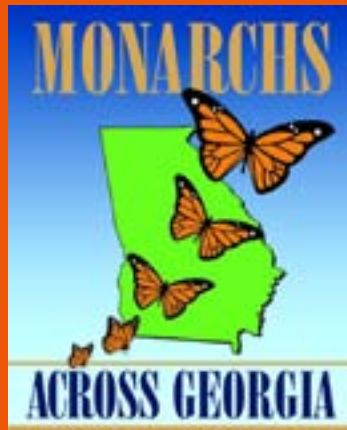


The Chrysalis

Emerging News from Monarchs Across Georgia

A Committee of the Environmental Education Alliance of Georgia



Upcoming Events

**Chattahoochee Nature Center
Spring Native Plant Sale**
April 4-5 & April 11-12
Roswell

**Georgia Native Plant Society
Native Plant Sale**
April 12
McFarlane Nature Park,
Marietta

**Cobb County Master
Gardeners' Garden Faire
and Plant Sale**
April 25 - 26
Jim R. Miller Park, Marietta

Pollinator Week
June 12-23
www.pollinator.org

Moth Week
July 19-27
www.nationalmothweek.org

**Monarchs Across Georgia
Teacher Workshop**
August 22-23
Friday, 5:00pm - 8:00pm
Saturday, 9:00am - 4:00pm
Watson-Brown Foundation,
Thomson

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

Monarchs in Decline after the 2013 Migration Season

It's been all over the news – on CNN, Time magazine, and spreading through local nature-minded groups. After the fall 2013 migration season, the Monarch butterfly count has been the lowest since data became available in 1993.



Here is a breakdown of the World Wildlife Fund's official report released on January 29, 2014:

- 17 areas previously occupied were checked in December 2013.
- 10 areas had no monarch colonies.
- 7 areas had monarch colonies.
- Total area occupied by monarchs = 0.67 ha (1.656 acres).
- This is a 43.7% decrease from December 2012, and a 186% decrease from the highest counts observed in 1996.
- 1 area (Rosario) had 0.52 ha (1.285 acres) which is 78% of the total.
- The other six colonies ranged from 0.01 to 0.04 ha = (0.025 to 0.099 acres) = (121 to 479 square yards).
- Chincua and Pelon, which along with Rosario, have historically been the major overwintering areas, are now perilously small.

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In addition to the famous migrating population that travels down the eastern north American seaboard into Mexico each year, there are also smaller monarch populations in California and Florida. The California population is a migrating group that hails from locations west of the Rocky Mountains, and the Florida group is a non-migrating population that calls the Florida panhandle home.

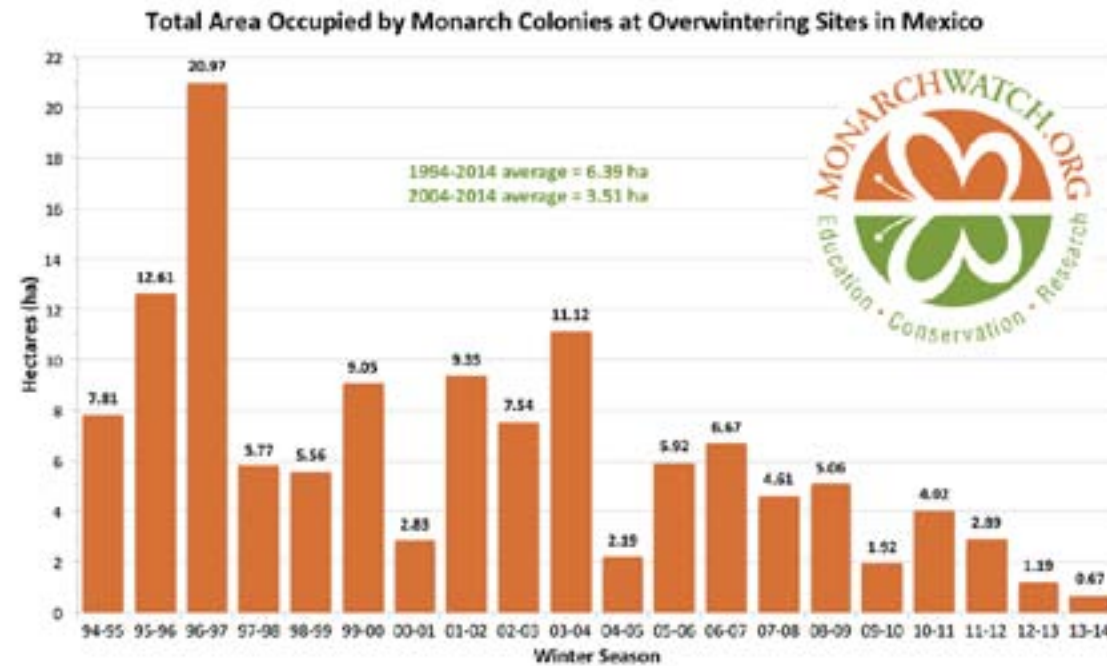
According to The Xerces Society, the population of California monarchs has remained steady since last year, but it still well below peak numbers from the 1990s (figure 2). Volunteers with the Western Monarch Thanksgiving Count visited 162 sites along the California coast and estimated a tally of 211,275 monarchs. Their first count in 1997 estimated 1.2 million individuals, indicating a decrease of 140%.

In Florida, volunteers counted 513 individuals in January and February 2013. Since the Florida population count has only just begun being recorded, the significance of this number is unknown.

Records show a normal pattern of ups and downs, but the general downward trend has alarmed biologists and conservationists across north America. Now, with this year's sobering low numbers, education of the public has never been so rampant or important.

Chip Taylor, the director of Monarch Watch, writes on his blog that three main factors have contributed to the monarch decline: The adoption of herbicide tolerant (HT) crops, the ethanol mandate, and development. The premise behind all these reasons is that monarchs require milkweed for their caterpillars

to eat, and therefore, to survive. Generally, row crop fields such as corn and soybeans contained small amounts of milkweed when tillage was used to control weeds, and is an excellent milkweed/



monarch habitat. Unfortunately, the development of genetically modified, HT crops has increased the use of herbicides in these fields, virtually eliminating milkweed. In 2007, congress passed the Clean Energy Act (the ethanol mandate) that has driven up the demand for corn. With increased planting comes increased pesticide use, and the continued obliteration of milkweed. In that same vein, development of natural farmland and pastures into urban areas eliminates habitat. Taylor estimates that 167 million acres of monarch habitat has been lost since 1996.

Another threat is climate extremes, such as the severe drought in 2005 and 2006. Heat waves, droughts, and storms in north America may have been detrimental to monarch populations. In Mexico, illegal logging has deteriorated their winter fir forest habitat.

Halting the decline would take the cooperation of the three countries that monarchs call home – Canada, the United States, and Mexico. Efforts are currently

underway to encourage large scale milkweed plantings in marginal lands, such as on highway medians, roadsides, and in power line corridors. Home gardeners can contribute by planting native milkweeds in their yards. The key is providing enough “milkweed oases” along their migration corridors to support each generation.

With their beautiful orange and black wings and incredible long-distance migration, monarchs serve as an indicator – a warning, if you will - of what is happening to many other organisms. Their habitat is the same as many other insects require. By helping the monarch, we are actually helping an untold number of invertebrates that indirectly contribute to our own well-being through biodiversity and their roles as pollinators. Karen Oberhauser, a monarch expert at the University of Minnesota, may have put it best: “Given the conservation challenges facing monarchs and the clear evidence that their populations are declining, it is vitally important that we mobilize as many people as possible, and that our efforts are carefully planned to maximize their impacts. For many people, monarchs represent a connection to nature that began in childhood, and our actions will allow generations to come to make this same connection.”

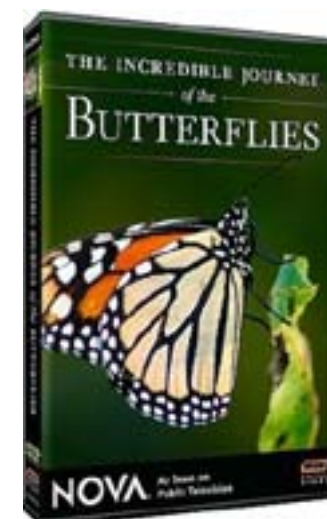


Sources:
monarchwatch.org
www.xerces.org
news.nationalgeographic.com
worldwildlife.org

Recommended Resource

The Incredible Journey of the Butterflies

Orange-and-black wings fill the sky as NOVA charts one of nature's most remarkable phenomena: the epic migration of monarch butterflies across North America. To capture a butterfly's point of view, NOVA's filmmakers used a helicopter, ultralight, and hot-air balloon for aerial views along the transcontinental route. This wondrous annual migration, which scientists are just beginning to fathom, is an endangered phenomenon that could dwindle to insignificance if the giant firs that the butterflies cling to during the winter disappear.



This documentary can be viewed online at <http://www.pbs.org/wgbh/nova/nature/journey-butterflies.html>.

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. No garden is too big or too small!

Congratulations to the latest gardens to be certified:

John and Barbara Payne, Toccoa

**St. Jude the Apostle Catholic School, Atlanta
1st Grade Pollinator Garden**

Linda and Frank Goodchild, Dover Plains, NY



Also known as the Scarlet Buckeye, Woolly Buckeye, or Firecracker Plant, this small, deciduous tree is native from Illinois to Florida and west to central Texas. In the early Spring it puts on an impressive display of showy red, bell-shaped flowers amongst its dark green, waxy leaves. Although it can grow to 20' tall, it is a good choice for the impatient gardener, as it has a tendency to bloom when it's only 3' tall. The flowers are a delight to hummingbirds, bees, and butterflies.

The red buckeye prefers moist, well-drained soil and full sun. It can thrive in shade but may become leggy and airy. The roots don't take well to transplanting, so put it in a spot that is highly visible in the spring, but less noticeable after the leaves drop in late summer. It works especially well as a specimen tree or in shrub borders. Keep in mind that the seeds inside the pear-shaped fruit and young shoots are poisonous if ingested. In fact, indigenous people crushed these parts and put them in water to stun fish for capture. The roots were also used to make soap, and black dye from the wood. The seeds are said to bring good luck, so carry a few in your pocket!

Eastern Tiger Swallowtail (*Papilio glaucus*)

Georgia's state butterfly, the Eastern Tiger Swallowtail (*Papilio glaucus*), will soon be gracing us with their beauty as they fly through our gardens, visit our parks, and flutter through open spaces and forests. As the weather warms, the overwintering chrysalids will emerge. Mallow tiger swallowtails are always yellow with black stripes and long "tails" trailing from the hindwings. Females are dimorphic, or can take one of two color forms. The yellow morph resembles the black and yellow males, with the addition of iridescent blue patches along the bottom of the hindwing. The dark morph mimics the poisonous Pipevine Swallowtail, which is a dark bluish-black. The eggs are laid singly on plants in the Magnoliaceae and Rosaceae families. A favorite (and common) host plant is the tulip poplar tree, where the caterpillar may be found hiding in a curled leaf with silk holding the edges together. Young caterpillars resemble bird droppings while older caterpillars are lime green with conspicuous eyespots, used to startle would-be predators.



Papilio glaucus caterpillar showing off defensive eyespots

Swallowtail butterflies have an interesting survival strategy: The tails on the hindwing can serve as protection. Often one tail will be missing due to an attack by a bird. The bird misses a meal, and the butterfly is relatively unscathed and able to live another day.



Male



Yellow Morph Female



Dark Morph Female

Monarchs Across Georgia recently created a fact sheet titled "Not All Milkweed is Created Equal" in response to the common question, "What kind of milkweed should I plant in my yard?" This fact sheet is available for download and distribution on our website, www.MonarchsAcrossGa.org, under the "Resources" tab.



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."

DR. KAREN OBERHAUSER UNIVERSITY OF MINNESOTA