

SOFO naturalist



Each quarter SoFo features eco-links, written by a member or friend of the Museum. If you wish to submit an article please contact us.

eco links

The Monarch Plant

by John Potente



Monarch Butterfly Photo: John Potente

It was in early September that I crouched and sat on my concrete stoop with a glass of iced tea. As I tilted the glass and felt my thirst quenched, I saw, over the edge of the glass, the erratic flight of a butterfly three or four times larger than others in its midst. It was bright orange with black streaks that detailed its wings in calligraphy. It was *Danaus plexippus*, the Monarch Butterfly. It flew around my front yard as if it were a magic wand touching and blessing the late summer leaves of the milkweeds.

My curiosity dragged me up from the stoop, to get a closer look to see why it was alighting briefly on the underside of the leaves and then leaving so quickly. I saw nothing, until I was lucky enough to spy it land closer to me and press its abdomen against the very end of an orange milkweed leaf. I looked closer and there it was: the golden egg of the monarch. It was so small, I would never have thought to notice it or even look for it.

I kept an eye on the spot and over the weeks was captivated by the progress of the larval monarch growing from a tiny obscure thread to a healthy herbivorous caterpillar. I could see, from my spot on the stoop, the leaf being eaten away and then more leaves—and leaves of nearby milkweed plants—disappearing with the telltale chewed pattern: a pattern that alarms farmers and horticulturists when they see similar markings made by other insects on their valued crops or prized plants. But in this case, the more the monarch ate of my plants, the more elated I was. These plants were for the monarch.



Monarch Caterpillar Photo: John Potente

Milkweed is the host plant for the monarch butterfly. The monarch relies on this plant for its food in the larval stages. It will lay its eggs on no species of plants other than the milkweeds. I initially let the milkweed plants grow in my yard simply because they are native to Hauppauge, and I like the fragrance that the common milkweed gives to the air. It is a kind of lilac scent with a fresh, clean aroma. But when I saw the monarchs claim them, it gave the milkweeds even more reason to be.

There are two species of milkweed growing in my front yard: *Asclepias syriaca*, the Common Milkweed, and *Asclepias tuberosa*, the Orange Milkweed. The milkweeds in my front yard were not planted. They emerged on their own through the turf grass of my front lawn decades ago. I have since removed the lawn around them to feature the milkweed. The milkweeds took a quick liking to my assistance and freely sent their underground rhizomes trailing about the yard and sprouting up haphazardly throughout. Each year they die back and perennially return a little more ambitiously. And the monarchs responded accordingly, visiting faithfully to perform their late summer egg-laying ritual. But the fact that milkweed colonizes fields so successfully has, ironically, been the cause for its demise. In areas where milkweed has intruded onto cultivated fields (or in areas where cultivation has intruded on natural fields of milkweed), it has been scorned as a scourge and persecuted as a weed. And so the term, milkweed, in its name. The “milk” part of milkweed refers to the white latex that drips from the petiole and stem when you pluck a leaf. This is a common identifying feature, demonstrated by many a field naturalist giving a guided hike. This latex contains abundant glycosides, which confer a toxic character to the leaves if eaten by many mammals. However, the monarch not only can tolerate the glycosides but benefits from them by ingesting them, making the monarchs, themselves, distasteful and poisonous to predators. The monarchs find this so worthwhile that they devote their diet solely to milkweeds.

About half of the monarchs that migrate to Mexico have come from the mid-western United States, where native tall-grass prairies have been converted to corn and soy agriculture. Milkweed is being eradicated from the border areas around corn and soybean cropland by the increased use of herbicides. This leaves the monarch with less milkweed on which to lay its eggs and less milkweed leaves for the surviving larvae to eat. Food crops now contain a number of synthesized genes that have been inserted by genetic engineering (GMO foods). One such addition is a gene to make crops resistant to Round-up, a herbicide that kills plants. The crops having this gene can resist the herbicide, thus enabling them

to be unaffected by enzyme-inhibiting effects of the herbicide sprays. Therefore, farmers are now empowered to spray herbicides to a larger extent on their fields and border areas without jeopardizing their herbicide-tolerant crop plants. This has led to the loss of large vestigial areas of plains milkweed, which does succumb to the herbicide.

Another genetically engineered alteration that has been added to crops such as corn and soy is a gene that produces a bacterial poison: *Bacillus thuringiensis* toxin, otherwise known as Bt-toxin. The transgenic pollen of crops that contain Bt-toxin has been shown to be directly harmful to monarch larvae by a Cornell University study.

When I give hikes to the salt marshes in autumn and point out the Seaside Goldenrods (*Solidago sempervirens*), a primary food source of migrating monarchs, sadly I can only describe to the groups the past glory of the monarch masses in autumn, as they watch one or two monarchs hopelessly fluttering about. Monarchs from Canada and the United States migrate thousands of miles to their wintering grounds in the forests of Mexico. Their numbers have been in steady decline and even more drastically declining in the last decade as more herbicide is sprayed on the food of the monarchs (and the crops that we eat).

So, what can be done to help? Aside from promoting organic produce, we can allocate space for milkweeds! But how do we promote a weed. After all, milkweed is a weed, right? Well, no. Milkweed, in its natural range of fields and prairies is a native plant in North America. And, yes, even in fields resulting from bulldozed forests. Forests and fields play ping-pong with each other in the natural world as fires turn forests to fields and as fields undergo natural succession to forests. So, as we work to encourage the preservation of milkweed in its natural range, we are still left with the word, milkWEED. Undoubtedly, the common name, milkweed, was coined by those who regarded the plant as an undesirable plant that needed to be extirpated. What other name could we call this plant that may be more suitable or inviting? There are other common names for common milkweed already being used, such as silkweed and butterfly flower. Well, silkWEED doesn't really help us very much, and butterfly flower, although certainly a better term, can add to confusion when considering all the other closely termed names of other plants—Butterfly Bush (*Buddleja davidii* and *Buddleja globosa* and also *Rotheca myricoides*), Butterfly Leaf (*Christia obcordata*), and of course Butterfly Weed (which actually refers to orange milkweed). Not to mention the fact that Butterfly Flower also is used to identify *Schizanthus* species of flowers that are native to Chile but are now in the United States.

Late September came; I sat on my stoop, sipping green tea, looking at the bulging chrysalis. I watched the unborn monarch inside its sheathing, suspended from the plant that gave it survival and thought, "Why not call it Monarch Plant." This would remove the connotation of "weed" and, at the same time, remind us of its integral

relationship with the butterfly. Then, naturalists could point out Violet-Flowered Monarch Plant (*Asclepias syriaca*), Orange-Flowered Monarch Plant (*Asclepias tuberosa*) and Green-Flowered Monarch Plant (*Asclepias viridiflora*): much more fitting and prestigious names for plants that provide so much natural beauty and sustenance for the most royal of butterflies, the Monarch Butterfly.

About the author:

John E. Potente is past editor of the publication of the Long Island Botanical Society, the editor of Tidal Marshes of Long Island, New York (published by the Torrey Botanical Society), and a recipient of the Dennis Puleston Award for Conservation on Long Island.

Editor's note

On Saturday, September 10 at 2 pm, John will be giving the program *Monarch Butterflies and the "Monarch" Plant—Presentation and Field Walk*, for adults and teens, at the South Fork Natural History Museum. This program will illustrate the life of Long Island's monarch butterflies and the plants that provide the leaves, nectar, and essential edible toxins for the hungry monarch caterpillars and the flying adult monarch butterflies. The presentation features photographs, videos, anecdotes, and story surprises about this lordly butterfly and the struggling plants that nourish it. See how simple it can be to help them both!

The program will be followed by an optional field walk through Vineyard Field, behind the museum, to find monarch butterflies and caterpillars and the plants that wait to offer their leaves and flowers to them. See and learn how these plants grow and reproduce and how important they are to the ecology of the fields, the butterflies, other insects, and our sensual delight.

Reservations are necessary for this program. Please contact SoFo at sofo@hamptons.com or (631) 537-9735 to make your reservation.

the Nature clubhouse

Saving the Toki: A Communal Effort

by Hannah Miranda



My name is Hannah Miranda. I am fifteen years old and live in Montauk, New York. The natural world has interested me since I was very young. A *Peterson's Guide to the Birds of North America* inspired me to start bird watching at the age of five years old, and I haven't stopped since. With the support of many others, I have become very involved in the local bird watching community. I have written several articles for the Eastern Long Island Audubon Society's newsletter, the Osprey, and am an active member of the New York State Young Birder's Club

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For information, please see enclosed insert.

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I was fortunate enough to travel to Japan last summer to visit family, as my mother is Japanese. While I was there we visited Sado Island, which is located off Niigata Prefecture in the Sea of Japan. One of the reasons we went to Sado was because it is home to the endangered Japanese Crested Ibis (*Nipponia nippon*), otherwise known as the Toki.



Japanese Crested Ibis
Toki

Tokis are large ibises that usually feed in rice paddies, where they eat frogs, small fish, and insects. In the last century, over-hunting and environmental pollution caused Toki numbers to drop at an alarming rate. Habitat destruction caused nesting places to be destroyed and food

sources to be depleted. Starting in the 1960s, efforts were made to avoid complete extinction. The remaining wild birds from Sado and places in China were captured in order to preserve the species. Through tireless work and dedication, the people of Sado successfully bred Tokis in captivity and are now slowly releasing some into the wild. Today there is a small but established

population that lives and breeds on Sado Island.

Captive Tokis are kept in the Toki Forest Park's Sado Japanese Ibis Conservation Center in Ryotsu to be bred and so that people can gain an appreciation for the magnificent bird.

The museum offers an interactive experience for visitors of all ages, where they can learn about the Toki's amazing journey back from the brink of extinction. A "Toki Release Station" is located near the museum, where they occasionally



Tokis at Sado Japanese Ibis Conservation Center

release Tokis into the wild to repopulate the island.



Field where I saw the Tokis

In a communal effort, farmers now refrain from using harmful pesticides on their rice paddies and farms to avoid potential habitat destruction for the Tokis. Since 2008, farmers have been using the Toki Brand Rice Certification System that provides guidelines that limit the use of pesticides in paddies and enforce natural practices that preserve the Toki's food sources. The production of Toki Brand Rice has now become a significant industry in Sado, and the Tokis themselves have become a tourist attraction of sorts.

I was lucky enough to observe Tokis in their natural habitat during my stay there.

Seeing the beautiful pink birds fly across a rice paddy was something I will never forget—and it made me understand why every endangered species is important and worth saving. The Toki, which was close to a national symbol for Japan, seems to be making a comeback in Sado. These beautiful birds were able to escape extinction thanks to a community effort to protect them. Hopefully, other species in need of help can be saved by following Sado Island's example.

I will be starting a Young Birder's Club with the South Fork Natural History Museum (SoFo) in late September. Anyone six years of age or older, who has experience using binoculars and is a serious birder, is welcome! If you know a child or a teenager who would be interested in joining the club, please contact Carol Crasson at sofoedcomdir@optonline.net. A general announcement about the club will be made in September.

Buzz Around Town

by Frank Quevedo



*Male Ruby-throated
Hummingbird*

What's the buzz around town these days? Hummingbirds visiting backyards. Some of us are very fortunate to have returning hummingbirds visit our homes each year as they raise young or pass through during migration to feed on nectar from plants

and feeders. Out of the 300 different kinds of hummingbirds found mostly from Central and South America, the Ruby-throated Hummingbird is the only species of hummingbird that consistently enters the eastern two-thirds of the United States and is the species we have here on Long Island. In some years, we get the Rufous Hummingbird visiting in the fall on its way south, but that's a rare occurrence—and I hope someday it will visit my feeder. Most hummingbirds that enter the United States are found in the Western parts of the country, and Southeastern Arizona is where the greatest variety can be found.

The Ruby-throated Hummingbird is a tiny sprite-like bird, scarcely larger than a good-sized insect; it is white below and a burnished, sparkling green on the back. The adult male has a gorgeous fiery throat, which, when the sun strikes it, flashes back a deep, glowing orange or red. The female has an olive-green back but lacks the red throat. The hummingbird moves its wings with such extraordinary rapidity, creating a "buzzing" sound like a bee makes. When hovering, the hummingbird's wings can beat at the rate of 55 times per second but can increase to 75 times per second when flying forward at full speed. Its buzzing wings hold it steady in the air, where it

can reach deep into a flower with its long bill and suck up nectar. As it feeds, it darts skillfully from one blossom to another, an inch away, then six feet away, then back again—pausing exactly in front of each one, probing each blossom with its beak, starting and stopping with a jerk motion, turning at any angle with a sudden twist—or it may shoot away at full speed. A remarkable power, unbirdlike, acting more like an overgrown bee.

To attract hummingbirds to your backyard, a liquid solution of one part granular sugar and four parts water is recommended. Make sure you boil the water first and then add sugar for dissolving efficiency. After mixing, let the solution cool and then add it to the feeder. The feeder should be checked several times a week and cleaned once a week to prevent mold and bacteria from forming. Another way of attracting hummingbirds is to plant native wildflowers in your yard that produce orange or red flowers. We recommend that you visit your local garden center or stop by the museum for more information on planting local perennials as opposed to non-native plants. This option is best for long-term success and is ecologically friendly.

Editor's Note

On Saturday, August 13 at 3 pm, join the South Fork Natural History Museum (SoFo) for A Visit to a Hummingbird Sanctuary in Baiting Hollow, New York. This program is for adults. Reservations are necessary. Please contact SoFo at sofo@hamptons.com or (631) 537-9735 to reserve a spot and receive directions to the Sanctuary.



Photo: The Baiting Hollow Hummingbird Sanctuary



South Fork
Natural History
Museum (SoFo)

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