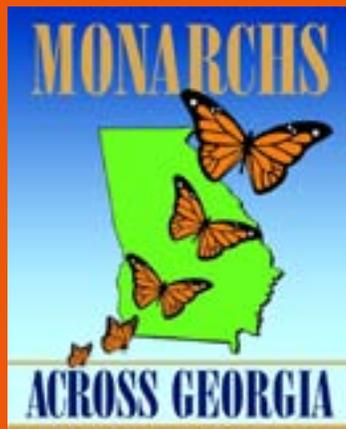


# The Chrysalis

Emerging News from Monarchs Across Georgia

A Committee of the Environmental Education Alliance of Georgia



## 2015 Monarch Pre-Migration Status

by Chip Taylor, Director, Monarch Watch

*This article is reprinted from the July 2015 Monarch Watch PreMigration Newsletter*

“Recalculating! Recalculating!” That’s what I hear from the GPS system in my car every time I make a wrong turn. The monarch trip that I plotted for this season was heading toward a significant increase in the population. Unfortunately, all the data I have been following since posting my optimistic Monarch Population Status report via our Blog on the 6th of May has told me to recalculate the expectations for the fall migration and the overwintering population. As of this writing (16 July), it appears that the fall migration and the overwintering numbers will be similar to those seen last year (1.13 hectares). A substantial increase in the number of migrants and the area of the forests in Mexico occupied by overwintering monarchs is highly unlikely. I was expecting much better.

Due to the lower temperatures encountered by the first generation monarchs moving north and northeast during May and early June, the arrival in the northern breeding area was delayed and less than optimal. Monarchs reached Minnesota and portions of western Wisconsin late and in modest numbers, the arrivals east of central Wisconsin were delayed even more, and the number of first sightings reported to Journey North was quite low. It was worse for the Northeast with few monarchs being seen until well into June. My monarch recalculations now tell me that the number of monarchs in the fall migration will be similar to those seen and tagged last year from the eastern Dakotas to perhaps western Michigan. Lower numbers will be seen from eastern Michigan to western Pennsylvania and still lower numbers will be found in the northeast. And the migration will be late - this will be the third later than normal (as defined by migrations from 1992-2012) in as many years. Why the migration has been late the last three years is not clear. Do these late migrations reflect long-term changes in the weather patterns that drive the monarch numbers or are they due to a series of chance events? Time will tell. Whatever the case, these late migrations show us that the migration and population growth throughout the breeding season are driven by the temperatures and rainfall that occur from the moment monarchs leave the overwintering sites (late February through early April) to the time the last monarchs arrive at the overwintering sites (December). That said, the numbers of monarchs we’re seeing now are also a reflection of the amount and quality of milkweed and nectar plant habitat that remains for the breeding population.

### Upcoming Events

**Chattahoochee Nature Center**  
**Fall Native Plant Sale**  
 September 25-26  
 Roswell, Ga

**Dunwoody Nature Center**  
**Fall Plant Sale**  
 Online ordering closes  
 September 30  
 Pickup October 9-10  
 Dunwoody, Ga

**Plains Chautauqua**  
 October 9-11  
 Plains, Ga

**Outdoor Learning Symposium**  
 November 13  
 Fortson 4-H Center,  
 Hampton

For more information about these events or to register, please visit [www.eealliance.org/mag-events](http://www.eealliance.org/mag-events)



### Migratory Butterflies

by Trecia Neal, Fernbank Science Center & Monarch Watch Conservation Specialist

The monarch has been in the headlines for the past two years because of its dramatic decline in numbers. The population has declined by almost 80% from a high of over one billion monarchs in 1996, to 56.6 million in 2014. There are a number of reasons the population has declined including habitat loss, early-year storms that have devastated the wintering population, and the adoption of glyphosate corn and soy across North America to the exclusion of non-GMO corn. The result of this adoption of GMO corn has wiped out the primary food source for monarch caterpillars – milkweed. Luckily, this dramatic decline in numbers has galvanized our government and citizens to work and provide much-needed habitat for the monarch: habitat which benefits other pollinators as well.

However, there are many other interesting migratory butterflies in the world. Butterflies migrate for several reasons. Butterflies belong to the class Insecta which means they are ectotherms. Ectotherms cannot regulate their own body temperature. Instead, the outside temperature determines it. For butterflies, optimum temperature for flying is between 82° and 102°F. Below 60°F butterflies cannot fly. This means in marginally cool weather, butterflies must warm their body in order to fly. They can do this two different ways: 1) with behavioral tactics by shivering their thorax, or 2) by basking in the sun on a warm rock. A nice flat rock in a sunny spot can be very beneficial for butterflies on a cool, cloudy day. Because they are ectotherms, winter proposes a challenge. Some butterflies overwinter as eggs, some as caterpillars, some as chrysalids, and some even as adults. However, some butterflies use a different strategy and will migrate to warmer temperatures where their nectar food sources are still available. These are not usually huge migrations, and it is not a two-way migration like the monarch does.

Tropical butterflies, that don't have to battle cold temperatures, will also migrate. However, they migrate for a different reason. These butterflies migrate to establish new colonies. If they stay in one place for too long, the caterpillars will consume all of their host plants. This will leave no place for the adults to lay eggs and the local colony will die out. Thus, migrating a short distance is an excellent evolutionary behavioral strategy for survival of the species.

#### A list of migratory butterflies:



Little Yellow  
*Pyrisitia lisa*



Gulf Fritillary  
*Agraulis vanilla*



American Lady  
*Vanessa virginiensis*



Painted Lady  
*Vanessa cardui*



Red Admiral  
*Vanessa atalanta*



Common Buckeye  
*Junonia coenia*



Monarch  
*Danaus plexippus*



Long-Tailed Skipper  
*Urbanus proteus*



Clouded Skipper  
*Lerema accius*



Fiery Skipper  
*Hylephila phyleus*



Sachem  
*Atalopedes campestris huron*



Ocola Skipper  
*Panoquina ocola*



### A Tiny Butterfly makes a Big Comeback

A passage in Vladimir Nabokov's novel , describes a group of Karner Blue butterflies: A score of small butterflies, all of one kind, were settled on a damp patch of sand, their wings erect and closed, showing their pale undersides with dark dots and tiny orange-rimmed peacock spots along the hindwing margins; one of Pnin's shed rubbers disturbed some of them and revealing the celestial hue of their upper surface, they fluttered around like blue snowflakes before settling again."

the Karner blue was practically wiped out in Indiana, Ohio, and New Hampshire. According to the U.S. Fish and Wildlife Service, the Karner blue has declined by 99 percent over the past 100 years, with 90 percent of the decline occurring in the last 15 years. However, the tiny silvery butterflies have recently made a comeback after more than 20 years of habitat restoration projects and breeding programs.

Nabokov understandably had an attachment to the Karner Blue; after all, it was he who named it after a hamlet in eastern New York state in the 1940's. The Lolita author's obsession with the tiny butterfly led to his research that established the relationship between the Karner blue population and the pine barrens it lives in. This dry, sandy habitat is dependent on wildfires to eliminate encroaching invasive species and to revitalize the acidic soil and encourage the growth of flowering plants, including the Karner blue's host plant, the wild blue lupine.



A Karner Blue on its host plant, the blue lupine.

By the time Nabokov named it, the Karner blue population was already declining throughout its range from Minnesota to New England. When the Endangered Species Act was passed in 1973, the Karner Blue was one of the first animals on the list. Nabokov himself is considered a father of the Endangered Species Act because it was his research that led to habitat and restoration initiatives.

In the pine barrens of New York, where Nabokov "discovered" the species, efforts have been focused on restoring the original ecology by removing invasive species through fire, which also encourages the growth of fire dependent species such as pitch pine, scrub oak, and the wild blue lupine. Since 2001, scientists in New York have sent adult Karner blues to a facility in New Hampshire where they are bred. Some of the pupa are then sent back to New York to be hatched and released. These individuals have colonized areas beyond the 21 sites they were released in. The population has steadily increased from about 200 in 1991 to over 14,000 now. The number is so promising that scientists speculate that the federal threshold for population recovery will be met by 2016.

Though the success of the project in New York is grounds for celebration, the Karner blue is still struggling in other areas of its native habitat. At Indiana Dunes National Lakeshore in Indiana, habitat restoration hasn't been enough. In fact, no individuals were found this year. Other populations exist in Illinois, Michigan, Minnesota, New Hampshire, Ohio, and Wisconsin, but they are not yet considered viable.

Between land development and the suppression of wildfires,

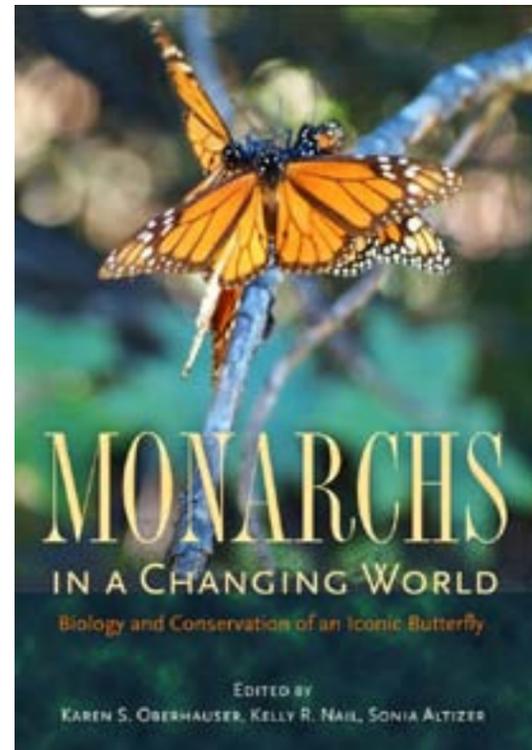
## State Parks Pollinator Project

Monarchs Across Georgia has partnered with Georgia Department of Natural Resources, Friends of Georgia State Parks & Historic Sites, U. S. Fish & Wildlife Service, Fernbank Science Center and the Georgia Piedmont Chapter of North American Butterfly Association (NABA) to bring demonstration pollinator gardens to 52 of Georgia's State Parks and Historic Sites. The installation will occur on Your State Parks Day, September 26, 2015 in conjunction with National Public Lands Day.

By creating the plant list and installation design for the four-by-eight foot raised bed, all of the gardens qualify for the Monarchs Across Georgia Pollinator Habitat Certification and will receive a certificate and sign to display proudly at the site. We also provided instructions for building the raised bed, choosing and preparing the site, recommendations for soil and mulch, plant installation and maintenance.

Free admission to the Park in exchange for volunteering on September 26 is being offered by the Friends. For more details, visit [Friends of Georgia State Parks & Historic Sites](#). We encourage you to participate and become part of the solution to the significant decline in our nation's pollinator populations. Then create a pollinator garden at home.

For plant lists and installation designs, visit [Sample Pollinator Gardens](#). To learn how to certify your garden, visit [Pollinator Habitat Certification](#).



## Recommended Resource

### *Monarchs in a Changing World*

Monarch butterflies are among the most popular insect species in the world and are an icon for conservation groups and environmental education programs. Monarch migration, behavior, and ecology have been studied for decades, yet many aspects of monarch biology have only come to light in the past few years. *Monarchs in a Changing World* summarizes recent developments in scientific research, highlights challenges and responses to threats to monarch conservation, and showcases the many ways that monarchs are used in citizen science programs, outreach, and education. It examines issues pertaining to the eastern and western North American migratory populations, as well as to monarchs in South America, the Pacific and Caribbean Islands, and Europe. The target audience includes entomologists, population biologists, conservation policymakers, and K-12 teachers.

Contributors to this book include Monarchs Across Georgia steering committee members Kim Bailey and Susan Meyers. It was edited by Dr. Sonia Altizer of the University of Georgia and Dr. Karen Oberhauser of the University of Minnesota, both on the Monarchs Across Georgia advisory committee.

## June 2015 Monarchs Across Georgia Workshop in Plains, GA

Teachers from across the state traveled to Plains, Georgia for a two-day workshop in June. The workshop was offered through the generous support of U.S. Fish and Wildlife Service and the Rosalynn Carter Butterfly Trail. Information and hands-on activities were presented by Trecia Neal and Susan Meyers with Monarchs Across Georgia. Teachers learned about habitat for monarchs, testing for OE parasites, and practiced tagging butterflies. Curriculum established by the Monarchs in the Classroom (University of Minnesota) was used in the workshop as well as activities developed by Monarchs Across Georgia. The teachers received classroom resources to take back and use in their classroom as well as native nectar and host plants to establish a school butterfly garden.

Deborah Harris with the U.S. Fish and Wildlife Service helped coordinate the workshop and arranged for Cindy Dohner, Director for the Southeast Region, to speak to the group about the importance of establishing habitats for pollinators. Annette Wise, founder of the Rosalynn Carter Butterfly Trail, shared the history of Plains which included a guided bus tour highlighting some of the butterfly gardens on the trail. Penny Smith with the Georgia Visitors Center welcomed the group to the butterfly garden at their site. Trecia Neal demonstrated proper planting techniques and then teachers planted native nectar and host plants in a new section of their butterfly garden.



One of the highlights of the workshop was a surprise visit by President and Mrs. Jimmy Carter. The teachers listened as President Carter talked about Julia Coleman, a teacher at Plains High School that impacted his life. Mrs. Carter spoke to the group about their love for nature and how she wanted to have a butterfly garden to establish habitat for monarch butterflies. She told the teachers that she was pleased that so many people in Plains were interested and wanted to be on the trail around Plains. Now, the Rosalynn Carter Butterfly Trail has grown to include gardens across the United States, Canada, and Japan. If you would like to join the trail, you can find information about the trail and an online registration form at [www.jimmycarter.info](http://www.jimmycarter.info).

**Trecia Neal with Monarchs Across Georgia will be presenting two sessions at the upcoming Plains Chautauqua Weekend Event on October 10th. The theme for the weekend event is the Rosalynn Carter Butterfly Trail: Connecting Nature and History. Dr. Chip Taylor, founder of the Monarch Watch, will be the keynote speaker. Details about the event and sessions are online at [www.plainschautauqua.com](http://www.plainschautauqua.com). Spaces are limited due to the size of our facilities, so book early!**



## Monarchs Across Georgia Pollinator Habitat Grants - Past, Present, and Future

Monarchs Across Georgia through the generosity of the U.S. Fish and Wildlife Service has been able to award Pollinator Habitat Grants of varying amounts over the past four years to thirty-two schools or organizations totaling \$24,750.



We are excited to announce the most recent recipients and look forward to following their progress toward goal over the coming fiscal year. Congratulations to the following organizations!

### \$1,000 Grant Recipients

- Autrey Mill Nature Preserve and Heritage Center, Johns Creek
- Blue Heron Nature Preserve, Atlanta
- Briarlake Elementary School, Decatur
- Chalker Elementary School, Kennesaw
- Friends of Springbrook Park, Decatur
- Keep Marietta Beautiful, Marietta
- Oconee County Middle School, Watkinsville
- Peachtree Charter Middle School, Dunwoody
- Richmond Hill Montessori Preschool, Richmond Hill
- The Paideia School, Atlanta
- W.R. Coile Middle School, Athens

### \$500 Mini-Grant Recipients

- Eastside Elementary School, Dalton
- Kinchafoonee Primary School, Leesburg
- LaFayette Middle School, LaFayette
- Mossy Creek Elementary School, Cleveland
- Robinson Elementary School, Dawsonville

We now have additional funding available and encourage you to apply online by November 15, 2015. [All of the details are available on our webpage](#) including a Template in Word format on which you can read and record your answers in advance. Then it is simply a matter of cut and paste to the online form. Should you have any questions not answered on the web page, contact the Grant Administrator at [magrant@eealliance.org](mailto:magrant@eealliance.org).

## 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. For more details and to download the form visit [www.eealliance.org/mag](http://www.eealliance.org/mag). No garden is too big or too small!

Congratulations to the latest gardens to be certified:

**Rowan Extension County, Salisbury, NC**

**Mill Creek Nature Center, Buford**

**Mason Elementary School, Duluth**

**Briarlake Elementary School, Atlanta**

**Virginia Linch, Eatonton**

**GFWC Lilburn Women's Club, Lilburn**

**Cherokee Charter Academy, Canton**

**Peachtree Charter School, Dunwoody**

**Global Growers Network, Decatur**

**Academe of the Oaks High School, Decatur**

**Richmond Hill Montessori, Richmond Hill**

**Thunderbolt Tree Commission, Thunderbolt**

**The Paideia School, Atlanta**

**Kinchafoonee Primary School, Leesburg**

**Friends of the Greenhouse, Leesburg**

**McFarlane Nature Park, Marietta**

**Dunwoody Nature Center, Dunwoody**

**Deborah O'Leary, Silver Spring, MD**

**The Lovett Lower School, Atlanta**

**Penny Lewis, Sandown, NH**

**N. Marietta Community Garden, Marietta**

## Mexico Book Project 2016



In 2004, Monarchs Across Georgia began traveling to Mexico in an effort to educate teachers and the public about the magnificent migration of the monarch butterfly and the unique culture and people of Mexico. For eight years, educators and other interested people from Georgia and all across the United States and Canada traveled to the monarch colonies and learned about what was happening in the local regions. They also visited the local schools, where they donated books and much needed classroom supplies, purchased with money raised by trip participants. It was a wonderful chance for the students in Mexico to share with us what they know about the monarchs, and for us to tell them how important the monarchs are to us, and how much we appreciate their taking care of the monarchs during the winter months.

Since 2012, the books donated through MAG and Journey North have been delivered by Journey North's Estela Romera to the classrooms that also participate in the [Symbolic Migration](#). Estela lives in Angangeo, a small town in Michoacan that houses one of the largest colonies of wintering butterflies – El Rosario. Estela serves as Journey North's courier, and has done a wonderful job of delivering the books and reading to the children when she delivers the Journey North mail. She picks these books out specifically for the students on a bus trip she takes to Mexico City. Most of these schools don't have libraries, and much of their reading material has come from the 11 years' worth of donations by Monarchs Across Georgia.

If you are interested in donating to the Monarchs Across Georgia Book project, allowing us to send other book titles to the schools in the areas surround the monarch sanctuaries, please visit the [MEXICO BOOK PROJECT DONATION FORM](#). The average cost of one book is about \$8. The deadline for donations is November 1, 2015. Donations received after this date will be included in the 2017 project.

Ba Rea, an accomplished author and artist, has written several children's books about monarchs. For the past several years, she has donated her books to the Mexico project. She is once again partnering with Monarchs Across Georgia to bring more books to Mexico. The students who live near the monarch reserves in Mexico are always excited to see the monarchs in the winter, but they hardly ever get to see what many children in the United States and Canada get to see: caterpillars eating milkweed, turning into chrysalids and emerging as adult butterflies. Ba's book *Monarch! Come Play with Me* tells the story of the monarch life cycle from a child's point of and is written in Spanish and English. If you would like to purchase this book to send to Mexico, visit [Bas Relief LLC](#).

Thank you so much for your interest and help with this project. The more we nurture the love these students have for the monarch, the better the monarch's chance of survival will be.

*"Plans to protect air and water, wilderness and wildlife are in fact plans to protect man."*  
Stewart Udall

## MAG Service Award Nominations Open!

Do you know of an individual or organization that has made an extraordinary contribution in the field of monarch education, conservation, and/or habitat restoration in the state of Georgia this year? Monarchs Across Georgia is looking for some outstanding volunteers for the 2015 Service Award!

The following are eligible for nomination: Schools, educational institutions, individual teachers, non-governmental and governmental organizations, for-profit and not-for-profit entities, parents, principals and community volunteers. Nominees are not required to be members of the Environmental Education Alliance of Georgia. Awards will be announced at the 2016 EEA Conference at the Gwinnett Environmental & Heritage Center in Buford, Georgia on March 4-5, 2016. A donation to the Monarch Butterfly Fund will be made in the name of the award recipient.

See [our award page](#) for more information or to submit a nomination. All nominations are due January 7, 2016.

## SPOTLIGHTS... For Your Pollinator Garden

### Little Bluestem (*Schizachyrium scoparium*)

Little bluestem (also known as beard grass) is an ornamental grass that forms dense mounds with erect tufts up to 4 feet in height. The name comes from the blue-green stems that appear in spring and summer. These will turn a rich purple-bronze color topped with white seed tufts in the fall and persists through the winter.

This grass is a wonderful way to add texture to your native garden, as it prefers well-drained soil and full sun. Plant it so it is backlit by the sun to best show off the silvery seed heads. The seeds are easily dispersed on a windy day, so gardeners may find seedlings growing in other areas. This grass can also be divided in the spring to propagate. In the wild, it is a prairie grass that attracts butterflies and seed eating songbirds, as well as other wildlife that use the dense foliage for cover.



Little bluestem shows off its seasonal array of colors in summer, fall, and winter.

### Grass Skippers

#### (Subfamily Hesperinae)

Skippers are a large family of butterflies that were named for their quick, darting flight. In North America there are nearly 300 species, though they are even more common in the tropics of Central America. They are easily mistaken for moths due to their stocky bodies, small size, and brownish-orange coloring. At rest, skippers often hold their forewings angled over the hindwings. The caterpillars are easily distinguished from other species by large heads that are separated from the body by a constricted "neck". Skipper caterpillars generally feed at night and rest during the day in a rolled up leaf that has been tied with silk.

A subfamily within the skippers are the grass skippers, who (as the name suggests) hosts on grasses and sedges. Most grass skippers overwinter as larvae and pupate in early spring. Prior to pupating, the caterpillars spin a cocoon from silk and incorporate wax from their bodies into the walls. This likely waterproofs the cocoon and protects the pupa from pathogens and other enemies, although this ecology is not well understood. Grass skippers often shelter at ground level, so some species can even be found in lawns.



Dusted skipper adult



Silver-spotted Skipper caterpillar sheltering in a rolled leaf tied with silk.



Chrysalis of the Wild Indigo Duskywing