



Chasing Monarchs with Jaime Rojo

STUDENT PRESENTATION STUDY GUIDE

Werklund
Centre



Meet the Explorer



Jaime Rojo is a photographer and a strong advocate of wilderness conservation and large-landscape connectivity. His goal is to capture images that can ultimately become tools for the creation of new protected areas. He is an International League of Conservation Photographers Senior Fellow, a trustee of the WILD Foundation, and the recipient of honors in competitions such as World Press Photo and Wildlife Photographer of the Year.

Jaime Rojo Resources

- » Instagram [@jaimerojo](https://www.instagram.com/jaimerojo)
- » [Wildlife Photographer of the Year 2024](#)





IT'S SHOWTIME



The Show

Jaime Rojo: Chasing Monarchs

February 2 & 3, 2026 at 10:15 am

Jack Singer Concert Hall at Werklund Centre

During the Show

Think about or notice these things

- What are some dangers butterflies face at home and during their migration?
- What emotions do you feel while watching the butterflies? Excited? Curious? Concerned?
- What mysteries did Jaime help solve? What's still a mystery we're researching?

Think about your questions for the post-show Q&A!

Before the Show

Try an In classroom activity

Group Discussion

- How do human actions affect species and habitats?
- Why do monarch butterflies travel thousands of kilometres each year?
- What does this migration tell us about the health of ecosystems?
- How are climate change and habitat loss affecting butterfly populations?
- What is the role of a scientist, photographer, or storyteller in conservation?

After the Show

Reflect, Explore, and Create

Discussion Question

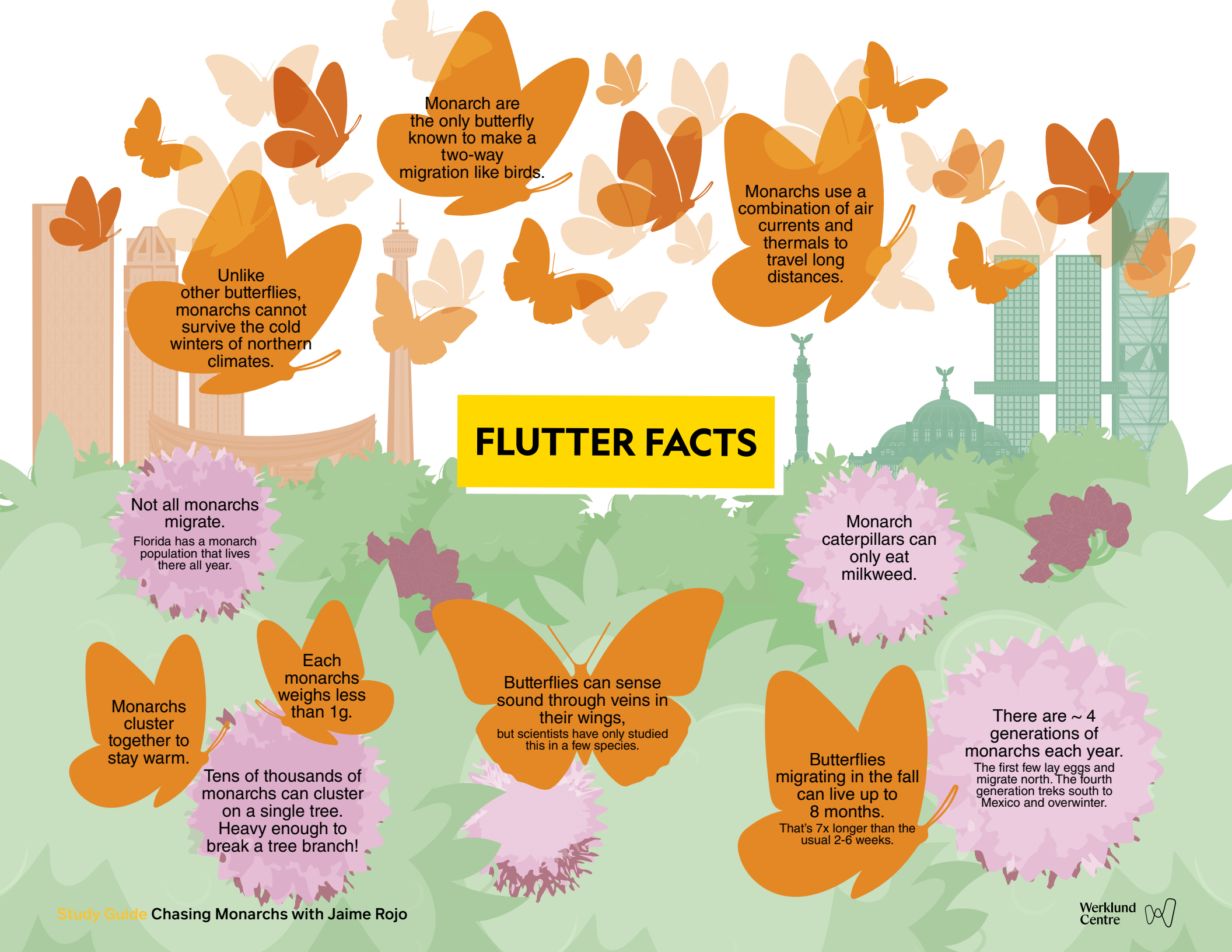
How can people help protect butterflies without a garden?

Creative Activity

Write a letter to Jaime Rojo.

Tell them your favorite part of their work and ask a question.





Monarchs are the only butterfly known to make a two-way migration like birds.

Monarchs use a combination of air currents and thermals to travel long distances.

Unlike other butterflies, monarchs cannot survive the cold winters of northern climates.

FLUTTER FACTS

Not all monarchs migrate.

Florida has a monarch population that lives there all year.

Monarch caterpillars can only eat milkweed.

Monarchs cluster together to stay warm.

Each monarch weighs less than 1g.

Butterflies can sense sound through veins in their wings, but scientists have only studied this in a few species.

Tens of thousands of monarchs can cluster on a single tree. Heavy enough to break a tree branch!

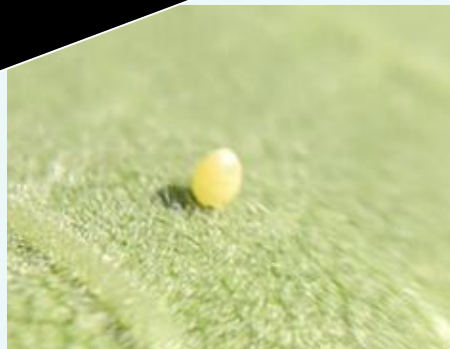
Butterflies migrating in the fall can live up to 8 months.

That's 7x longer than the usual 2-6 weeks.

There are ~ 4 generations of monarchs each year. The first few lay eggs and migrate north. The fourth generation treks south to Mexico and overwinter.



LIFE CYCLE



EGG



1mm • 4-5 days

Creme-coloured or yellowish, oval and slightly conical, covered in longitudinal raised ridges.

- Life begins as a single tiny egg laid on the leaf of a milkweed plant, often on the bottom of a leaf near the top of the plant.
- Newly hatched caterpillars eat their eggshell and then move on to the plant on which they were laid.
- A female butterfly will average 100 to 300 eggs in her lifetime.



CATEPILLAR LARVAE



1mm - 5cm • 10-14 days

Yellow, black and white stripes
Black filaments near its head and at the tip of its abdomen

- Caterpillars munch on milkweed to grow
- Milkweed is toxic and the toxins stay in the caterpillar and adult. They are fine but it makes them taste terrible to predators.
- When the caterpillar has become too large for its skin, it molts, or sheds it. At first, the new skin is very soft, but hardens and molds itself to the caterpillar, which often eats the shed skin before starting in anew on plant food!



CHRYSA LIS PUPAE



~3 cm • 10-14 days

Turquoise-green with gold spots
Darkens until the adult colours show

- During the pupal stage the transformation from larva to adult is completed. Pupae are much less mobile than larvae.
- The shell becomes transparent as the butterfly matures, and the pattern can be seen 1 or 2 days before the butterfly emerges.
- Monarch pupae are camouflaged, since they have no other means of defense against predators.



ADULT BUTTERFLY

9 -11cm • 3 to 5 weeks*

*migratory generations can live 8 months
Orange wings with black veins and white-spotted edges

- The primary job of the adult stage is to reproduce - to mate and lay the eggs that will become the next generation.
- Each year, the final generation of Monarchs, which emerges in late summer and early fall, has an additional job: to migrate to their overwintering grounds, either in central Mexico for eastern Monarchs or in California for western Monarchs. No growth occurs in the adult stage, but Monarchs need to obtain nourishment to maintain their body and fuel it for flight.
- Monarch butterflies live in North, Central, and South America as well as Australia, some Pacific Islands, India, and Western Europe.



[National Geographic Maps](#)



MALE
thin veins
black pouch



FEMALE
thick veins
no pouch

Male and female adults look slightly different. Look for the black pouch on the hindwing and the thickness of the black veins.



MIGHTY MIGRATION

Milkweed doesn't grow north of this line.

Point Pelee National Park, ON

If it's raining, too windy, or too cold to cross Lake Erie, migrating monarchs gather at Point Pelee Park.

Some fly 3,000 miles to reach their winter home!

HOW DO THEY KNOW THE WAY?

We don't know!

Researchers are still looking at what monarchs use to navigate and find their overwintering location. It appears to be many things like the magnetic pull of the earth and the position of the sun among others, not one in particular.

These monarchs live here all year

In the fall, millions of monarchs east of the Rocky Mountains fly south to spend in the winter in Central Mexico.

They start as far north as Alberta to the Maritimes and merge into a single flyway in Texas.

In the spring and summer, their children migrate back north. It takes at least three generations to get to back to Canada. The next fall, the great-great-great grandchildren of last fall's butterflies fly back to Mexico.

LEARN MORE

- » National Geographic Kids. [Monarch Butterfly Facts](#) [website]
- » Canada. (2024) [Monarch butterflies, Point Pelee National Park](#). [website]
- » Journey North. [Monarch First Sightings Map, 2025](#) [interactive map]
- » US Department of Agriculture. [Monarch Butterfly, Migration and Overwintering](#). [website]



- Summer breeding areas
- Spring breeding areas
- Spring & summer breeding areas
- Overwintering areas
- Non-migrating population areas
- Fall migration routes
- Spring migration routes
- Potential breeding area
- Potential migration route

? ARE THESE BUTTERFLIES LOST?

No! Monarchs west of the Rocky Mountains overwinter in California along the Pacific, a similar climate to central Mexico. Monarchs in California roost in eucalyptus, Monterey pines, and Monterey cypresses.

“ AN EVOLVING TRADITION

For the Mazahua and Otomí communities who live in the forests of Michoacán, **monarchs represent the souls of their ancestors who return each fall**, around Día de Muertos, to visit the living. As a photographer, I initially struggled to find a clear visual connection, as monarchs have become popular icons of these celebrations, sometimes far removed from their original spiritual meaning. Over time, I came to understand that, **like all traditions, the Day of the Dead is constantly evolving**, and monarchs have become an undeniable pop icon. **Losing them would not only be a tragedy for biodiversity, but also a loss of cultural heritage.** ”

- Jaime Rojo, National Geographic Explorer

Learn more about monarchs in Mexican indigenous cultures. Read more: Tia Merotto (2022) [Winged Messengers](#). Centre for Folklife. Smithsonian Institute

Monarch overwinter in Michoacán, the state west of Mexico City

MILKWEED HABITAT AND PRESERVATION

Monarchs lay their eggs on milkweed. Milkweed is only thing monarch caterpillars eat so its a key host plant for them. Different varieties of milkweed grow across Canada. These varieties can grow in prairie grasslands like Alberta.

The prairie region of North America was the main breeding area of the monarchs until the 1880s. Plowing the grasslands to create crops eradicated milkweed. Now, overuse of herbicides and urban development affect the habitats for the butterfly and places for milkweed can grow.

MAKE A MONARCH WAYSTATIONS

You can help by creating “Monarch Waystations” (monarch habitats) by planting milkweed and a mix of nectaring flowers, protective shrubs, or looking after existing gardens. They can be anywhere and any size, from a window box, roadside garden, to a whole yard. No waystation is too small.

Learn more and register your waystation with [Monarch Watch](#).



DWARF MILKWEED

Look for: Greenish-white or pale mauve corolla; the corona is generally white to creamy white. 30 - 60 cm tall

Plant in: Sandy soil, but tolerates other soil types with good drainage. Prefers roadsides, dry and sunny conditions.



GREEN MILKWEED

Look for: Pale green corolla sometimes tinged with violet and no petals. 30 - 90 cm tall

Plant in: Poor, dry, sandy or rocky soils. Can also be found in more humid environments, such as marshes. Tolerates full sun to moderate shade.



SHOWY MILKWEED

Look for: Whitish-pink to purple star-shaped flowers. 45 - 120 cm tall

Plant in: Moist to well-drained soils, sunny sites, pastures, forest edges, abandoned fields, roadsides, ditches, riverbanks.

Source: [Mission Monarch. \(2023\) Native Milkweed \[pdf\]](#)

TAKE ACTION!

Can't garden? No problem, there are many ways to get involved with habitat preservation and conservation.

VISIT LOCAL PLACES TO EXPLORE CONSERVATION:

- » [Ann & Sandy Cross Conservation Area](#)
- » [Calgary Zoo / Wilder Institute](#)
Explore the butterflies at the Calgary Zoo!
- » [Inglewood Bird Sanctuary](#)
70 species of birds, 21 species of mammals and 347 species of plants have been recorded at the Sanctuary and Nature Centre by members of the public, volunteers and staff.

BECOME A CITIZEN SCIENTIST

There are organizations that use monarch sightings for everyday people to track and monitor them. Share your monarch sightings with organizations like [Monarch Watch](#), [Mission Monarch](#), and [Journey North / South](#).

BUILD A BUTTERFLY

Monarchs are an iconic and beautiful insect which helps to inspire people to do their part in protecting them, but more than butterflies benefit from habitat restoration.

Learn how to build a butterfly as a class.



WILD WORDS

Biodiversity	The variety of life in a particular place. High biodiversity means many species living together and supporting each other.
Climate Change	Long-term shifts in temperature and weather patterns, often caused by human activity. Climate change affects monarch migration and habitat.
Conservation	Actions people take to protect species, habitats, and natural environments. Conservation efforts help monarch populations recover.
Ecosystem	A community of living things—plants, animals, insects—and the environments they interact with. Monarchs rely on healthy ecosystems to survive.
Habitat	The natural home or environment where a plant or animal lives. Monarchs depend on specific habitats for food, rest, and breeding.
Metamorphosis	The transformation process insects go through as they grow. For monarchs: egg > caterpillar > chrysalis > butterfly.
Migration	The long-distance movement of animals from one place to another, often following seasonal patterns. Monarch butterflies migrate thousands of kilometres each year.
Milkweed	A flowering plant that monarch caterpillars need to survive. It is the only plant monarch caterpillars eat.
Pollinator	An animal—such as bees, butterflies, birds, or bats—that helps plants grow by transferring pollen. Monarchs play an important pollination role.
Threatened Species	A species at risk of becoming endangered in the near future. Monarch populations have declined, making conservation especially important.



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