



MISSION: BEAUTIFICATION ... CONSERVATION ... EDUCATION

Planting and Nurturing

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Gardening Issue: Linda Doiron, Editor

Environmental Edition: May, August, November, February - Mary Lovings, Editor

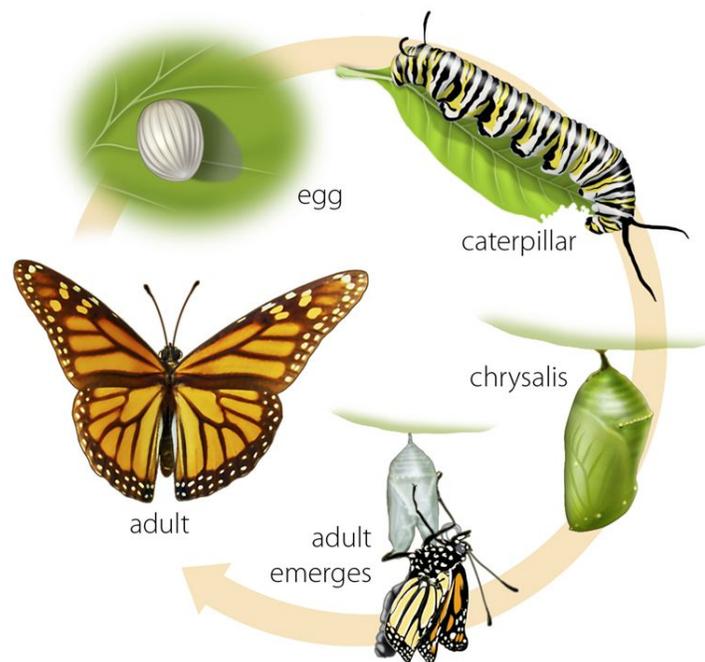
Gardening Edition: June, September, December, March – Linda Doiron, Editor

Landscape Design: July, October, January, April - Suzanne Finger, Editor

Simply Monarchs

Each September and October in Georgia, monarch butterflies can be seen as they undertake their annual and longest insect migration in the world. The good news for Georgians- the path of migration comes straight through our state. They travel from as far as breeding areas in Canada to sites in the high-altitude mountains of Mexico, an astounding journey up to 3,000 miles.

But over the past few decades, the number of monarchs has dramatically declined due to a loss of host plants, destruction of habitat and increased pesticide use. Monarchs feed and breed in Georgia on both sides of the migration, in the spring and the return trip in the fall.



In order to help protect their environment, one must first understand the life cycle of the monarch. Butterflies do not tend their offspring, rather the female deposits an egg on a milkweed plant. A female monarch lays from 100 to 300 eggs during her life. The egg hatches in about four days.

Progressing from egg to adult takes about a month. Larvae (caterpillars) consume a lot of milkweed and grow quickly. They will need to shed their skin up to five times before they pupate. Monarch larvae transform into pupa also known as chrysalis. In as few as five days, the monarch can develop from a pupa to an adult. The monarch's wings are folded in the chrysalis, and are pumped open using fluid from the abdomen. Upon expansion, the wings are pumped slowly until they are dry.

Monarchs live 2-5 weeks before reproducing and laying eggs for the next generation. They have up to four generations each summer, each one traveling a little further north than the last. The last generation of the year migrates south to Mexico where they overwinter. Some of the migratory generation can live as long as nine months with the enormous task of traveling between 2,000- 3,000 miles weighing less than one gram!

But how do monarchs make it to Mexico without a map? Scientists think they have cracked the code of the compass monarchs use to determine the southwest direction they should fly each fall. They essentially use two pieces of information-the time of day and the sun's position on the horizon- to find the southerly direction. They use their eyes to monitor the sun's position in the sky, and their antennae control an internal clock that maintains a daily pattern for them to know the time of day.

One of the most interesting and magnificent views of the monarch butterflies is while they cluster in colonies together to stay warm. Ten of thousands can be seen on a single tree. The Mexican Oyamel tree is a particular favorite, and the protection of the Oyamel Forests is very important to the survival of the monarch butterflies. The Mexican government created the Monarch Butterfly Biosphere Reserve in 1986 for the purpose of conservation of the Oyamel Forests. However, according to Journey North, the Oyamel forest ecosystem is now Mexico's most endangered forest with only 2% of the original forest still intact.



- Photo of caterpillars courtesy of Leanne Penman- Norcross Garden Club
- Photo Cluster monarchs from Peril at Journey's End- <https://www.nwf.org/Magazines/National-Wildlife/2017/Dec-Jan/Conservation/monarchs>

But what can I, as one Georgia gardener, do to help the monarchs?

1. Plant native milkweed, the only host plant that supports the monarch: A loss of milkweed is the most likely cause for a steep decline in the monarch butterfly population in the last few decades. Milkweed was once plentiful in farm fields, when much of it disappeared due to herbicide use. If we want to bring the monarch back, then we need to plant milkweed.

- Four species of milkweeds grow in nearly every region of Georgia including whorled milkweed (*Asclepias verticillata*), clasping milkweed (*Asclepias amplexicaulis*), butterfly weed (*Asclepias tuberosa*) and red-winged milkweed (*Asclepias variegata*). The Georgia Native Plant Initiative and the Georgia Milkweed Initiative represent a network of Georgia growers, nurseries, conservationists and plant scientists that are committed to producing and selling native milkweed plants and their seeds in an ethical way.
- What not to plant: According to the State Botanical Garden of Georgia, two types of milkweed should be avoided:
 - Tropical or Scarlet Milkweed (*Asclepias curassavica*) - may cause the monarch to overwinter.
 - Common Milkweed (*Asclepias syriaca*) - not native to Georgia and may “escape” the garden.

2. Plant nectar-producing plants that provide food for the adult butterflies:

Adult monarchs are dependent on nectar plants as a food source especially to support breeding and migration. Below are a few suggestions for your garden:

Aster (*Symphyotrichum*)

Beach blanket-flower (*Gaillardia pulchella*)

Spotted beebalm (*Monarda punctata*)

Black-eyed Susan (*Rudbeckia hirta*)

Blazingstar (*Liatris*)

Blue mistflower (*Conoclinium coelestinum*)

Boneset/Thoroughwort (*Eupatorium*)

Smooth oxeye Heliopsis (*Helianthus scaberrimus*)

Goldenrod (*Solidago*)

Joe Pye weed (*Eutrochium*)

Narrowleaf sunflower (*Helianthus angustifolius*)

Thistle (*Cirsium altissimum*)

White snakeroot (*Ageratina altissima*)

3. Reduce or eliminate herbicide and insecticides:

Reduce as much as possible your use of insecticides and herbicides to encourage the growth of milkweed. Herbicides used in agricultural landscapes cause the monarchs to travel greater distances and use more energy to find places to lay their eggs. It is believed that the longer flights cause butterflies to lay fewer eggs, or sometimes die before ever having the chance to reproduce.

Try removing pests by spraying them with water or use gloves to remove by hand if the pests are few. For mosquito control, use cedar oil or citronella oil on outdoor furnished areas to discourage them. If you do choose to use chemicals, look for a friendlier alternative such as neem oil or insecticidal soaps.

4. Join a citizen science project:

Citizen science projects mobilize individuals to collect, share and act on issues they care about. The information produced by these efforts support the collection of data, and ultimately helps people hold governments and companies accountable, while also educating participants. Hence the citizen scientist becomes an important tool for bringing back a healthy monarch population.

- Journey North- <https://journeynorth.org/>
 - Report your sightings each fall and spring as the monarchs travel to and from Mexico. Track migration on real-time migration maps and follow migration news.
- Project Monarch Health- <https://www.monarchparasites.org/>
 - A citizen science project based at the University of Georgia's Odum School of Ecology tracks the spread of disease in monarch butterflies.
- Monarch Joint Venture- <https://monarchjointventure.org/>
 - Brings together partners from across the United States to conserve the monarch migration.
- Monarch Watch- <https://monarchwatch.org/>
 - A network of students, teachers, volunteers and researchers dedicated to the study of the monarch butterfly.
- Monarch Larva Monitoring Project- <https://www.citizenscience.gov/monitor-monarchs/#>
 - Volunteers help scientists better understand how and why monarch populations are changing by tracking the health of monarchs.
- Monarchs Across Georgia- <https://www.eealliance.org/monarchs-across-ga>
 - works together with teachers, students, families, communities, businesses and others to study monarchs and restore butterfly habitat across the state.

- State Botanical Garden of Georgia- <https://botgarden.uga.edu/>
 - will host a virtual pollinator symposium on October 3rd and 4th, 2020 that features Project Monarch Health.
- The Great Georgia Pollinator Census-<https://ggapc.org/>
 - Coordinated by the University of Georgia extension office, the census every August is designed for Georgia citizens of all ages to gather and report data on pollinator insect populations including butterflies. The project also seeks to improve awareness and foster pollinator habitats. Next year they will sponsor Milkweed Week with experts giving advice on the challenges of growing milkweed in your Georgia Garden. Join their Facebook group.

If you have a curious nature, there is plenty more to learn about monarchs and other butterflies with a visit to these gardens, but check first with them about their hours due to possible changes because of Covid 19:

- ✚ Amicalola Falls State Park – 418 Amicalola Falls State Park Rd, Dawsonville, GA 30534-See part of the monarch’s journey back north and even camp to make a whole weekend about it.
- ✚ Callaway Gardens - 17800 US Hwy 27, Pine Mountain, GA 31822- Butterfly Center in Pine Mountain hosts a tagging event during the fall in order to continue to research the efforts of the migratory process.
- ✚ Chattahoochee Nature Center -9135 Willeo Rd, Roswell, GA 30075- Dedicates a whole weekend to the monarch butterfly with a festival that celebrates the beautiful creature.
- ✚ Dunwoody Nature Center- 5343 Roberts Dr., Dunwoody, GA 30338- hosts a day of butterfly-centric, family-friendly fun. It is recommended that you purchase tickets ahead of time.
- ✚ Savannah-Ogeechee Canal Museum and Nature Center-681 Fort Argyle Rd, Savannah, GA 31419-the butterfly garden was restored in 2007.
- ✚ Freedom Park Bird and Butterfly Garden-Freedom Park Trail, Atlanta, GA 30307- plenty of space to run and play within its 210 acres managed by its surrounding community.



*Photos of a butterfly garden courtesy of Claire Russell

Be Well,

Linda Doiron

The Hokey Gardener

