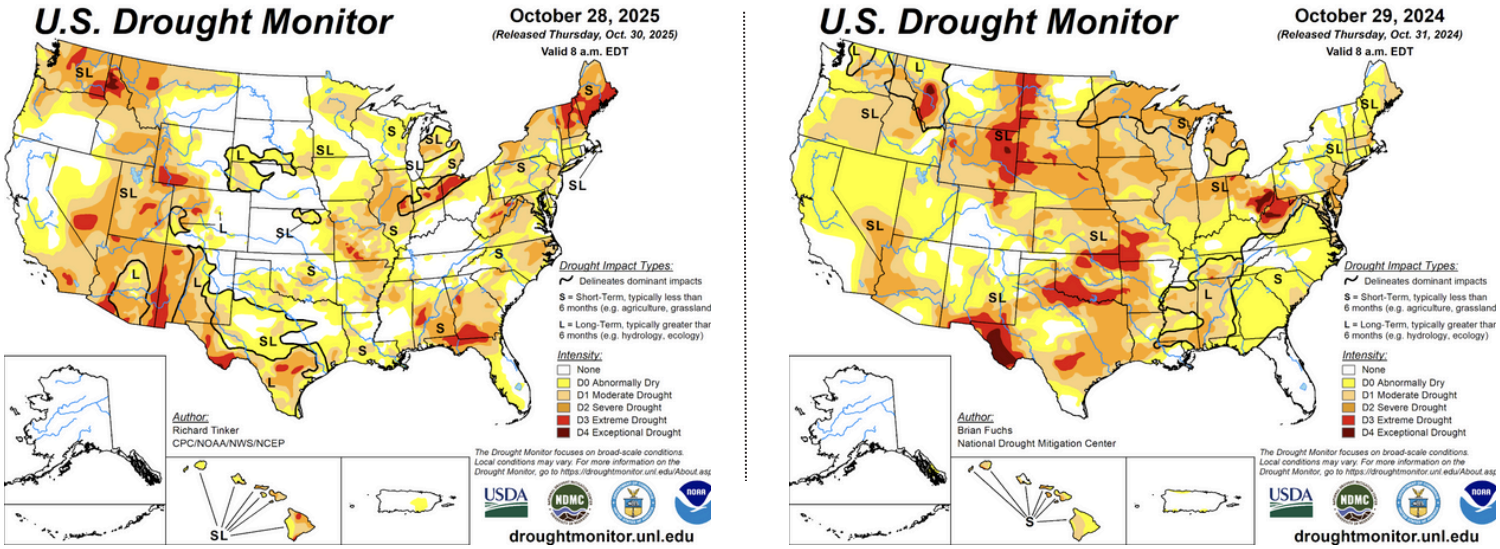

Figure 2. NOAA drought maps from 2025 (left) and 2024 (right). Downloaded from droughtmonitor.unl.edu/. Note the lessening of drought conditions throughout the range of the Eastern Migratory Monarch Population.

MLMP Volunteer Opts out of Mosquito Treatments

MLMP Volunteer Allison Hausladen Uses Art and Advocacy to Preserve Monarchs

Allison Hausladen lives, gardens, and creates amazing art in suburban Chicago. Raising monarchs a few years ago led to successfully getting her subdivision to stop spraying her yard with insecticides. Here's Allison's story, in her own words.

Raising a few monarchs three summers ago resulted in an informal study of the negative effects of truck-based mosquito adulticiding treatments on monarchs. I am happy to say that two summers later, my yard is no longer sprayed with these insecticides, the ecological benefits have been obvious, and anyone in my township can opt out as well.

I became an MLMP volunteer in 2024, monitoring my 1-acre yard in a suburban Chicago subdivision. Our yard is nestled within a larger reserve of protected lands which includes nature preserves, a marsh, an ecological housing development, and an organic farm.

I was inspired to raise monarchs when I spotted a caterpillar crawling to spent irises and then building her chrysalis by our front door. It was magical. When some of the monarchs I was raising got sick after I gave them new leaves, a quick google search told me this was likely due to pesticide poisoning, and I realized our township had just sprayed for mosquitoes.

In the Prairie. From dusk to dawn, the monarchs pair. The courtship looked like a fight over flowers, but he pursued her, not the flowers. Their children will fly from Illinois to Mexico and, hopefully, against all odds, find their own mates in spring. From Allison Hausladen's Big Impact Exhibit.

Allison Hausladen, Continued...

As a librarian, I can't help but research things. I learned that pyrethroids are broad-spectrum insecticides that can't just target mosquitoes, and spraying at night doesn't help because many insects are active at night, daytime pollinators often sleep on plants, and the residue impacts caterpillars as they eat the plants. In fact, these insecticides are used in agriculture because of their broad killing capabilities. Despite the clear danger to pollinators, pyrethroids are sprayed when flowers are blooming if a disease vector is present, and mosquitoes carrying West Nile virus are regularly found in my county. I realized that MLMP data could help me document the impacts of mosquito abatement in my yard.

Two years after presenting my findings to my township, and consistently advocating and questioning, my yard was skipped during spraying and the biodiversity losses I experienced that first summer did not happen this summer.

This is a reminder to speak up for what you love. Find out if mosquito spraying happens in your yard without your knowledge by googling your municipality or township's name and "mosquito abatement." Then call and ask if you can be added to a notification list, what's being sprayed, and if you can opt-out. And advocate for other means of mosquito control. Some municipalities don't spray at all, but just use larvicides, which can specifically target mosquitoes and their close relatives. Some allow opt-out and some do not. And if mosquitoes are bad in your yard, I had good luck using the "Mosquito bucket of doom" this year — it can go hand in hand with opting out of spraying.

This compromise of skipping yards with high ecological value so they don't inadvertently become ecological traps feels promising. It helps balance public and ecological health concerns. Remember, it's not enough to plant the plants, we have to protect them from pesticides, too.

The Common Milkweed and the Threatened Monarch Caterpillar (July). Outsmarting and outlucking ants, earwigs, spiders, and pesticides to reach her 5th instar skin, the monarch looks up at the human gasping in delight, then munches the leaves of the only plant she can digest, the once-common milkweed. With wings, she'll sip nectar, mate, and lay eggs on every milkweed she finds. From Allison Hausladen's Tiny Remnants Exhibit.

Allison's Big Impact exhibit (with a link to ways you can help at the bottom of the page) https://www.allisonhausladen.com/big-impact
Information about Allison's Silent Prairie painting and opting out of mosquito spraying: https://www.allisonhausladen.com/work/silent-prairie

MLMP: Team Efforts

Many organizations—Nature Centers, Arboreta, Master Naturalist Programs, and others—throughout the monarch breeding range train and enlist MLMP volunteers. These are win-win-win partnerships; organizations gain information and excellent volunteer programming opportunities, volunteers have access to monitoring site as they learn more about the natural world, and monarchs benefit from increased knowledge that informs science-based conservation. If you volunteer or work with a nature-based organization and would like more information about ways to incorporate the MLMP into your programming or if you'd like to become a regional MLMP hub, please let us know! Here are a few examples:

Team Efforts, Continued

North Carolina Arboretum in Asheville NC: Lauren Lampley and a Big Team

Beginning in 2015, volunteers at the North Carolina Arboretum (NCA) have been monitoring monarchs. Lauren Lampley, NCA's Adult Education Coordinator, oversees the program, but some of the volunteers have been doing this longer than she's been there. Lauren hosts an orientation session once the milkweed comes up each spring to go over the details of the project, especially for new volunteers, but is otherwise mostly hands off with data collection.

The MLMP is one of five Community Science Projects that Lauren manages on property. Lauren and veteran volunteers lead guided sessions with the new volunteers each spring to ensure data consistency. The 2025 NCA team included Joyce and Stan Schmidt, Becky and Kyle Hoyt, Judy Rolloff, Helen Johnson, and Kim Braham.

Dinosaur Monitoring Site in Dinosaur Valley State Park (Glen Rose TX): Sara Paulsen takes the reins

Most states have volunteer training initiatives that combine classroom and fieldwork focused on statewide ecology and environmental stewardship.

Photo: Dinosaur Monitoring site and visitors in Glen Rose TX. Photo by Sara Paulsen.

After 40 or so hours of basic training, participants tally their volunteer hours and engage in ongoing advanced training These "Master Naturalist" programs provide great opportunities for bringing more sites and people into the MLMP network.

Sara Paulsen is a member of the Rio Brazos Chapter of the Texas Master Naturalist program. Sara notes that it has been her "joy to be an advocate for the monarch butterfly". Although she has been monitoring the site in dinosaur Valley State Park for most of the 14 years it's been monitored, Bob and Gail Bullard, also Texas Master Naturalists, originally set up the plot.

Each fall, the Rio Brazos Master Naturalist Chapter hosts "Monarch Fest" in Acton, Texas, with monarch tagging; life cycle, migration, native and host plants and Monarch Way Station teaching sessions; and several more activities. This year, the Fest had 586 visitors and 58 volunteers. But Sara doesn't stop with monitoring and working on the Annual Monarch Fest. She is known as "Monica Monarch" and teaches everywhere she gets a chance about monarchs and how we can all make a difference.

Photo: Sara Paulsen, aka Monica Monarch, Texas Master Naturalist, teaching about monarchs. Photo courtesy of Sara Paulsen.

Team Efforts, Continued...

The Brandywine Zoo: Epicenter of Monarch Monitoring in Delaware

Jennifer Klotz, Community Engagement Specialist at the Brandywine Zoo, and a team of nature center interpreters and volunteers monitor seven MLMP sites in Delaware. The Brandywine Zoo is accredited through the Association of Zoos & Aquariums, which offers a range of programs called SAFE (Saving Animals From Extinction). Monarch butterflies are one of SAFE's focal species. Jennifer learned about the MLMP while attending the Monarch Joint Venture's North American Monarch Institute in 2023, and got in half a season after returning to Delaware. After getting a full year under her belt in 2024, Jennifer decided to go big on training in 2025!

Photo: Jennifer and a zoo intern monitoring the Brandywine Zoo site in Wilmington DE

As part of Delaware State Parks, the Brandywine Zoo has a direct connection to nature center interpreters throughout the state. Jennifer sent out an email to these interpreters and described the opportunity to monitor monarchs at in-person meeting. She first conducted an internal training for nature center interpreters, then recruited members of the public via the MLMP site, social media posts, and fliers at the zoo and nearby neighborhoods. All of this recruiting led to three trainings and six new sites, five in State Parks and one at Wilmington's Hagley Museum. The sites all had existing meadows or gardens with milkweed, and recruited volunteers to help monitor.

Jennifer sees lots of benefits to incorporating MLMP into their programming. "First and foremost, it helps us accomplish SAFE Monarch goals, building support for continued accreditation. It also provides connection to our guests. This year we installed official MLMP signage, creating an educational opportunity to advocate for monarchs and native plants. Internally, it has engaged staff across departments. They now come to me with their monarch sighting reports from home or on grounds. Some who work in the gift shop, concessions, and as keepers snap photos and comment on the weekly updates I send during the summer."

Jennifer creates social media posts and writes articles about the MLMP for their biannual magazine which is mailed to members and placed in zoo kiosks for guests.

Four years ago, Brandywine Zoo ramped up its native planting efforts, and their effort has paid off. Now that the plants are well-established, lots more monarchs came to the site in 2025. Jennifer notes, "if you plant it, they will come".

Photo: For MLMP training sessions that happened before the milkweed came, Jennifer created fake (but realistic) milkweed plants for trainees to practice on!

Team Efforts, Continued...

Monitoring Monarchs at a Michigan Bird Sanctuary, a Forest, and a Fish Hatchery: Karen Coté

The Kellogg Bird Sanctuary in Kalamazoo County, Michigan has hosted an MLMP site for 11 years. For ten of those years, Karen Coté has monitored the site, and Leila Wood joined her in 2019. They often monitor together to ensure that each milkweed plant is examined carefully.

Once finished with the Bird Sanctuary, Karen heads to the Kellogg Forest a few miles down the road, where she monitors each week. She also monitors the Wolf Lake Fish Hatchery with two other volunteers, taking turns throughout the summer. Each of these locations has a pollinator garden that is a registered MLMP monitoring site.

Karen learned about monarch monitoring at a Master Gardener get-together when the Kellogg Bird Sanctuary was soliciting for help with its pollinator garden. She took an in-person monitoring class from long-time MLMP volunteer and trainer Ilse Gebhard and also took an on-line class. She took on the Wolf Lake site at the same time, and a few years ago, the Kellogg Forest Forester asked if she could take over monitoring at the Forest's Pollinator Garden as well.

One of Karen's favorite parts of monitoring for monarchs is getting to show visitors at the sites the monarch eggs or larvae and explain the life cycle to them. "It's fun to see the astonishment on some of their faces when they see the eggs and first instars! Many folks say they are going to start growing milkweed in their yard for the monarchs."

But Karen doesn't enjoy documenting low survival rates. "I have found that no matter how many eggs you find one week, you may find only a few instars the following week. This is so sad, because you know all the other eggs were eaten.

"I know other critters have to survive as well, but I hate to see the loss of so many monarch eggs... You get a feeling of protectiveness about the monarchs. You are sad when you know they didn't make it, but you are very happy when they survive to adulthood!"

Like all good scientists, Karen recognizes how much there is to learn. "I have learned so much over the years, and yet I still know so little."

Photo: Karen Coté, Karen Oberhauser, and Ilse Gebhard at Ilse's Kalamazoo home. Photo by Mike Reese

Milkweed, Monarchs, and More!

Some Caterpillars Like Company: The Milkweed Tussock Moth. By: Ilse Gebhard

In her early days of monarch monitoring, Ilse once found well over a hundred tiny caterpillars on the underside of a milkweed leaf. Here's her story about her first encounter with these insects.

All huddled together, they had emerged from a white mass attached to the leaf right next to them. They were off-white with white hair and a black head. To figure out what they were, I placed the milkweed leaf in a gallon pickle jar with a cloth cover. These caterpillars really liked togetherness. They ate together, moved together, rested together, went through instars together—all lined up next to each other.

The larvae consumed an amazing amount of milkweed and produced a lot of frass to clean out every day. After the first two instars shed their outgrown skin, the caterpillars still looked the same but after the third one the color of their hair was darker. There was hope they would turn into something I could identify. Their identity became clear at the fourth instar stage: milkweed tussock moths (*Euchaetes eagle*).

Photos: Newly-hatched (left) and 5th instar (center) Milkweed Tussock Moth caterpillars, mating pair of Milkweed Tussock Moth adults. Photos by Ilse Gebhard (left and right) and Karen Oberhauser (center)

Not All Yellow Bears Are Yellow. By: Ilse Gebhard

One early September, we were showing friends our "out-back" when we came across a black caterpillar with dark reddish-brown hair and white spiracles. Spiracles are external openings to the caterpillar's respiratory system and are not always easily seen. There are 9 of them on each side, with one pair on the first thoracic segment and the remaining pairs on the first 8 abdominal segments. I brought it inside to raise.

The caterpillar was 1.25 inches long and was found on Stinging Nettle, which made feeding it a bit painful at times. After a week and some growing it spun a cocoon using its hair and some nettle leaves.

Photo: Eggs of Virginian Tiger Moth on milkweed

Not all Yellow Bears Are Yellow, Continued...

The still unknown cocoon over-wintered in our screened-in porch and during the night of May 10 to May 11 a beautiful moth with white wings and body emerged. With a wingspan of 2 inches, the wings had small black markings. There were 3 rows of black dots on the abdomen, one down the back and one down each side along with yellow stripes on the sides. The forelegs were white with yellow and black markings. With all those distinguishing features I could easily identified it as the Virginian Tiger Moth, *Spilosima virginia*, common in our area. The caterpillars of this species, called Yellow Bears, can range from yellow to orange, to reddish brown or black. They can get grow to almost 2 inches in length.


Photos: Newly-hatched Virginia Tiger moth (Yellow Bear) caterpillars (left)), two color morphs of Yellow Bears (center and right). Photos by Ilse Gebhard (left and center) and Karen Oberhauser (right)

Highlights from end of Season wrap!

By: Alyssa Taylor

Another year in the books! At the end of October we convened for our the second annual end of season virtual wrap up! We were joined by around 50 participants with registrations across 22 states and 2 Canadian provinces.

Time flew by as always, but we covered a lot in a short period of time! We shared monitoring results, updates about monarch migration status, highlighted some of the great work being done by all of you in the MLMP community, shared recent research using MLMP and community science data, and shared monarch monitoring stories and questions with fellow MLMP volunteers from across the continent. You can view the full recording can be watched on our website at this link.

2025 Monitoring Season

- 335 sites monitored
- 2635 monitoring events in 34 states and provinces
- 174 larvae reared for Activity 3
- 44 new volunteers

Word Cloud from Meeting Participants when asked to describe their 2025 monitoring experience.

2026 MLMP Training Sessions

The 2026 MLMP Training registrations are now posted!

Whether you taking a training for the first time or need a refresher, we have 3 live courses scheduled for the upcoming year! Please share with those in your community who might be looking to get involved.

Dates and times:

Western Region- January 29th, 9 am - 2 pm PT with a one hour break for lunch

Southern Region- February 26th, 10 am - 3 pm CT with a one hour break for lunch

Northern Region- May 12th, 10 am - 3 pm CT with a one hour break for lunch

Can't make it? No problem! Check out the self-paced course which available year-round.

Visit https://learn.monarchjointventure.org/ to get registered today!

Understanding Teachers' Experiences with Citizen Science

By: Amanda Gladys, Doctoral Student, Clemson University

I am conducting a research study to learn what it is like for K–12 educators who participate in citizen science projects with their students. I am interested in all experiences with citizen science, including projects connected to nature-based learning and outdoor field investigations. My goal is to understand what helps teachers, what challenges them, and how outdoor, nature-based experiences and conservation work shape their teaching. I am also curious about whether these experiences contribute to teacher joy.

As a K–12 educator who uses the Monarch Larval Monitoring Project and other citizen science platforms in my own teaching, I hope this study will help legitimize outdoor, nature-based science experiences for K–12 teachers.

If you are a K–12 educator who has implemented a citizen science project of any kind, I would love to hear about your experiences.

For more information or to participate, please email: agladys@g.clemson.edu

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Please consider supporting our collective conservation efforts with a donation that supports training, materials, and maintenance of the data you collect.
Have a story from your site or art to share? We'd love to hear from you!
info@mlmp.org | mlmp.org