MLMP Updates

An e-newsletter of the Monarch Larva Monitoring Project

Summer 2022

This summer's newsletter includes a summary of monarch winter 2021-2022 population numbers, updates to our data sheets, a summary of our training workshops, a volunteer thank you and honor roll, and interviews with five current citizen scientists—some who are new to monitoring and others who have been with us since 1997.

Monarch Winter 2021–2022 Population Numbers Released

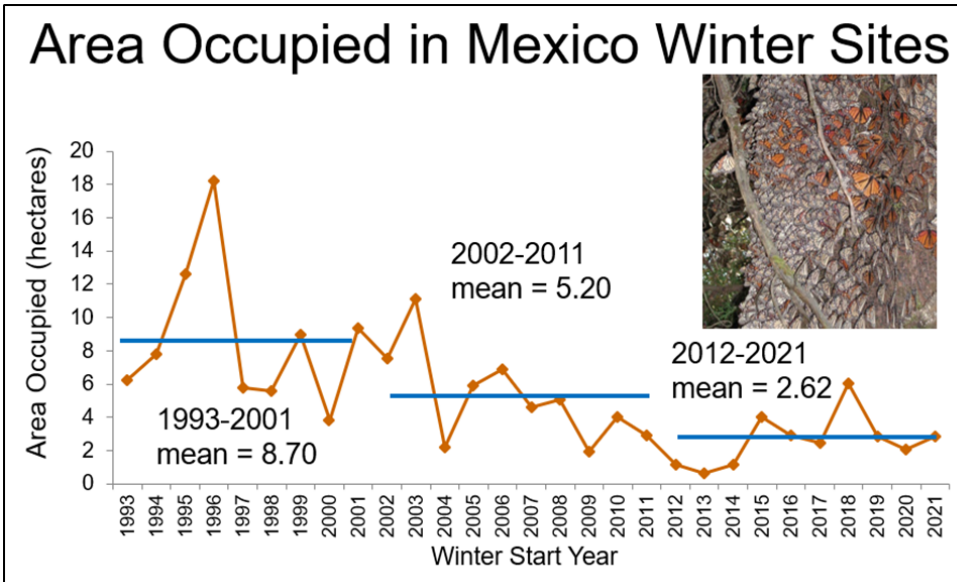
Karen Oberhauser, UW-Madison Arboretum

On May 24, 2022, the World Wildlife Fund-Telmex Telcel Foundation Alliance (WWF) and the National Commission of Protected Natural Areas in Mexico (CONANP), released data from the winter 2021–22 monarch butterfly population counts. At the wintering sites in central Mexico, monarch population size is compared from year to year by the number of hectares (one hectare = 2.5 acres, slightly less than two football fields) occupied by trees containing monarchs. WWF and CONANP have been systematically monitoring this area since 2004, with similar data from 1993-2003 collected by the Monarch Butterfly Biosphere Reserve (MBBR).

Monarchs occupied 2.84 hectares in December 2021, compared to 2.10 hectares at the same time in 2020. This represents a 35% increase. The average for the past decade, from the winter beginning in 2012 to the winter beginning in 2021, has been 2.62 hectares, and the population has been declining since we began measuring it (see graph below).

Monarchs were found in ten different colonies, half in the State of Michoacán and half in the State of Mexico. The largest colony was in the El Rosario Ejido, part of the MBBR.

Monarch numbers are largely driven by climatic factors and habitat availability. Weather conditions during the spring and summer of 2021 were better than they were during the previous year, resulting in fairly robust numbers last summer. But weather conditions predicted by current climate change models suggest that the hot and dry conditions that lead to lower populations may become more frequent. And while many individuals and...



Area with monarchs roosting on trees (1 hectare = 2.5 acres). Note year to year weather-driven variation, but long-term decline in monarch numbers illustrated by decade means. Data from 1993-2003: Monarch Butterfly Biosphere Reserve (MBBR, CONANP). Data from 2003-2021: WWF-Telcel Alliance, in coordination with the MBBR.

… organizations are working to create more habitat for monarchs, we have not come close to replacing the habitat that was lost early in the 21st century. Much of this habitat loss was driven by the advent of genetically -modified herbicide-tolerant crops and subsequent loss of milkweeds from corn and soybean fields throughout the Upper Midwest. In the wintering sites in Mexico, as forests become more heavily degraded they are less able to buffer the monarchs from temperature extremes, including both warm daytime temperatures and cold nighttime temperatures.

In 2016, members of the Monarch Conservation Science Partnership published a paper that set a conservation target of 6 hectares. This population size would give monarchs a reasonable buffer against declines that often occur from one year to the next. For example, monarch numbers have declined by over 50% from one year to the next several times during the years that they have been monitored (see graph). If that happened after a year with already low numbers, the population might not be able to recover. Thus, while this increase is hopeful, monarchs are still not “out of the woods”.

It is likely that monarch numbers would be even lower without the efforts of dedicated individuals throughout North America, but current numbers show us that we need to increase our efforts. Each one of us needs to do what we can to mitigate climate change and provide habitat for monarchs and the hundreds of species that share their habitats.

For further reading: May 2022 Press Release from WWF-Mexico, Study that set Monarch Conservation Targets Semmens et al. 2016.

MLMP Training Workshops

As we head into another season of monitoring, we have many new faces to welcome thanks to our MLMP training workshops. We’ve led four training workshops with over 170 attendees so far this year, specific to California, southern states, western states, and northern states. We’d like to extend our gratitude to guest Instructors Gail Morris of the Southwest Monarch Study, Laura Molenaar, Liz Goehring, Terry Smith of the Pollinator Posse, and Katie -Lyn Bunney, Jennifer Thieme, and Rita Morris of the Monarch Joint Venture for their assistance and expertise.

Our next training workshops will be offered early next year, but free online training resources are always available on our website. If you would like to view the spring 2022 training workshop video for your region, we kindly ask that you consider a donation of $15 or more to the MLMP. This recording of approximately 3.5 hours includes all but the break-out conversations that took place during the workshop. Your contribution will help ensure MLMP can continue to support volunteers, training, and maintenance of our database. Contact Julia Whidden at info@mlmp.org for more information.

Monitoring Reminders

Updates to Activity #1C and Activity #3 Data Sheets and Instructions
In response to recurring data collection and data entry errors, we recently updated the Activity #1C and #3 data sheets and instructions. If you’re planning on participating in these activities this year, please head to the ‘Activities & Data Sheets’ link on our website to download the updated data sheets.

What’s different?

- **For Activity #1C:** Measuring Monarch Density, we’ve added instructions on how to record and summarize your data to simplify data entry into our data portal.
- **For Activity #3:** Estimating Monarch Survival, we’ve added detailed instructions on how collect your data and ship us your flies. We’ve received many packages of crushed and crumbled flies that were sent to us in plastic bags. Please send your flies in **hard containers** so their structure is preserved for identification. It is very difficult to identify flies that have been crushed in the mail. As a reminder: if you live in California, it is illegal to rear monarchs, and therefore you are unable to participate in this activity.

Data Entry Help

This year, we're offering new opportunities for MLMP citizen scientists to get help with entering their data into our data portal. If you're having trouble, our first recommendation is to check out the Activity 1C data entry help video on our website under 'Get Started' and 'Online Training'.

If you're still having trouble, please reach out to our MLMP Coordinator Julia Whidden at info@mlmp.org with specific questions. Also, if you're monitoring with a group of volunteers and have multiple people entering data for your site, you can book a free online 45-minute data entry help session with Julia.

Volunteer Spotlight

In honor of our **26th birthday,** we're celebrating a few of the many faces that contribute to MLMP. To start, read about Martha, Pam, and Laura, our trio of citizen scientists who monitor the Native Plant Garden surrounding the Visitor Center at the UW-Madison Arboretum, where MLMP is hosted. Next, read about Gayle Steffy and Sue Jamison, who have each been monitoring with MLMP for 26 years.

We asked them all a series of questions about why they monitor for MLMP, what keeps them coming back year after year, what they get out of monitoring, and why they're so passionate about monarchs.

Martha Askins

I started monitoring for MLMP several years ago as I was preparing to retire from my job at the UW Law School. A friend forwarded me a posting about an informational meeting about monitoring monarchs, and I signed up. I was interested in a volunteer opportunity that would be completely different from my law job, that would be outside, that would contribute in some way, and where I could learn something new. Monitoring has turned about to be all those things and more. I had never participated in a "citizen science" project before, nor did I know anything about monarchs except that they are pretty!

Martha Askins (left) and Pam Moe (right)

One reason I return to the Arb each year for monitoring is that I've found it interesting to observe a small area of the Arb, every week, and see it change. The monitoring requires the close examination of milkweed plants in a small area of the native plant garden, and recording observations of monarch eggs and larva. The task is surprisingly meditative and peaceful, and it turned out that I really liked seeing the changes in that small part of the Arb throughout the season. The plants change; the birds change; the other bugs and creatures change throughout the season. And the close observation of milkweed means you see things you would not otherwise see, like camouflaged tree frogs and grasshoppers. And I'm hopeful that our monitoring activities are useful to the scientific community.

Monitoring also reminds me to get to the Arb regularly. Typically I'll take a walk after I do the monitoring. It's so great to have this tremendous place in the city to enjoy nature, and monitoring has gotten me in the habit of appreciating this space. It's also given me the opportunity to meet some of the great people who work at the Arb, and for me, especially Karen Oberhauser.

Pam Moe

I started out monitoring with MLMP in the Native Plant Garden at the UW-Madison Arboretum, but after a year decided that I wanted monitor a site at my home too. I knew that I wanted to do something to help monarchs as soon as I retired, and I jokingly told my Occupational Therapy co-workers that I'm switching...

… from rehabbing people to rehabbing monarchs.

I've always been interested in butterflies, and monarchs and their caterpillars are just so beautiful. Spiritually, they represent rebirth. I had a friend who was dying of cancer and at her funeral we ended up using a photo of her that I have from my home, where she's holding a monarch in her hand and it's starting to fly away. I've also been to Mexico to visit monarchs in their overwintering ground, and it was incredible.

I take part in MLMP because as a citizen scientist living through the global environmental change, I want to report what is happening so that we have records of it. I find it really rewarding to be a part of this project, and my volunteering has also extended to giving talks about monarchs to organizations like Kiwanis and garden clubs and encourage the planting of milkweed and nectar plants.

A highlight of monitoring for me is when people walking by ask me what I'm doing. People, especially kids, are really interested and get so excited when I'm able to show them an egg. On top of my monitoring with MLMP, I also report some of my monarch and hummingbird sightings to Journey North.

Laura Anderson

I started monitoring for MLMP at the Arboretum in the summer of 2019 after attending a MLMP training given at the Arboretum in early June of that year. I hadn't monitored monarchs before that and I didn't t even know monitoring Monarchs was something anyone was doing.

Laura Anderson

I monitor because it's just fun to be out at the Arboretum. It's such a beautiful place, there are so many wonderful plants, insects and birds to see while I am monitoring. Sometimes I get carried away watching some bird or spider that my hour I'd planned for monitoring turns into two hours. I also get very excited when I find a Monarch egg or larva, and the 1st instars are so tiny that it's fun to watch them grow. I always check the plants I saw them on the next week in hopes of finding the same caterpillars again.

I'm so passionate about monarchs because they are a beautiful insect that is easily recognizable by almost all people. They serve well as a flagship species. They can be used to teach people about insect life and about habitat loss which affects all species on earth. If people become aware of how humans are affecting monarchs and their habitat, maybe each person will make a little change in their own lives to help out.

Being involved in a citizen science project is a great way to learn more about the world of nature and how we fit in. Being outside is very peaceful and sometimes I can't believe that I am getting to do and see the things that I am doing. Everyone should grab the opportunity to do some citizen science in their lifetime.

Gayle Steffy

I've been studying monarchs since I was 13, and was already spending time in fields looking for monarchs. So I just kind of added monitoring for MLMP to what I was already doing back in 1997. As for what I get out of monitoring and why I return, besides being a great excuse to spend more time in nature, I'm interested in population fluctuations, parasitism rates, trends, etc… Unfortunately, in recent years I've been sadly monitoring a trend of repeated herbicide spraying at two of the sites I routinely monitor.

Gayle Steffy

I'm passionate about monarchs because of the mysteries of the migration. While we have some idea of how they navigate, there is so much more to learn. My dream job would be attaching radio trackers to monarchs and following them to Mexico.

After 26 years, I still get excited to monitor because there's just something fun about hunting for caterpillars. I've seen many exciting things while out monitoring, but the most exciting thing may be the two mating pairs and a single monarch I saw nectaring on one flower, or the time there were hundreds of 5th instar caterpillars at a site, or maybe the kitten I found who went home with me and stayed.

I've always wanted to be a monarch scientist, however when I graduated college there were no opportunities to work with monarchs as a career, and graduate school wasn't an option. But if you love something enough, you find a way. So I tagged monarchs year after year, collecting as much data as I could from each one. The result was a paper, *Trends Observed in Fall Migrant Monarch Butterflies (Lepidoptera: Nymphalidae) East of the Appalachians at an Inland Stopover in Southern Pennsylvania over an Eighteen Year Period***,** published in the Annals of the Entomological Society of America. Other than my involvement in MLMP, I also participate in Project Monarch Health and Monarch Watch.

Sue Jamison

I got involved with monitoring as I was doing Monarchs in the Classroom with my first graders each September. We would raise 12-15 monarchs the first month of school and I was just as excited as the children to watch the life cycle of this amazing insect! I met another volunteer who was coordinating the larva monitoring in our area and was glad to begin helping her during the summer months. I continued each year and since 2013 have been the coordinator in my area.

I enjoy being a citizen scientist in our area, the Stonington Peninsula of the Upper Peninsula of Michigan. We have two fields that we monitor each week during the summer months. Each June we begin a new season of monitoring and our team consists of volunteers who are all passionate about monarchs. Finding eggs and larvae on the milkweed plants never fails to thrill us. We have one of the oldest monarch butterfly datasets in North America and in 2008 we received the Wings Across America Award for butterfly conservation.

I'm so passionate about monarchs because they're the most recognized, studied and loved of all insects in North America. Their migration to the winter habitats in Mexico each year is spectacular and eagerly anticipated by many people. I hope that citizens in Mexico, Canada and the United States will continue to promote awareness of the monarch's life cycle and habitat requirements. It is not difficult to be passionate about these winged warriors!

The most exciting thing to have happened while monitoring was in 2014, when a local TV station filmed a segment on the Monarchs of Peninsula Point. It was the first weekend of September and we were hoping to see many monarchs roosting on our cedar trees at the end of our peninsula. The night before, thousands flew in to roost overnight and with a south wind blowing in the next day they stayed and we were able to produce a beautiful segment for the community to enjoy. It was the first time I had seen that number of monarchs in one place. Truly memorable!

After 25 years I still enjoy each new season of monitoring. The anticipation of searching for eggs and larva is exciting and we always hope that each new season will be more productive than the last one. We hope the monarchs will continue to come back to Peninsula Point for many years to come!

2022 Honor Roll

MLMP wouldn't be possible without the time, energy, and passion of our amazing citizen scientists. Thank you to all who have monitored and continue to monitor with us, and a special shout-out to everyone listed below who has been with us for 5 or more years!

5 years

Albrecht, Jacquelynn
Anderson, Nicholas
Baker, Terry
Bell, Melinda
Chipley-Trudeau, Jess
Cutshall, Julia
Dozier, Krystin
Frey, Julie
Hagedorn, Michael
Havilar, Sass
Hebel, Susan
Hotaling, Kaley
Johnson, Kathy
Kirts, Lee
Letaw, Anna
Lovell, Denis
Malley, Sue
Montgomery, Becky and Zuri
Snyder, Jen
Stuesser, Mary
Tanner, Linda
Trefny, Karla
Weiss, Yael
Wiles, Jeffrey
Wilson, Ross

6-10 years

Baldwin, Tyler
Bell, Laura
Benham, Carrie
Binning, Adele
Bishop, Stephen
Boardman, Rheda
Booth, Marie
Bradtmiller, Dani
Brown, Walter
Bryer, Loree
Cameron, Charles
Cullar, Carol
Dalton, Sarah
DeGroff, Susan
Duke, Lisa
Farmer, Connie
Faubert, Jill
Feinberg, Greg
Fitzloff, Gerri
Flynn, Duane
Forster, Lauren
Fox - Patterson, Audrey
Gebben, Sally
Geving, Pat
Goellner, Karen
Goldman, Peg L.
Gould, Sandee
Greeley, Jean
Gwynn, Leslie
Haider, Marlene
Hanners, Grace
Helie, Christine
Henninger, Trudie
Huffman, Cheryl and Angelica
Hughes, Gabi
Hunter, Jan
Jaeger Mountain, Claire
Karis, Karen
Keith, Brenda
Kemp, Donna
Koomen, Michele
La Belle, Vi
Levesque, Diane
Luce, Don
MacLean, David
Manning, Gail
Mast, Julia
McConnell, Megan
Meyer, Darrell
Meyers, Susan
Moeller, Doris
Morris, Gail
Mukai, Janet
Murphy, Linda
Orr, Hope
Paulsen, Sara
Phelps, Kathy
Przypek, Joseph
Roderus, Sue
Romero, Liz
Sarikonda, Candy
Skipper-Spurgeon, Sherry
St. Sauver, Jason
Stiefel, John
Sullivan, Ray
Taylor, Donna
Tsaouse & Takamura, Bess & Kuma
Tuttle, Gillian
Vanderford, Mary
VA Master Naturalists, Pocahontas St. Park
Vollrath, Ruth
Waggener, Gracie
Walter, Gail
Walters, Betty
Warden, Mary
Warren, Mobi
Yankowiak, Betsy
Yarger, Amy

11-15 years

Berkowitz, Henry
Blassey, Michael
Borland, Jane
de Wolf, Virginia
Dicks, Deb
Eurs, Albert
Evanson, Valerie
Fox, Sondra
Gilliland, Gail
Ingianni, Elizabeth
James, Sandy
Johnson, Eric
Kelley, Fred
Marcinski, Deb
McMillan, Shana
Newton, Anna
Nitka, Debi
Pearsall, Joyce
Pinchot, Darlene
Pleasants, John
Rock, Diane
Steinmetz, Kristin
Strom, Annette
Thornton, Mary Anna
Tucker, Elaine
Unkles, Jennifer
Vargo, Tim
Wick, Janice
Yarnold, Pam

16-20 years

Alstad, Amy
Brooks, Denny
Brupbacher, Judy
Cabell, Sondra
Clark, Maureen
Gebhard, Ilse
Goforth, Chris
Goodwin, Chris
Kennedy, Mary Bishop
King, Tim; Jan and Colin
Kiphart, Kip
Lipman, Paul
Miller, Jessica
Molenaar, Laura
Pauli, Karl
Petersen, Cindy
Staff, Fiver Rivers

21-26 years

Bockhahn, Brian
Duerkop, Sharon
Jamison, Susan
Oberhauser, Karen
Oberhauser, Pete and Sanny
Payant, Susan
Powers, Barbara
Sharp, Dexter and Jan
Steffy, Gayle
Weber, John and Marlene

Photo Gallery

Citizen scientists from across the continent submitted great photos to our MLMP gallery this past season. See a highlight from Lisa Johnson from Puerto Rico to the right, which Lisa aptly named “Brunch”. Submit your own photos to us through the Gallery tab on our website!

You can support MLMP in many ways!

Please consider supporting our collective conservation efforts with a donation that supports training, materials, and maintenance of the data you collect. You can make a financial contribution today here.

Have a story from your site or art to share? We’d love to hear from you!

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