
POINTE AU BARIL
2020
POINTE AU BARIL ISLANDERS' ASSOCIATION
AND
THE OJIBWAY CLUB

Monarchs in Pointe au Baril

By Betsy Cole Roe

September 2019 Sunset on Calhoun Island

Early September 2019, as dusk was just setting upon Shawanaga Bay, my husband, Billy, and I were watching the last of the evening sunset from Calhoun Island (B731). We spotted what appeared to be little orange dots floating towards us in the evening sky. As the dots came closer, we realized they were butterflies coming in by the thousands and heading towards the center of the island. In the dusky light, it looked like all the trees had turned suddenly orange, as if the fall season had set in. We quickly realized that the cedars and pines were covered with of thousands of Monarch Butterflies! The next morning, we had hoped to get better photos with more light but, sadly, the Monarchs had already departed.

Butterflies coming in by the thousands

Monarchs clustered on Trees

The Monarch's Four Generations

The Monarch butterfly (Danaus plexippus) is one of the most beautiful of all the butterflies. On this particular fall evening, the Monarchs were just in the beginning of what is perhaps the greatest annual migration in all of North America. Tens of millions of the orange-and-black butterflies had started their annual fall migration south, flying thousands of kilometers and taking them all the way to the mountains in central Mexico where they

will spend their winter. They are known to fly as high as 1 kilometer (.6 miles) above the ground, traveling as many as 80 to 160 kilometers (50 – 100 miles) in a single day. They conserve their energy by riding columns of rising warm air and taking advantage of strong winds to help speed their flight. To keep up their lipid reserves, they eat nectar along the way. It may take them up to two months to get from our Georgian Bay shores to the same over-wintering sites in the mountains of Mexico where generations before them have gone. The Monarchs only migrate during the daylight hours, and at night they gather together and land in clusters. On this special evening last September on Shawanaga Bay, thousands upon thousands of Monarchs chose to roost on Calhoun Island!

Butterflies coming in by the thousands

Unlike their predecessors from the prior three generations, these fourth generation, fall-season Monarch butterflies are unique. They live six to nine months, long enough to 1) endure this incredible and long migration south, 2) stay alive over the winter in Mexico, 3) mate and 4) begin the return journey home toward our shores in the spring. They do this by going through a process called 'reproductive dispause'. Taking place only in the Monarchs that are born during the fall season, this 'dispause' is naturally induced by the shorter hours of light, the cooler temperatures and less available food. It is simply a hormonal change that suspends their reproductive organ development so that they cannot mate. This suspension allows the Monarchs to store the enormous energy that they normally would use in order to go through their four reproductive processes. This stored energy will instead be used to greatly lengthen their life span - up to six to nine months. The Spring in Mexico brings warmer temperatures and longer day light hours that will induce their reproductive organs to return to active mating. They immediately begin three to five weeks of intensive mating activity. After mating, these same Monarchs that left us in the fall - months and thousands of kilometers later – are ready to lay their precious eggs in the United States as they start their journey back north and toward the places they left in the fall. However, they are also about to complete their six to nine-month life span. So these long-lived Monarchs are sadly fated to die en route. Their eggs

will be laid on Milkweed plants in the Southern United States, which will ensure the repopulation of the Monarchs and, thereby, the survival of their species. These eggs produce the first generation of Monarchs, who will then repeat this very complicated, complex, annual cycle which includes the two migrations (one south and one north), totaling four generations. Each individual butterfly will go through four stages of life, from the egg to their birth.

Four Stages of Each Monarch Butterfly

Female Monarch

Male Monarch

1 The first stage of each individual Monarch's lifespan begins when the female lays her eggs. Both male and female reproduce multiple times with the male transporting the female through the air. The mating can take up to sixteen hours. Immediately after mating, the female will lay her eggs, singly or in batches, exclusively on the Milkweed plant. Their reproduction is completely dependent on the presence of milkweeds in the genus, Asclepias. It takes between three to eight days for these eggs to hatch into tiny caterpillars.

Tiny egg on the leaf

Baby caterpillar

2 In the second stage, the baby caterpillar's first meal is eating its egg casing. It then feeds exclusively on the surrounding milkweed leaves, growing and turning itself into the easily recognizable Monarch caterpillar that has black,

Large caterpillar

white and yellow stripes, becoming increasingly distinctive as it grows. To accommodate its growing body, it must molt its skin four to five times, each time eating the protein nutrient casing from which it has just molted. Ten to fourteen days after birth, the fully-grown caterpillar begins to find a convenient and sturdy place, hopefully hidden from predators, to spin a silk pad that will hold its body while it progresses to the Pupa stage, also known as the Chrysalis. Once the pad is stable, the caterpillar hangs from the silk pad in a "J" hook-like formation.

Caterpillar eating his molted skin

J-hook

3 The third stage begins twelve to forty-eight hours after the "J" hook formation. An amazing and miraculous metamorphosis takes place. The caterpillar changes into a beautiful green Chrysalis with golden dots. It looks like a beautiful jewel pendant. During the ten to fourteen day period, the chrysalis loses its brilliant color and starts to darken. A few hours before the butterfly emerges from the chrysalis, the color pigments appear; and the adult butterfly can be seen through the walls of the now translucent chrysalis.

Beginning Chrysalis

Almost Completed chrysalis with its head still on

Completed perfect chrysalis

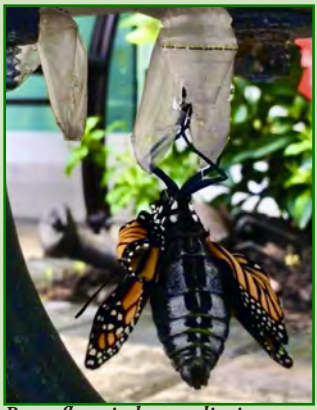
The completed chrysalis, with its entire shedded skin, tentacles, legs, and head, detaches as the chrysalis

Chrysalis turns dark right before birth showing the pigments of the new butterfly

wiggles to close. Dark mounds of these body parts are the first thing I look for every morning when I know a caterpillar is about to make its Chrysalis. Where there is a head found on the ground, there will always be a Chrysalis above!

Shedded body, shown under a microscope, found on the ground

4 At last, in stage four, the chrysalis splits open, as the adult butterfly wiggles out. The new butterfly arrives tail first, all crinkled up, and clinging with its forelegs to its chrysalis case. It immediately begins pumping its 'insect blood' through the vessels within the still-wet wings. Within four to five hours, the wings straighten out, becoming strong enough for the Monarch to take flight.



Butterfly wriggles out clinging to chrysalis skin

Butterfly moves to a nearby location to finish pumping his wings.

The newly born Monarch's first stop is to a nectar-bearing flower in order for it to stock up on energy. In our Pointe au Baril area, these Monarchs love our local nectar plants: Golden Rod, Cardinal Flower, Butterfly Weed, Black-Eyed Susan, Blue Flag Iris, Lobelia, Asters, Wild Strawberry, Yarrow, etc. The Swamp Milkweed, especially prevalent in our area, grows well in the moist soil and near rocks around our shores and is essential for the survival of the Monarch. Our Monarchs also need fallen tree branches and warm flat rocks to bask on as well as fresh water to drink.

Wings have dried and blood pumped into the veins.

Swamp Milkweed

The Wonder and Miracle of Nature!

Early in our summer on Georgian Bay, we will start to see our Monarchs 'great, great grandchildren returning again to their ancestral home – a home they have never been to or seen before. Yet a couple generations later, they know their way home. During our summer, we can experience the second, third and fourth generation Monarch miracle: the four stages of their life cycles from egg to Butterfly and their fall migration right in our own back yards/shores. We need only to closely observe the Milkweed around us, and/or plant it. If there is Milkweed, the Monarchs will find it. If you see them flying around the Milkweed, they are either laying their eggs and/or drinking the nectar of the flowers that are blooming on it. Start looking on the Milkweed leaves. Look for the very tiny yellow-white eggs, the size of the head of a pin. They most likely will be on the underside of the leaves for protection. Once the eggs hatch, look for leaves that appear as though they have been eaten, and you mostly likely will find the caterpillar. . You will need more than one milkweed plant, as they are ferocious eaters who feed exclusively on the Milkweed. The real challenge happens once the caterpillar is finally large and well fed and then suddenly goes missing. This is when you start hunting for the beautiful jade green Chrysalis with golden dots. It will be someplace nearby and as camouflaged as possible.

The caterpillar is a ferocious eater on the milkweed leaf

Facing Incredible Odds

Our beautiful local Monarchs face many threats and challenges in their already complicated life cycles: climate change, harsh weather conditions, pesticides, milkweed pests, land use change, natural predators, salted winter roads, loss of forests in both Mexico and the US. All these 'predators' challenge our Monarch during their four stages of reproduction, as well as during their two annual migrations. After all, less than ten percent of them survive the reproduction process and/or the full round trip journey from our shores to the mountains in Mexico and back to our island paradise!

We are so fortunate to see the Monarchs, aptly named – The King of Butterflies – right in our backyards and along our shores. It is incumbent upon each of us to protect the natural habitats around us on Georgian Bay, keep our water clean and promote the growth of milkweed and nectar flowers.

Betsy Cole Roe, a scientific illustrator/artist, and citizen scientist, has spent 73 summers on Shawanaga Bay. She and her husband, Bill Roe, live on Calhoun Island B731, with their sons, Trip and Gillett, their extended families and Betsy and Bill's grandchildren. During the winter months in Sarasota, Florida, Betsy and Billy raise and release over 300 Monarchs.