



Earth Day Species at Risk Spotlight:

Monarch Butterfly

The Monarch butterfly is one of the most iconic species of the insect world. They are a “flagship species” for species at risk. This means they are like an ambassador for animals that may be at risk of population decline due to human activities.

Status in Ontario: Special Concern



About Monarch Butterflies

Description

Monarch butterflies are known for their large bright black and orange wings. Their wings have a specific pattern of black veining, and are bordered by thick black edges with two rows of white spots. Females exhibit thicker black veining, while males have two small black spots on their bottom pair of wings. This bright colouration is to ward off predators like birds. They have black bodies made up of three sections: the head, thorax, and abdomen, and have 2 long antennae, 6 legs, and a long, curly, straw-like tongue called a *proboscis* that is used to drink nectar from flowers.

Life Cycle

Monarch butterflies begin life as a cream-green coloured egg laid on the underside of a Milkweed leaf. This egg is smaller than the pointy tip of a sharpened pencil! Once this egg hatches, a tiny caterpillar emerges and eats its egg shell. Then it begins to eat the leaf of the Milkweed plant it is on. It eats and eats and eats so much that in about 2

weeks it becomes about 2,000 times its original size! As it gets larger, the caterpillar has to shed its skin so that it can keep growing. During this time of eating and growing, the caterpillar sheds its skin 5 times! These 5 stages are called *instars*.

Monarch caterpillars have a distinct black, white, and yellow stripe pattern, with a pair of “horns” at both its front and back ends. A full grown caterpillar is about 2 inches long.



Once the caterpillar has completed its fifth instar, it is now large enough to go through the process of *metamorphosis*. This is the change from a larval caterpillar to an adult butterfly! The caterpillar attaches itself to the twig, sheds its skin for the last time, and creates a cocoon called a *chrysalis*. A Monarch chrysalis is green with a thin strip of gold specks. The caterpillar is now in the *pupa* life stage, losing its original form and changing into a butterfly. After about two weeks, a fully formed butterfly emerges from the chrysalis. The entire life span of a Monarch butterfly can be up to 6 weeks. Though there is an exception where some live for 8 months!



Migration

During the summer months, Monarch butterflies are found in Southern Canada and across the United States. Monarchs are well known for something they do every year that not many other insects can do; they migrate! Just like some birds, Monarchs make an incredibly long migration to escape the cold winters in which they can't survive.



While some generations complete their entire life cycle in the summer months in the North, the last generation of summer is the "migration generation". Leaving Ontario around late summer or fall, they fly to a special forested area of warm, sunny Mexico, making a 3,000 kilometer journey! These Monarchs are the exception to the rule as mentioned above. These migrators can survive for up to 8 months as they migrate and overwinter in groups in Mexico. After winter is over, and it's warm enough to fly north, the migration back to Canada begins. A Monarch can only make this migration once. New generations continue the cycle, laying eggs, moving south for the winter, and north for the summer.

Diet

While all of these Monarchs are flying and reproducing, they need the proper food resources to gain energy, and milkweed plants to lay their eggs on. Milkweed is the **only** plant that Monarch caterpillars eat. Milkweed contains a chemical that the caterpillars store in their bodies, making them taste horrible to predators. Adult butterflies are able to drink the sugary nectar from many different types of flowers.

Why are they at risk?

As urban development increases, there are less suitable habitats for Monarch butterflies. Their ideal habitats include lots of nectar-rich wildflowers, as well as lots of Milkweed. Without these two things, Monarch butterflies cannot survive. Pesticides are chemicals that are sprayed on plants to keep insects away. If a caterpillar or adult Monarch ingests pesticide, it could die. Climate change is shifting many animals natural range and migration patterns. Changing or extreme temperatures or weather patterns can cause many individuals to die, as they may migrate back north too soon and get stuck in a frost or without food resources.

How can we help?

Plant a Wildflower Garden!

A great way to help Monarch butterflies is also an easy way: plant flowers! If you are able to, planting a garden of native wildflowers is very helpful for Monarchs who have limited habitat. The best way to do this is by planting a mixture of wildflowers that are native to Ontario – this helps prevent the spread of non-native or invasive species that may actually cause more loss of suitable habitat. Planting a variety of flowers in clumps ensures the butterflies can spot them from the sky. Flowers that are good for monarchs include:

Goldenrod



Black Eyed Susan



New England Aster



Wild Bergamot



Boneset



Purple Coneflower



Coreopsis



Milkweed





Activity: Growing Milkweed for Monarch Butterflies

With the weather getting warmer, Monarch butterflies will soon be heading back to Ontario for the summer. To help make sure they have the resources they need, why not plant some Milkweed!

There are different types of Milkweed:



Common Milkweed



Swamp Milkweed



Butterfly Milkweed

In North America, Milkweed plants open their seed pods in fall. The seeds are then exposed to the cold, wet winter. This is important for the seeds to germinate the next spring. In order to grow milkweed at home, you have to mimic this process, called cold-stratification. To start your milkweed seeds indoor, use the following instructions:

Purchase native milkweed seeds from your local plant nursery.

Wet a paper towel and wring most of the water out so it's damp but not dripping wet. Place your milkweed seeds on the paper towel and spread them out. Then fold your paper towel over and place them in a resealable sandwich bag.

Label your bag so that it doesn't get accidentally thrown out. Write the date on the bag too.

In order to cold-stratify your seeds, you must leave them in your refrigerator for at least 30 days.

In the meantime, get peat pots or trays for your seeds. Peat pots eventually break down when planted into the ground so you won't need to disturb the roots in order to plant your Milkweed.

Colour in the Monarch butterfly template below and attach it to a popsicle stick to place in your pot or tray so you remember what seeds are in there.

After the 30 days are up, the seeds are ready to be planted! Fill your pot or trays $\frac{3}{4}$ to the top with potting soil. Dampen the soil, place a 1-2 seeds in a pot, remember they need space to grow so don't add too many seeds in one pot! Then add a bit more soil to cover them. Gently add a bit more water then place your pot or tray in a warm, sunny area.

Now you have to be patient! Check on them every day, touch the soil with your finger, and lightly mist with water to dampen if it is dry. Seeds should sprout in about 10-15 days, but may take a little longer until they feel like conditions are just right! If you aren't planting all of your seeds, place them back in the refrigerator.

If your milkweed has sprouted, great! If not, keep waiting, or try again with more seeds.

Milkweed plants get quite big, and won't be able to stay in your pot for too long after they've sprouted, they need to be planted into the ground. While waiting, pick out a sunny spot in your garden to plant your Milkweed.

Once your plant has reached about 3 inches tall, very carefully plant the peat pot directly into the ground. Make sure the area around it is clear so the Milkweed gets enough sunlight.

Finally, watch your Milkweed grow! It will take a while for your Milkweed plants to get big and blooming, but keep caring for them and hopefully they will be visited by lots of Monarchs! Milkweed is a perennial plant, so it will come back every year.

Tip: If you'd like to skip the transplanting process altogether, you can sow your Milkweed seeds from the refrigerator directly into the ground, and place your butterfly stick there too, so you remember where they are and don't accidentally pull them out or step on them!

A great way to let your community know you're helping (and to encourage them to help too) is to make a sign for your garden about Monarch butterflies!





Monarch Butterfly Template

Print out this monarch template, colour it in and cut it out. Paint a popsicle stick black and glue the wings on when the paint is dry.

When you are done, place your finished butterfly in your pots, planters or garden!

