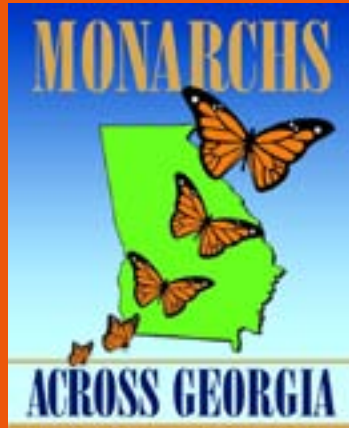


The Chrysalis

Emerging News from Monarchs Across Georgia

A Committee of the Environmental Education Alliance of Georgia



Upcoming Events

EEA Annual Conference

March 20-21, 2015
Rock Eagle 4-H Center, Eatonton

2015 Urban Forest Festival

April 11, 2015
Outdoor Activity Center, Atlanta

Cobb County Master Gardener Plant Sale

April 24-25, 2015
Jim Miller Park, Marietta

Plant Sale

May 9, 2015
Green Meadows Preserve,
Powder Springs

Monarchs in the Classroom Educator Workshop

June 15-16, 2015
Plains Community Center, Plains

Celebrate Pollinator Week!

June 15-21, 2015
Highlight and share the importance of bees, birds, butterflies and bats.

Outdoor Learning Symposium

November 13, 2015
Fortson 4-H Center, Hampton

For more information about these events or to register, please visit www.eealliance.org/mag-events

Will Monarchs Be Protected Under the Endangered Species Act?

The 2014-2015 migrating monarch population registered a modest increase after last year's record low numbers. The success of the population is measured by the number of hectares (ha) occupied by the colonies overwintering in Mexico. In 2013-2014, the number reached a dismal low of 0.67 ha. This year the number increased to 1.13 ha; an improvement, but still showing an overall decline of 82% from the 20-year average. Populations of this size are very vulnerable to winter storms and poor breeding conditions. Because of this alarming downward trend, a partnership between The Xerces Society, the Center for Biological Diversity, the Center for Food Safety, and scientist Lincoln Brower was formed and submitted a formal petition to the U.S. Fish and Wildlife Service (USFWS) in August 2014, requesting that the migrating population of the monarch be listed as "threatened" under the Endangered Species Act, which means that it is "likely to become endangered in the foreseeable future through all or a significant portion of its range." The criteria for the decision to "list" will involve the evaluation of factors including the threat to or present destruction of habitat, disease, and inadequate regulatory mechanisms. This process could take as long as twelve months after findings are reviewed, comments are submitted, and a hearing is held. A green lighted classification would provide various protections, such as against adverse effects of federal activities, restrictions on the taking, selling, or transporting of species; authority to develop and carry out recovery plans; authority to purchase habitat; and federal aid to state wildlife agencies.

The decline of the monarchs has been partially attributed to the widespread planting of genetically-modified, herbicide resistant crops such as soybeans and corn in the Midwest, the critical summer breeding area for monarchs. Any herbicides applied for weed control essentially wipes out the milkweed that typically grows in these fields, eliminating the monarch caterpillar's only source of food. It is estimated that 165 million acres of breeding habitat have been lost. While there has been a movement for homeowners to plant milkweed, well-meaning citizens often choose the wrong species (*Loss of migratory behaviour increases infection for a butterfly host*) or pesticide treated plants (*Neonicotinoids in Your Garden*), which can actually harm the population in the long run (see page 7 for more details). Logging in the monarch's winter habitat in central Mexico has also been a concern. Fortunately, Mexican authorities have made great progress reducing the amount of logging in these forests.

USFWS recently allocated \$2 million of funding for monarch conservation that includes restoring over 200,000 acres of habitat, supporting over 750 schoolyard habitats and pollinator gardens, education and outreach activities, and preserving native seeds. While most of the funds will be allocated to the central flyway areas of the Midwest (namely in Texas and Oklahoma), a small portion has been allocated to Georgia and the southeastern states. This will include expanding the Rosalyn Carter Butterfly Trail and working with private companies in the Southeast to restore monarch habitat on corporate lands.

Monarchs Across Georgia is proud to announce a partnership with the Rosalynn Carter Butterfly Trail

The Rosalynn Carter Butterfly Trail was established in April 2013 as a result of Mrs. Carter's desire to bring awareness about the conservation of butterflies and their habitats and because of her love of nature. There are eleven public butterfly gardens located in Plains that constitute the Trail but you can join! The Trail continues to grow and includes public, private and school gardens scattered across the United States, Canada and Japan. The Rosalynn Butterfly Trail is one of the off-site student programs of the Jimmy Carter National Historic Site Education Program, a partnership between the Georgia Department of Education, Sumter County Schools and the National Park Service.

If you are already a Monarchs Across Georgia (MAG) certified Pollinator Habitat, we encourage you to add your name to the growing list of Trail members. Even if your garden is not certified by MAG but you are providing nectar plants (flowers) as an adult butterfly food source and host plants, such as milkweed or parsley, on which butterflies lay their eggs, you can [join the Trail](#). There is no fee to join but after receiving your e-mail confirmation, you can order an 8"X11" metal sign with the Trail's logo and verbiage by contacting Annette Wise in the Georgia Department of Education, Plains Field Office at plainsed@jimmycarter.info. The cost of the sign is \$25.00 which includes postage.

To learn more about these programs, visit the links below.

[Jimmy Carter NHS Education Program](#)
[Rosalynn Carter Butterfly Trail](#)

[MAG Pollinator Habitat Certification](#)
[MAG Resources](#)



**Jimmy Carter
Education Program**



*Rosalynn Carter
Butterfly Trail*

2014 Mexico Book Project Updates

Thank you to all of the generous donors who gave to the 2014 Mexico Book Project! After raising our goal of \$500, over a hundred books were donated to ten different schools in central Mexico.



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 <http://www.eealliance.org/pollinator-habitat-certification-program>. No garden is too big or too small!

Congratulations to the latest gardens to be certified:

The Mays Family, Atlanta
Good Samaritan Urban Farm, Atlanta
Scull Shoals Historic Site, Greensboro

2014 Monarchs Across Georgia Awards

Trecia Neal Fernbank Science Center, Atlanta

2014 Service Award



Trecia was “bitten by the bug,” the monarch butterfly that is, back in 2004 when she traveled to Mexico to visit the overwintering colonies. Since that time, she has co-chaired the Monarchs Across Georgia committee for 2 years and volunteered for other intra-committee duties such as Mexico Book Project coordinator. She has engaged countless elementary through high school DeKalb County students with her monarch outreach program “Butterflies Are Free.” She has enlightened staff, faculty and parents enrolled in the School Master Gardener program; many of which have become monarch ambassadors in their own schools and neighborhoods. She actively serves as member of the Monarch Watch Conservation Specialist’s team.

Trecia, being an avid reader and life-long learner, has kept abreast of the issues concerning the decline in monarch numbers which triggered the application to U.S. Fish & Wildlife Service for a “threatened” status of the migrating population. She has made numerous presentations statewide and written articles, such as this one in July 2013 issue of Georgia Native Plant Society’s newsletter ([*Invite a Monarch to Lunch! Help Collect Milkweed Seeds and Plant Milkweed*](#)), to make the public aware of these concerns and efforts and has spearheaded habitat restoration efforts here in Georgia by campaigning for the collection of native milkweed seeds for Monarch Watch’s program Bring Back the Monarchs.

Central Congregational Church, Atlanta

2014 Outstanding Certified Pollinator Habitat



Central Congregational Church is active in environmentalism with several pollinator-friendly areas on their campus. In 2014 the process of protecting pollinators was begun by planting twenty-five species of host and nectar plants, adding large rocks, native grasses, evergreen shrubs, a bee house, a puddling area, and a brush pile to provide a year-round habitat.

Continuing with the three-year project, volunteers from the church and community will be:

- Expanding pollinator gardens into the parking lot.
- Restoring a creek area through eradication of invasive species.
- Planting 102 trees and shrubs, including silky dogwood, Virginia sweetspire, elderberry, winterberry, viburnum, and blueberry, along the creek.
- Planting native grasses and wildflowers in the floodplain and meadow areas.

Congratulations on an excellent, exhausting job in planning and implementing the garden!

SPOTLIGHT... In Your Pollinator Garden



Crimson Clover
(*Trifolium incarnatum*)

Crimson clover (*Trifolium incarnatum*), also known as scarlet clover, is an annual admired for its tall spike of striking red flowers. Its species name, *incarnatum*, even means “blood red.” Though often confused, it is an entirely different species from perennial red clover (*Trifolium pratense*) which actually has rose, purple, or magenta colored flowers. Another common misconception is crimson clover is a poor forage plant for honey bees. While the entire inflorescence of flowers is more elongated in crimson clover, each individual flower is just the right length for a honey bee’s tongue to reach the nectar stored inside. It is red clover that has deep flowers which honey bees have trouble reaching into. However, other species of bees—those with longer tongues—have no trouble sipping nectar from red clover.

Though both clovers are nonnative species, only red clover is reported as being invasive (in Florida) by The Invasive Plant Atlas of the United States. In the southeastern United States, crimson clover is often planted along highways or roadsides to provide quick cover for erosion control, stabilization, and beautification. Because of its rapid, robust growth, crimson clover is also valued by farmers as a weed suppressing cover crop. It is an excellent choice for underseeding as it grows well in the shade of other crops and serves as a beneficial insect attractant. In the legume family (*Fabaceae*), crimson clover can fix up to 200 pounds of nitrogen per acre. It does not multiply with runners (like perennial red clover) and is easy to till under for use as “green manure,” providing organic matter and early spring nitrogen for crops.

Crimson clover does best in cool, humid weather and performs poorly in the heat of summer. In the southeast, plant seeds in late summer (six to eight weeks before the average date of first) at a depth of no more than ¼ inch in clay soils and ½ to ¾ inch in sandy soils. Avoid planting in waterlogged or acid soils. If sowing in a location where clover has not been grown in the last three years, choose pre-inoculated seeds or inoculate the seeds with beneficial bacteria (use inoculant type “R”) immediately before sowing. Without these bacteria, the plants cannot fix nitrogen. The recommended seeding rate: 1–2 pounds per 1000 square feet / 30–40 pounds per acre. Crimson clover will form a dense green carpet by mid-winter, resume growth in spring, and flower in May. In addition to providing nectar for a variety of pollinators, it also serves as a host plant for orange sulphur, little yellow, sleepy orange, and gray hairstreak butterflies.

Gray Hairstreak (*Strymon melinus*)

Often overlooked because of its small size and inconspicuous color, the gray hairstreak (*Strymon melinus*) is the most widespread hairstreak butterfly and one of the most widely dispersed butterflies in North America. It is commonly found in open, weedy, disturbed environments where humans are active. Hairstreaks are named after the fringe of hair on the ends of their wings. The gray hairstreak’s wingspan is 7/8 - 1 3/8 inches (2.2 - 3.5 cm). The upper wing surfaces are dark gray with a white fringe, a large bright orange eyespot and two hair-like tails. While perched, the butterflies may often be observed rubbing their hind wings together, causing the tails to quiver like antennae. This is thought to deter possible predators and redirect attacks aimed at the head (lethal) to the wing tips (survivable).



Small animals at relatively low densities, such as butterflies, often have a strategy that brings the sexes together for mating. Hilltops are recognizable by both sexes and provide a location to perch and wait for potential mates. Those males best able to defend their territory are most likely to mate with a female.

Females will deposit small green eggs singly on the buds and flowers of some 200 different plant species in many different families, making this one of the most polyphagous butterfly species known. Plants from pea (*Fabaceae*) and mallow (*Malvaceae*) families including beans, clovers, and cotton are commonly used as host plants. Young larvae feed on flowers and developing fruit, often boring into them, while older larvae may feed on host plant leaves. Occasionally, the caterpillars are found on cotton squares (known as the cotton square borer) but do not reach population levels that cause economic damage. Larvae range in color from gray to pink, are covered with short hairs, and have glands that secrete a sweet liquid. Ants are attracted to drink this liquid and, in return, protect the caterpillars. Several generations are produced each year with the final generation hibernating in the chrysalis stage.

Adult butterflies prefer a stable platform on which to land and easily access the nectar in numerous short-tubed flowers like the disk florets in composite flowerheads. Favorite nectar sources include white sweet clover, dogbane, milkweed, mint, winter cress, goldenrod, and tick trefoil.

In the first year (2012-13) of this grant program, five \$750.00 grants were awarded. Habitats created or enhanced by these funds are still thriving and the message of monarchs and milkweed is being spread! Besides the installation of the gardens themselves, hands-on learning about animal life cycles, pollination, plant needs and parts, and a variety of related topics continues to be facilitated.



Read the [“Got Milkweed”](#) article in the **Cane Creek Farm, Cumming** newsletter. Visit the [In The Library Garden](#) webpage to view images of the garden at **Milford Elementary, Marietta**. Check out the pollinator-friendly plants at **Sawnee Mountain Preserve, Cumming** [Visitors’ Center](#).



Follow the colorful signage at **Smoke Rise Elementary Charter, Stone Mountain**.



Observe The Great Sunflower Project at **Champion Theme Middle School, Stone Mountain**.

2014-2015 RECIPIENTS ANNOUNCED



Through the continued support of the U.S. Fish & Wildlife Service, Partners for Fish and Wildlife Program, and with the profits from Monarchs Across Georgia’s plant sales, six \$1,000.00 Pollinator Habitat Grants were awarded this, our third year of the program. From the well-written applications, we anticipate expansion of pollinator habitat and an increase in pollinator-related educational opportunities being offered to not only their constituents but the general public. Congratulations to our 2014-15 grant recipients!

- Academe of the Oaks High School, Decatur**
- Cherokee Charter Academy, Canton**
- Eatonton Main Street, Eatonton**
- Fernbank Science Center, Atlanta**
- Global Growers Network, Inc., Avondale Estates**
- Thunderbolt Tree Commission, Thunderbolt**

Year two (2013-14) of funding provided each of the seven schools chosen with \$850.00 grants. Several of the schools already had gardens and outdoor learning spaces but for others, it was literally a project “from the ground up.” Here are some tips for successful projects from these recipients.

“Locate your project where people will notice it.” **East Paulding High School, Dallas**

“Celebrate your accomplishments.” **Hightower Elementary STEM School, Doraville**

“Make learning fun.” **Rocky Branch Elementary, Watkinsville**

“Be creative but flexible.” **Chase Street Elementary, Athens**



“Make others aware of what you’re trying to accomplish.” **Vaughan Elementary, Powder Springs**



“Start small and build on what you have.” **Sol C. Johnson High School, Savannah & Myers Elementary, Gainesville**



Recommended Resource

Mrs. Carter's Butterfly Garden by Steve Rich

Mrs. Carter's Butterfly Garden is the story of how former First Lady Rosalynn Carter started a front yard project that grew into a butterfly-friendly trail through her hometown of Plains, Georgia. She knew that bringing butterflies and other pollinators to her hometown of 700 people would be helpful to the farmers in the area whose crops could benefit. Furthermore, schoolchildren and other visitors could learn from the garden when it eventually opened to the public. Learn from Mrs. Carter's example why it's good for people when butterflies have welcoming spaces and how kids can create their own butterfly gardens at home or school.

Garden Addition: Butterfly Brew Logs

Reprinted from *The National Butterfly Center's website*.

Ingredients

- 8-10 Ripe Bananas (over ripe is good, too!)
- 1 Lb Brown Sugar
- 1 Bottle Dark Imported Beer (Our butterflies like Guinness and Negra Modelo, but feel free to experiment.)

Preparation

Blend the bananas until liquified; it's ok to leave little clumps. Mix in the brown sugar, and carefully add the beer. Stir well. Pour into jars or jugs, but do NOT seal containers closed. Jars and jugs must have holes in the lids or around the top to allow gasses to escape, or the brew will explode as it ferments. Fermentation will occur rapidly, as bacteria in the unpasteurized beer will actively consume the sugars and produce gas as a byproduct of this process. Note: Pasteurized domestic beers lack the healthy bacteria necessary to aid fermentation.



Your brew may be kept cold in the refrigerator for slower fermentation; however, if you plan to use it all quickly, i.e. over a couple of days, you may consider leaving it unrefrigerated.

Pour a narrow bit of brew on a tree limb or fence post. Be careful not to use so much that butterflies become stuck in it!

The rotting, sweet brew will have a funky odor that is most attractive to tropical butterflies--BUT THIS CONCOCTION IS NOT FOR HUMAN CONSUMPTION.

After the brew disappears or becomes dehydrated on your limb or post, scrape the surface clean to remove any dry fruit "leather" or film, and re-apply.

This is a great way to observe butterflies feeding, especially outside a window or in your yard. Occasionally, we experiment with different fruit or beer combinations, but have found this particular recipe to be the most effective. Bon appetit!



Not All Milkweed is Created Equal

All monarchs need milkweed to survive, but are some milkweeds better than others?

EXCELLENT CHOICES

Native Genotypes

Milkweed species native to and originating from your ecoregion and habitat type (and grown without pesticides).

A native species varies genetically in its adaptations to the particular localities and environmental conditions under which it grows. This results in variations between populations of the same species, known as local genotypes or ecotypes. Planting local genotypes helps to preserve genetic diversity within the species and support local species which depend upon on these plants for food, shelter, etc. Also, in general, the more closely you match the environmental conditions of the source of your plant material to that of the planting site, the better it will grow. Seeds may be locally and sustainably collected for propagation. Local genotypes may available from certain reputable native nurseries.

GOOD CHOICES

Native Species

Milkweed species native to your area (and grown without pesticides).

Native is a term to describe plants endemic (indigenous) or naturalized to a given area. In North America, a plant is often deemed native if it was present before colonization. Planting species native to your area helps support local species which are adapted to depend upon on these plants for food, shelter, etc. When local genotypes/ecotypes are not available, planting native species of milkweeds are a good alternative for supporting monarchs and other native wildlife.

- Butterflyweed, *Asclepias tuberosa***
- Swamp Milkweed, *Asclepias incarnata***
- Common Milkweed, *Asclepias syriaca***

QUESTIONABLE CHOICES

Non-native Species

Milkweed species not native to your area, particularly tropical species.

Many of the invasive, exotic plant species present in the South's natural areas today were introduced as landscape plantings many decades ago. Non-native plants can disrupt natural ecosystems. Tropical milkweed species are of particular concern to some Monarch researchers due to their unknown impacts on migrating monarchs and the spread of the protozoan parasite, *Oe*. It is advised that gardeners in the South who choose to grow tropical species should mow it to the ground in the spring after the first generation has passed through and again in the fall.

- Mexican Milkweed, *Asclepias curassavica***
- Balloon Plant, *Gomphocarpus physocarpus***
(Also known as *Gomphocarpus brasiliensis*, *Asclepias brasiliensis*, or *Asclepias physocarpa*)

AVOID AT ALL COSTS

Pesticide-treated Milkweeds

Milkweed species grown using pesticides, particularly systemic insecticides.

Simply put, insecticides kill monarchs. Pesticides are frequently used in the horticultural industry to produce healthy-looking plants. Especially dangerous are systemic insecticides that persist in plant tissues, killing caterpillars and preventing butterfly eggs from hatching.

Some of the common systemic insecticides include:

- Acephate**
(Orthene®)
- Imidacloprid**
(Bayer's Tree & Shrub Insect Control™, Merit®)
- Dinotefuran**
(Greenlight Tree and Shrub Insect Control™, Safari®)

“It is usually better to err on the side of safety, and whenever possible, native species growing in their normal places at the normal times are likely to be safest.”