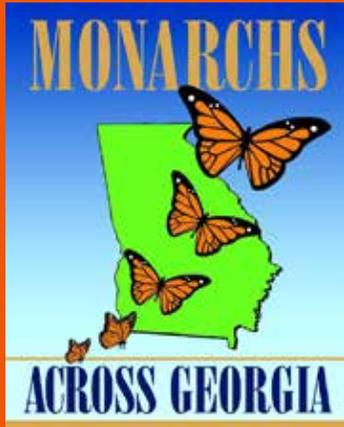


The Chrysalis

Emerging News from Monarchs Across Georgia

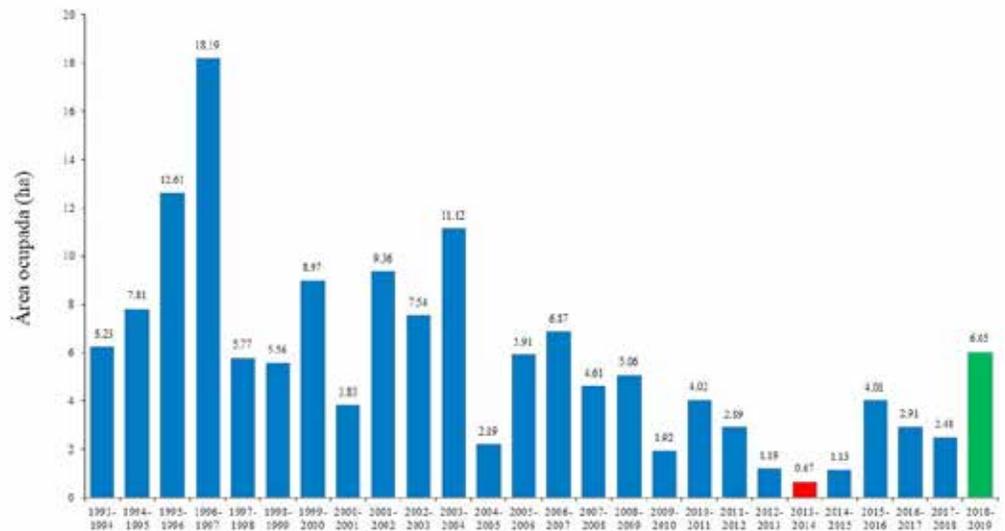
A Committee of the Environmental Education Alliance of Georgia



Largest Eastern Monarch Population since 2007

The winter of 2018-19 saw the largest population since 2007 of the eastern North American monarchs hibernating in Mexico. An estimated 6.05 hectares of forest area were occupied by fourteen colonies of monarchs in the forests of Mexico. This represents an increase of 144% over the 2.48 hectares occupied by monarch colonies in 2017. Good weather conditions during the breeding season are a major reason for the increase in population. Efforts across North America to protect and restore habitats are also considered to have benefited the increase in monarch population.

Figure 1: Forest area occupied by colonies of monarch butterflies in Mexico, 1993-94 to 2018-19



From: <http://www.wwf.org.mx/noticias/?uNewsID=342230>

In 2013-14, the lowest occupation by hibernating monarchs (0.67 hectares) was observed in the forests since monitoring began in 1993-94. Efforts were then made by Canada, the U.S., and Mexico to preserve the monarch migration, which led to a Trilateral Scientific Committee that defined six hectares as the right area to sustain a viable population of monarchs in North America. It is notable that the monarch hibernation area observed this past winter is only slightly more than the area required.

Researchers from the Comisión Nacional de Áreas Naturales Protegidas (CONANP) and the Alianza WWF-Fundación Telmex Telcel (National Commission of Natural Protected Areas and the WWF-Telmex Telcel Foundation) along with members of local communities detected eight colonies within the Monarch Butterfly Biosphere Reserve and six colonies outside the reserve. For the first time, a colony was found in the Nevado de Toluca flora and fauna protection area (el Área de Protección de Flora y Fauna Nevado de Toluca).

Continued on page 2

Upcoming Events

Cobb County Master Gardeners 20th Annual Garden Fair & Plant Sale

April 19-20, 2019
10 am - 4 pm
Jim R. Miller Park
2245 Callaway Road
Marietta, GA 30008

North Fulton Master Gardeners 2019 Garden Fair at Bulloch Hall

Saturday, April 27, 2019
9 am - 4 pm
180 Bulloch Ave
Roswell, GA 30075

Rosalynn Carter Butterfly Trail Spring Gardening Symposium and Native Plant Sale

Friday, May 3, 2019 at 8:30 am
Plains, GA

Plant Sale

Saturday, May 4, 2019
10 am - 2 pm
Autrey Mill Nature Preserve and Heritage Center
9770 Autrey Mill Road
Johns Creek, GA 30022

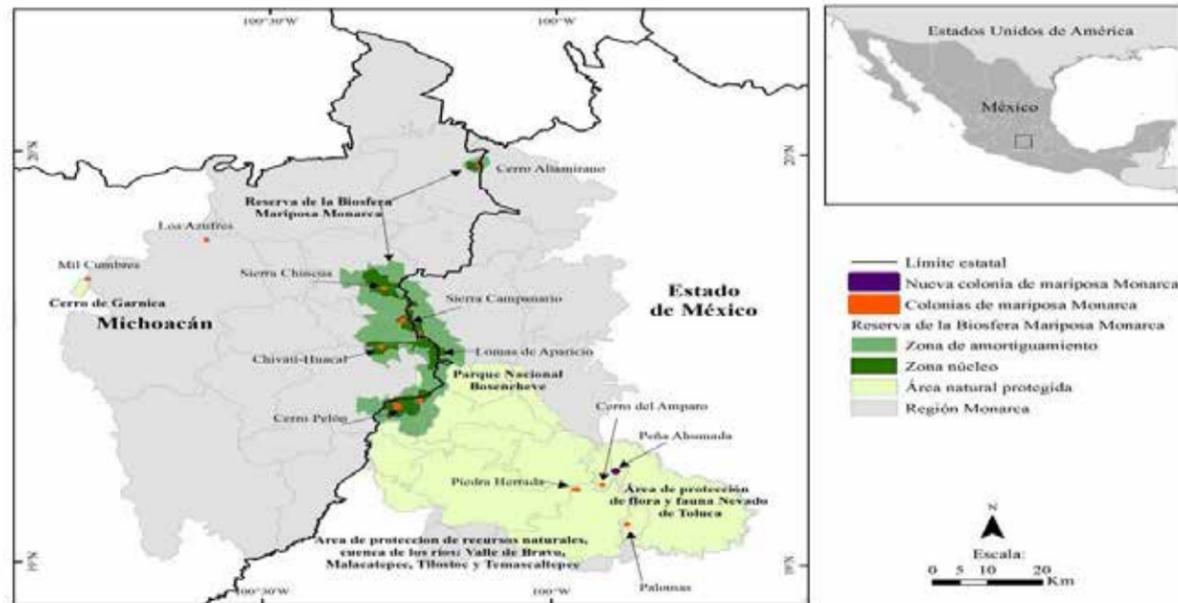
National Pollinator Week

June 17 - 23, 2019

For more information about these events or to register, please visit www.eealliance.org/mag-events.
More events to be announced soon!

Eastern Monarch Population... Continued from cover

Figure 2: Sanctuaries and colonies of hibernation in the Monarch Region



From: <http://www.wwf.org.mx/noticias/?uNewsID=342230>

While the estimate of the overwintering population is obtained from the monitoring efforts of WWF-Mexico and CONANP, information on the status of breeding in the U.S. is gathered by citizen scientists. Public participation in monitoring the monarchs – from their habitat and their eggs, larvae, natural enemies, and diseases to tracking their migration – will contribute a great deal to their conservation.

After the winter of 2017-18, monarchs encountered favorable climactic conditions, which allowed them to repopulate breeding sites across North America. This led to an increase in the migrating population in 2018-19. More importantly, the increased population is indicative of efforts by concerned citizens, scientists, and governments in the U.S. to increase milkweed habitat. Furthermore, work by WWF-Mexico and other organizations to establish gardens with flowering plants that can provide nectar for the butterflies during their trip, and efforts by the communities to conserve the forest area around the Monarch Butterfly Biosphere Reserve, have contributed to helping the wonder of monarch migration.

Good weather alone cannot guarantee healthy monarch populations in future years. Sustained efforts to grow native milkweed plants as well as nectar plant habitats are crucial to maintaining monarch populations in the future. ♦

Recommended Resource

Monarch Butterfly Conservation Webinar Series

by Monarch Joint Venture

Monarch Joint Venture (MJV) has partnered with the U.S. Fish and Wildlife Service to host a [series of webinars](#) on monarch biology, monitoring, and conservation. The webinars will be recorded and available for later viewing. Recordings from 2015, 2016, and 2017 webinars are also available, which include sessions on a wide range of topics from monarch biology, milkweed seed collection, volunteer participation in conservation, advanced monarch research topics, and climate change.

Upcoming sessions cover conservation and populations as well as research and monitoring topics such as Monarch Butterfly Population Modeling and the Integrated Monarch Monitoring Program. The webinars will also provide valuable information on how to plant and manage pollinator habitat and about education with monarchs.

For a full list of upcoming webinars, visit <https://monarchjointventure.org/news-events/events>.

Monarch Populations in Florida down by 80% since 2005

Native vegetation and milkweed needed to restore monarch population

RESEARCHERS WHO CONDUCTED a 37-year survey of monarch populations in North Central Florida have observed a decline in monarch populations in the state since 1985. Shrinking milkweed habitat and an increase in glyphosate use are likely to blame for the decline. Additionally, a steep decline has been observed since 2005, with monarch populations reduced by 80%. "This study shows the tight connection between monarchs and milkweed, and highlights very dramatic losses in abundance in Florida that further confirm the monarch is declining," says Jaret Daniels, one of the co-authors of the study and professor in the University of Florida's Department of Entomology and Nematology.

This study is notable as the longest location-based monarch monitoring project to date, with a team led by world-renowned monarch expert Lincoln Brower, who passed away in July 2018. Researchers monitored spring monarch numbers in an herbicide-free cattle pasture in Cross Creek, Florida (about twenty miles southeast of Gainesville). This long-term study of changes in their spring breeding has pointed out that there was more fluctuation in the monarch data before 2005. However, since 2005, the rate of decline has been steady.

The team examined milkweed plants for caterpillars and captured adult butterflies for thirty-seven years, which spanned more than 140 generations of monarchs. They found that the monarch's departure from Mexico in spring is timed to coincide with the optimal growth of milkweed in the Southeastern U.S. While monarchs feed on a variety of plants, they lay eggs only on the leaves of milkweed plants. These leaves are the exclusive food that the young monarch caterpillars will ingest, and in doing so they take in the plant's toxins that help the adult butterflies ward off predators.

If monarchs get to their breeding grounds in the U.S. too early, then they may find host plants covered in or killed by frosts. If they are late, then the plants may not be able to support the caterpillars. Therefore, the butterflies must time their arrival within a three-week window in order to maximize their caterpillars' chances of survival. The monarch's timing could also be disrupted by any alterations to plants' springtime schedules caused by climate change. It is notable that monarchs lay hundreds of eggs on milkweed over their lifetime, but just over two percent of eggs survive to become caterpillars.

Efforts are needed in increasing the pesticide-free native milkweed populations in the state, in yards as well as on roadsides. However, it is important to plant milkweed species that are native to the state. Tropical milkweed (*Asclepias curassavica*) is a non-native species that has become popular because of its color and year-round vegetation. However, it can be detrimental to the monarchs because it allows them to breed in unusual areas during the winter months, such as regions far enough north of Mexico that they are exposed to freeze events. Additionally, prolonged breeding can lead to an increase in the protozoan parasite *Ophryocystis elektroscirrha* (OE in short). Therefore, it is better to use one of about twenty-one species of milkweed that are native to Florida. *Asclepias incarnata* (swamp milkweed), *Asclepias tuberosa* (butterflyweed), and *Asclepias humistrata* (pinewoods milkweed) are all native to Florida and are essential to the monarchs returning from Mexico.

Finally, the researchers highlight the importance of public-private relationship and collaboration for monarch conservation and research efforts. Along with planting native species, monarch research will benefit immensely when private land owners allow researchers to access their property. Jaret Daniels mentioned that the team will continue monitoring monarchs in Florida and pointed out that the willingness of the Cross Creek property owners to allow access to the pastures for thirty-seven years was a key factor in the success of the study. ♦

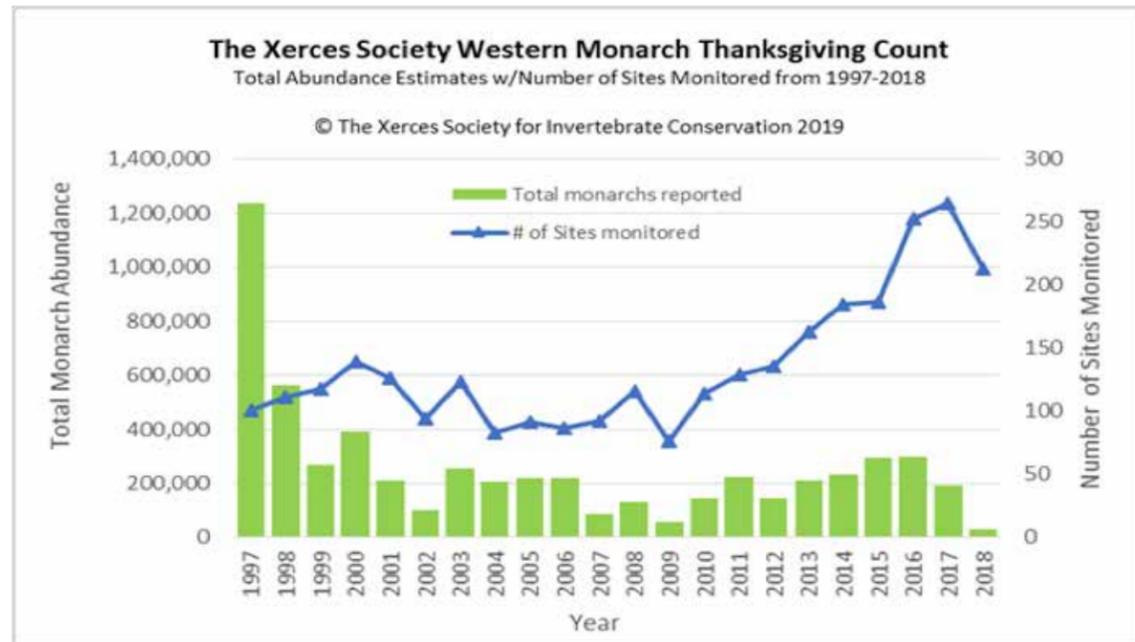


Pinewoods Milkweed (*Asclepias humistrata*)
Photo credit: Rebekah D. Wallace, University of Georgia, Bugwood.org

Western Monarch Numbers Collapse to Less Than 30,000

Population this low (28,429) may result in a partial or total collapse of the western monarch migration

Thanksgiving 2018 brought shocking news from California, when an all-time record low of 28,429 monarchs were counted at 213 sites. This represents a decline of 86% from 2017, when 192,668 butterflies were counted at 263 sites. When compared to the 1980's, the 2018 numbers represent a drop of 99.4%. The western monarchs are the butterflies that overwinter in coastal California, with a small number spending winter in Arizona and northern Baja, Mexico.



From: <https://xerces.org/2019/01/17/record-low-overwintering-monarchs-in-california/>

Low numbers of breeding western monarchs were observed in summer 2018 in the western states, and this pattern followed in the preliminary Thanksgiving count. The reasons for the drop between 2017 and 2018 counts may be the late-season storms and severe wildfire season in California and other regions in the West. However, the long-term decline of the western monarch can be attributed to habitat loss, non-native plants, pesticide use, and climate change.

While there are no quick fixes to solve these habitat issues, immediate action is needed now to help save the western monarch population. The sudden decline observed in 2018 means that we need to act now based on the available evidence while continuing to work on long-term research and conservation efforts. Urgent action is necessary because [research](#) has suggested that a population as low as the one seen in 2018 may result in a partial or total collapse of the western monarch migration.

The Xerces Society has developed the Western Monarch Call to Action, a set of rapid-response conservation actions to help the western monarch population. These steps to be done in the short-term (the next few weeks or months up to one year) are intended to prevent a total collapse of the western monarch migration. They are also meant to set the stage for long-term efforts such as the WAFWA plan and MJV Implementation Plan.

The Xerces Society's actions focus on restoring breeding and overwintering habitat for the western monarchs in California. Critical steps involve providing protection of overwintering sites and working with partners to restore overwintering habitat near the coast. Additionally, the Xerces Society is working with cities, farmers, and natural area managers to plant and restore habitat across the California Central Valley region, which is a major breeding and migration area. They are working to restore and add hedgerows on farms to provide essential nectar sources, milkweed for breeding, and pesticide-free refuge. They are also working with the USDA to conduct planting trials of milkweed and nectar plants to develop best practices for establishing these plants.

Continued on page 5

Western Monarch... Continued from page 4

The Xerces Society's Top 5 Actions to Help Save Western Monarchs

Top 5 Actions	Effort Needed RIGHT NOW	Effort Needed DURING THE YEAR (2019)
Protect and manage California overwintering sites	Halt the destruction of overwintering habitat	Create and implement overwintering site management plans
Restore breeding and migratory habitat in California	Plant nectar species, especially flowers that bloom in the early spring; plant native milkweed species which emerge earliest	Increase native milkweed and nectar plant availability for seeds and transplants; remove tropical milkweed and replace it with native species
Protect monarchs and their habitat from pesticides	Halt all cosmetic use of pesticides; seek out non-chemical options; push for the suspension of the use of neonicotinoids in the commercial production of milkweed plants	Reduce herbicide and insecticide use in and around overwintering sites and in key breeding regions
Protect, manage, and restore summer breeding and fall migration monarch habitat outside of California	Identify existing monarch habitat so you can work to protect it from destruction	Manage monarch habitat in a way that minimizes harm; restore monarch habitat, particularly in areas highly suitable for monarchs and where habitat has been lost
Answer key research questions about how to best aid western monarch recovery	Californians and Arizonans need to collect observations of monarchs and milkweeds, especially in the early spring (Feb-Apr)	Need eyes looking out for monarchs across the West, in particular in New Mexico, Colorado, Utah, Wyoming, and Montana

To read the Western Monarch Call to Action, visit <https://xerces.org/save-western-monarchs/>.

MAG Facilitator and Educator receives AJC Celebrating Teachers Award

Monarchs Across Georgia congratulates Stephanie Spencer, the [2018 Atlanta Journal-Constitution \(AJC\) Celebrating Teachers Award honoree!](#)

Stephanie Spencer is a MAG Educator Workshop Facilitator and Dekalb County teacher who has worked in education for more than thirty years. She received the 2018 Torch Bearers' Award for Excellence in Science Education for her work as an innovative science teacher who engages her students with hands-on, project based STEM activities that allow her students to relate classroom activities to the real world. She also received the Region II Teacher of the Year for Dekalb County in 2016.



Stephanie is currently the K-5 STEM teacher at Sagamore Hills Elementary School, where she has made efforts to certify the school gardens as a Wildlife Habitat, a Pollinator Habitat, and a Monarch Waystation. Furthermore, the school gardens are now part of the Rosalynn Carter Butterfly Trail.

As a certified Georgia Master Gardener and a facilitator for Monarchs Across Georgia, Stephanie has worked with students in second through fourth grades to create monarch butterfly research gardens, a bog/pollinator garden, and worm bins for composting. Her fifth graders even started their own plant business growing vegetables in the school's greenhouse.

She has received more than \$25,000 in grant money over her career. Most recently, Stephanie received a \$500 BEE grant from Dekalb County Federation of Garden Clubs and more than \$1,000 from Donors Choose, along with plant donations from Atlanta Botanical Gardens and Dunwoody Nature Center. Stephanie finds joy in providing her students with memorable learning experiences and makes it a priority to keep them engaged in nature, bring science to life, and share her excitement for learning and the outdoors. ♦

Great Georgia Pollinator Census August 2019

[Sign up now](#) to be a census taker for this historical initiative



Carpenter Bee (Xylocopa virginica)

Photo credit: Karan A. Rawlins, University of Georgia, Bugwood.org

WHAT IS THE POLLINATOR CENSUS? Bees, butterflies, and other pollinators play an indispensable part in fueling Georgia's agriculture, and now it is time to figure out the size of the pollinator population in our state. The Great Georgia Pollinator Census is set to take place on August 23rd and 24th, 2019. This will be a historical initiative to record the numbers and types of pollinators that are found in Georgia during the late summer season. The census program serves to educate Georgians about the importance of pollinators and the critical need of maintaining habitats that they can thrive in.

WHO IS THE ORGANIZER? The University of Georgia Cooperative Extension (UGA Extension) is spearheading this one-of-a-kind statewide pollinator count, with the aim of gauging the number of wild and domestic pollinators in the state, their population distributions, and health. Becky Griffin from UGA Extension is the pollinator census coordinator. She has modeled the program on the Great Backyard Bird Count, a similar citizen-science initiative by Cornell University. Ms.

Griffin runs a small-scale pollinator census, now in its second year, at fifty schools and community gardens across the state. This pilot scale study has helped her identify important differences between pollinators in urban and rural landscapes.

WHERE IS THE COUNT HAPPENING? The count will be held August 23-24, 2019 in backyards, school gardens, city areas, and forests across the state. Volunteer citizen-scientists are being recruited by UGA Extension, and information on counting criteria and training is also available on the [Great Georgia Pollinator Census website](#).

HOW TO COUNT? For a 15-minute period of time, census takers will focus their attention on a plant in their yard or garden that is known to attract pollinators. They will look for and count bumblebees, carpenter bees, small bees, flies, wasps, butterflies, and other insects. Then they will submit their findings using a simple online form.

WHERE TO FIND MORE INFORMATION? The website is also being used to list [events](#) being held around the state on the pollinator census, such as workshops on creating pollinator habitat, building nest boxes, and insect identification. The website also includes [Resources for Educators](#), such as sample lesson plans and more information on how a school STEAM program can be part of the pollinator census program. Additionally, educational snippets are being shared through the Georgia Pollinator Census Facebook page.

Counting instructions have been posted on the Great Georgia Pollinator Census [website](#) in the form of a Pollinator Census Counting and Insect Identification Guide. This guide includes an observation sheet to be completed by the participant, along with examples of the insects that are commonly seen with pictures and descriptions of their physical appearance. ♦



Eastern Tailed-Blue (Cupido comyntas)

Photo credit: Karan A. Rawlins, University of Georgia, Bugwood.org

Monarchs Across Georgia Recommended Best Practices

Monarchs Across Georgia (MAG) seeks to promote an understanding and appreciation of the natural life cycle of the monarch. Bringing a wild organism (butterfly) into the classroom or home for closer observation and study can be an essential component of this process. This should only be done in ways that are not harmful to individual butterflies or their population. **The best way to obtain monarch larvae is to plant native milkweeds in your garden or outdoor classroom.** Egg-laying monarchs are generally in Georgia during the months of April - May and again in August - September. The butterflies will find their host plants. It is then appropriate to move either eggs or caterpillars indoors to a study area or classroom. After the adult butterflies emerge, they should be released back into the environment from which they were removed.

MAG strongly discourages the purchase or release of any commercially-reared butterflies. Commercial rearing can result in genetically inferior organisms, reduction of genetic diversity, introduction of disease, inbreeding, and the introduction of species and genetics not native to the area. MAG does not promote hand-pairing to rear successive generations of butterflies as this also encourages inbreeding and genetically inferior species. It may also result in the release of butterfly species at times when they are not normally found in Georgia.

Due to a native milkweed shortage at nurseries, tropical milkweed, *Asclepias curassavica*, has been the only milkweed available for sale to gardeners eager to help the monarch butterfly. This is slowly changing due to consumer demand. Please see Monarchs Across Georgia's webpage [Native Milkweed Sources](#) for nurseries in the southeast that sell neonicotinoid-free native milkweed species appropriate for areas in the southeast. **MAG recommends phasing out tropical milkweed whenever possible by planting native milkweed species appropriate to your area. We also recommend cutting tropical milkweed back in the fall and winter months to decrease the potential risks* to monarchs.**

For additional information, we suggest reviewing these resources on our web page: <https://eeag.memberclicks.net/resources>.

- [Field Guide to Georgia Milkweeds](#)
- [Monarchs and Georgia's Gardeners](#)
- [Not All Milkweed Is Created Equal](#)
- [Why Grow and Sell Native Milkweed?](#)
- [*Potential Risks of Growing Exotic \(Non-Native\) Milkweeds for Monarchs](#)
- [Rearing Monarchs: Why or Why Not?](#)
- [Risks of Neonicotinoids to Pollinators](#)

Call for Committee Volunteers

ARE YOU INTERESTED in volunteering with the Monarchs Across Georgia (MAG) committee?

If so, please email mag@eealliance.org and let us know what volunteer opportunities interest you.

Here are the many ways that we could use your help!

- Write newsletter articles
- Become a MAG workshop facilitator & co-facilitate workshops
- Review grant applications
- Become part of our Speakers Bureau
- Post information on our web pages
- Help with an event (children's craft or answering questions)
- Become an active committee member and coordinate a project, such as...
 - Grant Administration
 - Newsletter Editor
 - Mexico Book Project
 - Plant Sales
 - Pollinator Habitat Certification
 - Volunteer Coordination

Calling for Native Plant Lists and Monarch Garden Plans

An update to the call for recommended monarch nectar plants for Georgia counties, and sample monarch garden plans.

In the previous issue of The Chrysalis, MAG had asked readers to send:

1. List of recommended native plants in their areas that monarchs use as a food (nectar) source.
2. Design plans for Monarch Gardens, with suggested layout and plant list of Georgia natives that work well in their area.

The purpose of this effort is to use the readers' collective knowledge on native plants and experience with monarch habitats and gardens. The goal is to provide a sample monarch garden plan and native plant list (for both gardens and wilder spaces) for each Georgia county. These would then act as a good starting point for Georgians who want to help save native plant and animal species by planting their own gardens. Furthermore, native plant gardens are essential to sustaining pollinator populations, especially in supporting monarchs and their migration.



Showy Goldenrod (*Solidago speciosa*)
Photo credit: George Coombs, Mt. Cuba Center, Bugwood.org

MAG is still accepting submissions in an ongoing effort to develop lists of native nectar plants preferred by monarch butterflies based on your observations across Georgia. The original call for submissions is available on Page 10 of [MAG's Fall 2018 newsletter](#). MAG invites you to continue to send your native monarch nectar plant lists and monarch garden design plans. Please submit your submissions to mag@eealliance.org.

Ellen Honeycutt, a self-described "average gardener with an above-average passion for gardening," has submitted a [native nectar plant list](#) based on her observations as well as other reports she came across on iNaturalist and Georgia Facebook groups. Ms. Honeycutt has reported the following as suitable for Cherokee, Fulton, Forsyth, Cobb, Gwinnett, and Dekalb counties.

Blazingstar (*Liatris* spp.) – The later blooming species are absolute magnets for southward migrating monarch butterflies. In my area, the only one left is *Liatris pilosa*, but I think if I had *Liatris microcephala* that they'd use it too. I rescued the *Liatris pilosa* from a nearby construction site, but I see *Liatris microcephala* for sale at plant sales. Other ones like *Liatris spicata* and *Liatris aspera* are done by now.

Goldenrod (*Solidago* spp.) – Any species you want to use would be of use to the monarchs (although by now, *Solidago odora* is mostly finished and *Solidago sphacelata* might be too). In my area, the following species are blooming: tall goldenrod (*Solidago altissima*), which is the aggressive one, be warned, gray goldenrod (*S. nemoralis*), erect goldenrod (*S. erecta*), showy goldenrod (*S. speciosa*), wrinkled goldenrod (*S. rugosa*), woodland goldenrod (*S. caesia*), and downy goldenrod (*S. petiolaris*), a personal favorite of mine.

Boneset/Thoroughwort (*Eupatorium* spp.) – This is one that I hadn't seen before but several people have reported [\(with pictures\)](#) monarchs on these plants, which is fantastic because they are so abundant on roadsides. Boneset (*E. perfoliatum*) is done for me, but going strong are the thoroughworts: *E. serotinum* and *E. hyssopifolium* are primarily blooming now but earlier flowers of *E. album* and *E. rotundifolium* might have been available.

Continued on page 9

Plant Lists... Continued from page 8



White Snakeroot (*Ageratina altissima*)
Photo credit: Ansel Oommen, Bugwood.org

Aster (*Symphotrichum* spp.) – There are many [pictures and reports](#) that they do love fall native asters like New England aster (*Symphotrichum novae-angliae*), aromatic aster (*S. oblongifolium*), late purple aster (*S. patens*), Georgia aster (*S. georgianum*), and even some of the [small white asters](#).

Along with the list of nectar plants suitable for various counties in Georgia, Ms. Honeycutt's [blog post](#) includes useful instructions for the layman to use "observational and investigational skills" to find out which nectar plants are blooming.

"Observational skills are personal observations. Investigational skills require finding observations reported by other people on sites such as iNaturalist. You don't even need a login to search [iNaturalist](#), just choose "Explore" and enter your search criteria (be sure to use Georgia, USA). Observations are listed by date (most recent first) and you can scroll through results in the time frame that you want (spring or fall, and then check the location). Plants are not usually identified so you might have to figure that out yourself (most of the reposts are on non-native plants because that is what people usually have in their garden: zinnia, lithonia, lantana, etc.)."

Visit Ellen Honeycutt's blog "[Using Georgia Native Plants](#)" for more information on how to identify plants and a variety of topics on gardening and native species. ◇



Blue Mistflower
(*Conoclinium coelestinum*)
Photo credit: John Ruter, University of Georgia, Bugwood.org

White Snakeroot (*Ageratina altissima*) – Formerly a *Eupatorium*, this is blooming nicely in my area now, so I went looking for pictures of [Monarch butterflies using it](#) and found plenty!

Joe Pye Weed (*Eutrochium* spp.) – Unless Joe Pye weed was pinched back, it is likely that using it in Georgia for a migration nectar source would be too late. Mine are done and everything that I see on roadsides is done by now. They would only help the earliest of any monarchs coming through. People have posted pictures of monarchs using it for nectar but I don't think Georgians should rely on it.

Blue Mistflower (*Conoclinium coelestinum*) – Also formerly a *Eupatorium*, I have this in abundance so I was thrilled to see several monarchs using it recently (and then several other people posted monarch pictures with it). This is easy to grow and tough as nails; its only downside would be having too much of it if you don't manage it.

Thistle (*Cirsium altissimum* and others) – Again, this one is on the edge of being available during the heaviest part of the migration. The earlier ones definitely have an opportunity to use this native thistle. This one I found through [posts by other people](#) but I was glad to know they use it because this type of flower is perfect for them.

Congratulations to the 2018 MAG Habitat Award Winners!

Habitat Award: Individual

The Monarchs Across Georgia 2018 Pollinator Habitat Award for an Individual is being awarded to **Karin Hicks**, the owner of **Southern Meadows**, a private garden in Talmo, GA.

At Southern Meadows, Karin pursues gardening with the purpose of educating visitors. The property is open to garden clubs, photographers, environmental groups, and the general community for tours. Southern Meadows is therefore able to share what they do to support pollinators, birds, and other native wildlife, all while growing food to eat and creating a sustainable landscape.

Southern Meadows received the MAG Pollinator Habitat Certification in 2013. Since then, they have been busy repurposing lawn areas, removing invasive plants, and planting native trees, shrubs, and flowering perennials that support pollinators and birds. The property is home to native bee nesting sites, meadow gardens with native grasses and perennials to support pollinators through all seasons, host plants for native moths, a rain garden, and a shade garden planted with native trees, shrubs, and perennials.

Karin participates in various Citizen Science programs, has more than thirty native milkweeds on site, and incorporates numerous sustainability practices. Southern Meadows continues to grow as more land is purchased and reclaimed to support wildlife. [Karin's blog](#) provides a documentation of her garden journey of creating a native plant haven and showcases her efforts in creating a harmony between people, plants, and animals.



Habitat Award: Public

The Monarchs Across Georgia 2018 Pollinator Habitat Award for a Public Facility is being awarded to the **North Marietta Neighborhood Community Garden (NMNCG)**, which serves as an outdoor classroom for Head Start students and parents, Girl Scout and Brownie Troop projects, and high school environmental clubs.

The NMNCG's community outreach provides information to community garden members and neighbors who want to learn eco-friendly gardening. They host visitors including garden clubs, Master Gardener interns, UGA Extension guests, Master Gardeners from other counties, and interested visitors. They hosted the Cobb Master Gardener 2014 Garden Tour and the 2018 American Community Garden Association National Conference Bus Tour.



They have added a new herb garden with caterpillar host plants, a Monarch Meadow, two metal picnic tables for garden activities, a shallow solar bird bath, solitary bee houses, and additional Children's Garden raised beds. They have also expanded the pollinator garden, increased the pollinator plant collection, and added a wooden pergola seating area for classes and trellis at the Children's Garden entrance. Furthermore, they have updated their pollinator inventory and labels and now have an informational pollinator poster display and two permanent butterfly signs.

The NMNCG shares information at numerous festivals and hosts many educational pollinator events. It is also a demonstration garden and open for members of the community and schools to observe eco-friendly garden practices. ◇

Monarchs Across Georgia brings Estela Romero to Georgia!

MONARCHS ACROSS GEORGIA was proud to welcome Señora Estela Romero from Angangueo, Michoacán, Mexico to be a part of the Monarch Migration Tour in September 2018. She spent a week here in Georgia, where she touched the lives of more than 1,700 students and adults in four counties, sharing her life experiences with the monarchs and the cultural traditions of Mexico.

Students from each of the five schools Estela visited, as well as adults who participated in her presentation at The State Botanical Garden of Georgia, created paper butterflies to participate in the [Symbolic Migration](#) project. These paper butterflies traveled to Mexico in the fall; they are "overwintering" there now, and will return this spring, mimicking the migration of the real monarchs. Estela delivers these symbolic monarchs (and books from [Monarchs Across Georgia's literacy project](#)) to schools surrounding the Mexican monarch sanctuaries. While at these schools, she also facilitates environmentally appropriate lessons, and this year's lesson is about pollinators. Read her [Symbolic Migration blog posts](#) to learn more.

Symbolic Migration

[Journey North](#) created the Symbolic Migration twenty-three years ago, but this is the first year that it was coordinated through Monarchs Across Georgia. If you are interested in participating in next year's Symbolic Migration, the revised Teacher Packet will be available in early August 2019, with a postmark deadline of October 11, 2019. Sign up for [News Updates](#) to stay informed!

If you would like to sponsor a classroom or financially support the Symbolic Migration, please visit the [Environmental Education Alliance of Georgia's donation page](#). Your donation to this 501(c)(3) nonprofit organization is fully tax-deductible. ◇



A commemoration of Estela's 2018 USA visit - a t-shirt design with a list of places she visited.

Pollinator Habitat Certification

Do you enjoy watching and studying caterpillars on their host plants; searching for chrysalides hidden from predators; observing butterflies and hummingbirds flitting from flower to flower? Does your schoolyard, workplace or backyard have bushes, trees and flowers that provide host plants, nectar and protection for butterflies, bees, hummingbirds and other pollinators? Is there a source of water/puddling areas for thirsty butterflies? Are there places for them to roost at night? If so, you might want to look into registering your backyard/schoolyard/workplace habitat with **Monarchs Across Georgia's Pollinator Habitat Program**. No garden is too big or too small!

For more details and to download the form, visit the [Pollinator Habitat Certification webpage](#).

Congratulations to the latest gardens to be certified!

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SPOTLIGHTS... For Your Pollinator Garden

Mourning Cloak *Nymphalis antiopa*

Resembling the traditional cloak worn when one is in mourning, the *Nymphalis antiopa* belongs to the *Nymphalidae* family of brush-footed butterflies, in which the front pair of legs is greatly reduced and appears hairy and brush-like. Its color and resemblance to a cloak has led to the common name "Mourning Cloak" in North America. This species is also unique in being a very long-lived butterfly species, living up to a year. Many also know it as the state insect of Montana.

Appearance: Mourning cloaks are purple-black/maroon in color on the upper side with a wide, yellow border outer margin that has a row of iridescent blue spots on the inside edge. The undersides of their wings are cryptically colored, dark brown with lighter brown edges. The camouflage-like coloring is useful when the butterflies want to bask in direct sunlight in the colder regions.

Distribution: Mourning cloaks are common in most of North America, extending from just south of the Canadian tundra to central Mexico, but they are rarely seen in the Gulf States and peninsular Florida. They are also native to temperate Eurasia and are known by different names in various regions. They are known as the "Camberwell Beauty" in the United Kingdom.

Life Cycle: Adult mourning cloak butterflies emerge from their winter hibernation to mate in the spring, with males perching in sunny openings during the afternoon waiting for a receptive female to fly by. The females lay clusters of eggs together on a single tree or shrub, in a mass that surrounds a twig.

The host trees for the caterpillars include willows such as black willow, weeping willow, silky willow, American elm, cottonwood, aspen, paper birch, and hackberry. Upon hatching, the caterpillars live in a communal web and eat the leaves of the host plant. Then they pupate and emerge as adults in June or July.

Although adult butterflies may be seen throughout summer, most enter aestivation shortly after emerging from the chrysalis. Aestivation is the summer equivalent of hibernation, when they lie dormant in a hollow tree to escape the heat and lack of moisture. The butterflies then re-emerge in the fall to feed and prepare for the winter hibernation. Some mourning cloaks migrate south in the fall. They may choose tree cavities, areas under loose tree bark, or even unheated buildings to hibernate, looking to protect themselves from winter winds as well as birds and squirrels.

Food: The adult mourning cloak butterflies feed on tree sap, especially that of oaks. They walk down the tree trunk to the sap and feed head downward. They also prefer fermenting fruit and only occasionally visit flowers. They visit mud puddles and even animal droppings extracting salts or other nutrients. They also take advantage of sap wells left in trees by drilling sapsuckers (a kind of woodpecker).

Habitat: Mourning cloaks are a notable species seen throughout the U.S. in habitats including woods, parks, suburban areas, and riparian areas. Their caterpillars are known to cause damage to shade trees – defoliating willows, elms, poplars, hackberries, and others.



Photo credit: Steven Katovich, USDA Forest Service, Bugwood.org



Photo credit: Ansel Oommen, Bugwood.org



Photo credit: Whitney Cranshaw, Colorado State University, Bugwood.org

SPOTLIGHTS... For Your Pollinator Garden

Butterfly Feeders How to feed butterflies that prefer tree sap and rotting fruit

Some butterflies, especially the brush-footed nymphalids (Family *Nymphalidae*) feed on sugary/yeasty foods like sap and rotting fruit, rather than nectar from flowers. The common fruit-feeding butterflies include anglewings (commas and question marks), hackberry emperor, tawny emperor, the viceroy, orange-spotted purple, red admiral, and the mourning cloak. Many of these butterflies are typically found in forests or edges of forests. If you have these habitats around your garden, you might attract some of the fruit-feeding butterflies to your feeder. They are likely to be attracted to the feeder mainly in early spring and in fall. During some very dry periods, the feeders may even attract butterflies that normally feed on flowers.



Three mourning cloaks, an eastern comma, and a gray comma feeding on sap from a tree stump. Photo credit: http://castle.eiu.edu/bflyclub/Grand_Prairie_Butterfly_Club/Basics_of_Bugging/Entries/2011/6/15_Butterfly_Feeders.html

The only problem with feeders is that other animals will also want the fruit. Ants and fruit-eating mammals such as raccoons may also be attracted to the feeder. Yellowjacket wasps and bald-faced hornets also enjoy fruit in the fall, and they sometimes chase the butterflies to claim the food. Hanging the feeder can keep it away from some mammals.

What Kind of Food to Place in a Feeder

Many types of fruit will be good for the butterflies - such as melons (watermelons, cantaloupe, and honeydew), banana, apple, orange, and mango. The butterflies prefer overripe fruit, so this might be a great way to use rotting fruit. Rinds of fruit can also be placed in a feeder.

How to Make a Feeder

Making a feeder is an easy task – use a container that can hold fruit and is accessible to butterflies. A plate or pie tin will work, or a feeder with a bottom that drains may be preferable to facilitate easy cleaning. A hanging feeder that is limited to approximately 1 sq. ft. will be light and easy to handle. The steps to make a basic hanging feeder are as follows:

- Make a frame out of 1"x 1" wood.
- Staple or tack window screening to the bottom of the frame.
- To hang the feeder, use some screw eyes in each corner of the frame and attach wire or string to the eyes.
- Bring the four wires or strings together and form a single connection point that you can use to hang from a hook, a shepherd's crook, or similar structure.

Where to Locate the Feeder

Butterflies like to be out in the sun and don't like windy areas, so areas in your yard or garden that are sunny but without wind are best for hanging the feeder. If you hang the feeder in a place that is easily visible from your house or office, you can watch and keep track of the butterflies that visit. If hungry butterflies are in the area, they will be able to find the feeder by the scent of fruits. When the fruits dry out or become too moldy, replace them with another batch.