



MARIE AND MILAN MAJAROV:

Monarch Maestros

Marie and Milan Majarov are citizen scientists. Both are retired PhD clinical psychologists, and today they dedicate themselves to learning about and fostering the natural surroundings they so love. One small but vital part of those surroundings that benefits greatly from the Majarovs' devotion is the monarch butterfly.

This is a good thing. The monarch butterfly, an important natural pollinator, has faced increasingly dire circumstances in recent years. And the monarch is an indicator species that paints a broader picture of problems facing our native pollinators.

Participants in Monarch Watch since 2006, the Majarovs have raised and tagged generations of migratory monarch butterflies. Last year, one of the monarchs the Majarovs raised, tagged and released at their northern Shenandoah Valley home was recovered more than 2,000 miles away in El Rosario, Mexico.

Marie is a native of Bethlehem, Pennsylvania, and Milan originally hails from Detroit. They met while both were working in Shenandoah County and married in 1994. They've lived more than 20 years just outside of Winchester, adjacent to 600 unspoiled wooded acres that are preserved as part of the Third Winchester Battlefield.

With her keen interest in nature, Marie has become an expert nature photographer and has written feature stories for a number of outdoor- and nature-themed periodicals. Milan is also a photographer, and together they operate their business, Majarov Photography.



Marie and Milan Majarov at their home in Winchester.

BILL SHERROD PHOTO



Milan



Monarch

The couple is active in the Virginia Outdoor Writers Association, having served as board members, Marie as president and chair of the board, and Milan as treasurer. Together they chair the Collegiate Writing Contest

Marie is also a certified member of the Virginia Master Naturalist program and a board member of the Piedmont Chapter of the Virginia Native Plant Society. With her love of nature, photography, writing and gardening, she also enjoys knitting.

Milan jokingly calls himself Marie's "gun bearer" for her photo excursions. He participates in the Cornell University's Project Feeder Watch program, counting and recording observations of birds at the Majarovs' backyard feeder station from November to April. He and Marie also participate in the Audubon Society's Christmas Bird Count and are monitors for the 132-box Shenandoah Audubon Blandy Bluebird Trail.

Marie and Milan both enjoy fishing and playing duplicate bridge; Milan teaches the game and directs a weekly American Contract Bridge League-

sanctioned bridge game. They have three children and a grandson, Jake, who is a junior at Virginia Tech studying civil engineering.

"I've always been interested in nature," Marie says. "I started working in the garden and learning about nature with my grandmother when I was 5 years old."

Her penchant for photography came later in life.

"While I was doing an internship at the University of Virginia, I inherited a camera from my father, and began to develop an interest in photography. I later decided to take some photography classes with nationally renowned photographers Rob and Ann Simpson at Lord Fairfax Community College in Middletown. They changed my life!"

Marie notes.

The Majarovs started down the pollinator path in 2004, when Marie was working on a *Virginia Wildlife* story about another pollinator, the honeybee.

"We met Denise Gibbs, a professional interpretive naturalist on the Eastern Shore, and she introduced us to Dr. Lincoln Brower, a world-renowned monarch expert, Sweetbriar College professor and University of Florida Distinguished Service Professor Emeritus," says Marie. "Soon we were planting native milkweed and blossoms in our garden that would attract monarchs and pollinators of all kinds."

As their friendship with Gibbs and Brower grew, so did their



Egg



Newly Emerged Caterpillar



Mature Caterpillar



As a photographer, it has taken at least three summers to document this entire process in photos. Sometimes Marie would spend hours watching and waiting for a chrysalis to open, only to look away for a second and then to have to wait again for another opportunity.

knowledge of monarch butterflies. The Majarovs registered with the University of Kansas' Monarch Waystation program, to become Monarch Waystation #642, raising monarchs for education and tagging and release during the migratory season. The University of Kansas provides the tags — tiny, numbered Mylar discs with adhesive on one side. Attaching the tags to delicate butterfly wings is an art unto itself, involving dexterity, a round toothpick and more than a little luck.

Soon the word was out. "Every kid in the neighborhood would come to see our garden and the butterflies," says Marie.

Milan notes that the plantings

include milkweed, the only plant on which monarchs lay eggs and their caterpillars eat, as well as nectaring plants for the newly hatched and migrating monarch butterflies to feed upon. "Without milkweed we would have no monarchs," notes Marie.

Because of various factors, including eradication of milkweed and habitat loss and fragmentation across the breeding and overwintering grounds, the monarch population has been steadily reduced in recent years.

"Dr. Brower says the migration is definitely proving to be an endangered biological phenomenon," says Marie. "He calls monarchs 'the canary in the cornfield' because they are an indicator species that tells us about the difficulties all of our native pollinators are facing."

Each year thousands of migrating monarchs are tagged and released by Monarch Watch volunteers. One of the monarchs the Majarovs tagged and released on Sept. 9, 2014, was among the approximately 200 tagged butterflies recovered early in 2015 in Mexico ... no small feat to find the tagged monarchs among the millions of overwintering monarchs.

Marie describes the migratory monarch epic thusly: "Each fall a breathtakingly grand migration takes shape as, one by one, monarch featherweight fliers lift off to commence their perilous journey to the overwintering grounds in the Trans-Volcanic Mountains of central Mexico, where their ancestors have long wintered. Monarchs east of the Rockies, from as far north as southern Quebec, throughout New England, and across the Midwest, make their way south and southwest, at times streaming as high as 5,000 feet.

"Tough, determined, almost unstoppable, these half-gram insect pilots make incredible progress, averaging 28-plus miles a day gliding with high-speed air



New Chrysalis



Monarch Emerging from Chrysalis



Tagged Monarch

Newly Tagged
Monarch



currents and engaging in wing-powered flight. Stopping only to refuel on fall blossoms and roost through darkness, it takes about 40 to 60 days to reach a narrow Texas corridor, Eagle Pass, through which massive clouds of butterflies funnel, sweeping from there on to their destinations: 12 colonies, only a few hectares each, within stands of Oyamel fir trees at elevations of 11,000-plus feet on the not-too-cold, not-too-warm southwesterly slopes of the Trans-Volcanic Mountains of Mexico.

“To put their 2,000-plus-mile journey in perspective, Toronto zoologist David Gibo estimates that an equivalent distance for a 6-foot-tall person would be 11 times around the world!”

“In the May-June period, monarchs begin arriving in Virginia. These are the offspring of the overwintering monarchs that flew from their sanctuaries in Mexico to lay their eggs in Texas. Here, another generation begins as females lay eggs, each about the size of a poppy seed, singly on leaves of fresh, beautiful milkweed.

“The time span that it takes from egg to flying butterfly varies depending on the temperatures ... it slows down if too hot or chilly. In about three to five days, a tiny caterpillar emerges and eats the egg case ... nature wastes nothing. Next it begins to munch, chomp and devour the milkweed leaves. Always hungry, caterpillars eat and

eat, shedding their skin, eating it and devouring more leaves for close to two weeks until finally they are about 4,000 times bigger than when they began and ready to initiate the magical process of metamorphosis.

“After finding just the right spot and spinning a silk button, they implant their back feet into the silk and suspend themselves in the shape of a ‘J.’ After some internal processes are complete, their skin

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Recovery of the tags not only provides important data to understand and save this ‘endangered phenomenon,’ but additionally Monarch Watch pays very good money per tag to painfully poor Mexican workers to recover the tags. This employment helps these indigenous people to survive without cutting and selling the precious Oyamel trees of the Monarch overwintering grounds.

splits and is raised by muscles to reveal a soft, yellow-striped chrysalis that hardens into an inch-long, lovely green shell with gold dots. In about 10 days the shell becomes transparent and then, quiet as a whisper, the butterfly inside pushes its way out of the shell. At first looking like a folded, deflated beach ball, the new butterfly pumps fluid from its swollen abdomen to straighten its wings. In about five minutes it is a full-sized featherweight flyer with a wing span of 4 inches. Incredible!

“As a photographer, it has taken at least three summers, with Milan’s help, to document this entire process in photos that I show in my PowerPoint presentations. Sometimes I’d spend hours watching and waiting for a chrysalis to open or a ‘J’ to pupate, only to look away for a second to check dinner on the stove, or the angle of the action being not quite right for good photos, and then to have to wait again for another opportunity.

“The process of pupation and metamorphosis is mesmerizing, its complexity and beauty so illustrative of the awesomeness of nature. For us it is about more than monarchs ... it is about the magnificence and plight of all pollinators, and the concern for what is happening to our precious natural resources and environment,” Marie concludes. ■

How to Help the Monarch Butterfly

Marie and Milan Majarov note that the height of the monarch population is estimated to have been over a billion butterflies, covering approximately 20 hectares (a hectare is about 2.5 acres), in the mid to late 1990s.

The low point, two years ago, was .67 hectare and 33 million monarchs. Last year, the monarch-covered area rose slightly to 1.67 hectares. This year saw a more substantial increase to 4.01 hectares, which represents 9.9 acres and 200 million monarchs. However, the effects of a severe late-winter March storm have seriously impacted the number of monarchs surviving the winter and the integrity of the overwintering grounds.

The target for monarch recovery is a sustained population of at least six hectares. This is a level high enough so that the overall population, with its natural yearly fluctuations and the impacts of storms and climate events, shouldn't fall below an extinction threshold.

"You can help by planting native milkweed if you have a sunny open area," notes Marie. "Plant native summer- and fall-blooming flowers for nectaring. Avoid pesticides. Support beneficial farming practices, and support conservation efforts. Together we can make a difference!"

FOR FURTHER INFORMATION:

www.monarchwatch.org/waystations provides information about adding native milkweed and nectar plants to your yard and qualifying as a Monarch Waystation.

www.learner.org/jnorth/monarch is a good source for information on the progress of the monarch's fall migration south, and spring re-migration north back through the eastern U.S. and Canada.

www.mlmp.org

The Monarch Larva Monitoring Project (MLMP) is a citizen science project involving volunteers from across the U.S. and Canada in monarch research, outstanding information and ways to get involved.

monarchconservation.org

The Monarch Butterfly Fund, a conservation group of many of the most important scientists working to preserve the monarch migration.

www.virginiamasternaturalist.org

provides information about the Virginia Master Naturalists Program. ■

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