



Tiny Travelers, Big Journey

The Monarch Migration

Padma Hariharan – Jul 2026

Why Monarchs Matter

- Monarchs are iconic pollinators across North America
- Their migration is one of the longest and most remarkable in the insect world
- They depend on native milkweed for survival
- Monarchs are indicators of ecosystem health



The Monarch Migration – what is it?

A 3,000-mile journey from the milkweed fields of Canada and the northern United States to the sacred oyamel fir forests of central Mexico — and the sanctuaries where the wintering colonies can be witnessed firsthand



≈3,000

miles traveled south,
funneled through central
Texas into a single flyway



4

generations complete one
full annual migration cycle



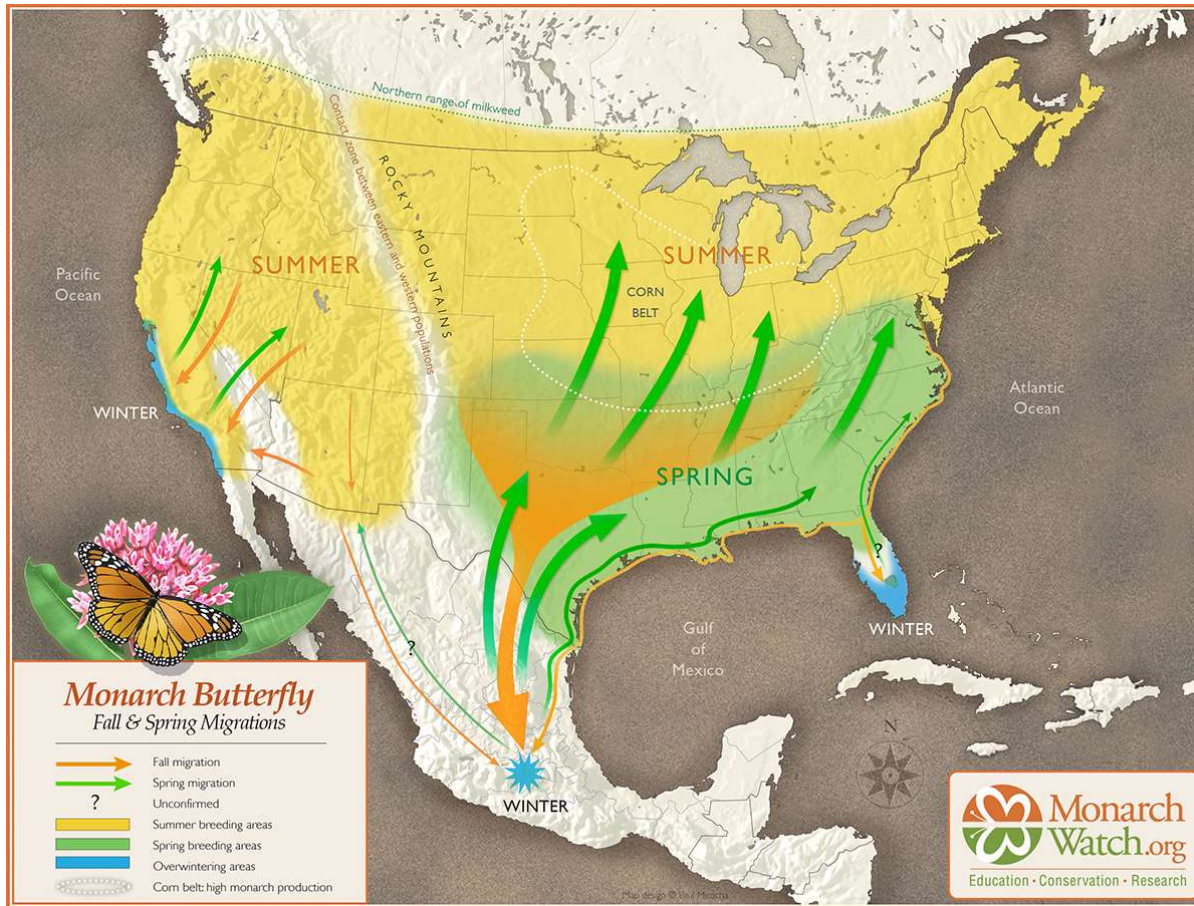
Aug – Nov

the fall migration departs
the north and reaches
Mexico

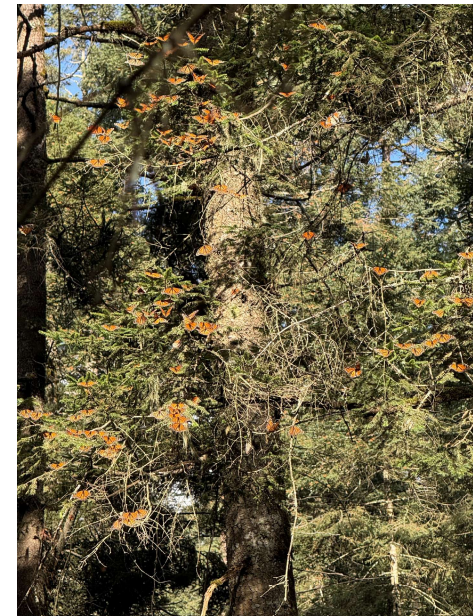


8–9 mo.

lifespan of the migratory
“super generation,” vs. 2–6
weeks for summer adults



Monarchs breeding across the eastern U.S. and southern Canada converge along several routes that merge into a single, well-defined corridor through central Texas before crossing into Mexico's Trans-Mexican Volcanic Belt.



NOTE: No single butterfly completes the entire round trip – each generation carries the migration forward!

Journey's End: The Monarch Butterfly Biosphere Reserve

UNESCO World Heritage Site

Designated in 2008; first protected by presidential decree in 1986

56,259 hectares

Total reserve area, including strict core zones off-limits to logging

8 major colonies

Overwintering sites across the reserve; five are open to visitors

Nov – late March

The season colonies remain active before the spring dispersal north



2,400–3,600 m

elevation of the fir forests where
monarchs roost

*Researchers first confirmed the location of
the Mexican overwintering colonies in
1975, solving a decades-long mystery
about where eastern monarchs
disappeared to each winter.*

Where You Can See Them: The Sanctuaries

Five colonies within the reserve are open to visitors, offering guided trails to observe the clusters up close between November and March.



El Rosario

Ocampo, Michoacán

The largest and most-visited sanctuary, with colonies historically covering some 1,500 trees. A well-maintained paved trail and stairs lead to the viewing meadow.



Sierra Chincua

Angangué, Michoacán

A quieter, more rustic alternative to El Rosario, with a shorter, gentler trail through pine-oyamel forest and a research station used for reforestation work.



Piedra Herrada

State of Mexico

The closest sanctuary to Mexico City and the resort town of Valle de Bravo, making it the most convenient day trip — and the most crowded on weekends.



Cerro Pelón

State of Mexico

The site nearest where the migration's Mexican terminus was first confirmed in 1975. The least visited and most pristine, reached by the steepest trail.



La Mesa

San José del Rincón, State of Mexico

A smaller, less-promoted colony offering a more intimate, low-crowd alternative within the State of Mexico portion of the reserve.

The Sacred Fir: *Abies religiosa*

Monarchs overwinter almost exclusively in high-elevation cloud forests of oyamel fir — called the “sacred fir” for the way its needled branches meet at the crown like praying hands.



A living blanket and umbrella

Dense, evergreen canopy traps humidity and moderates temperature, shielding roosting clusters from freezing nights, wind, and winter rain.



A precise microclimate

Cool but rarely freezing, and humid enough to prevent the butterflies from drying out during diapause — conditions found almost nowhere else.



A narrow habitat window

Oyamel grows only between roughly 2,400–3,600 m in the Trans-Mexican Volcanic Belt and parts of the Sierra Madre del Sur — there is no backup location.



Under pressure

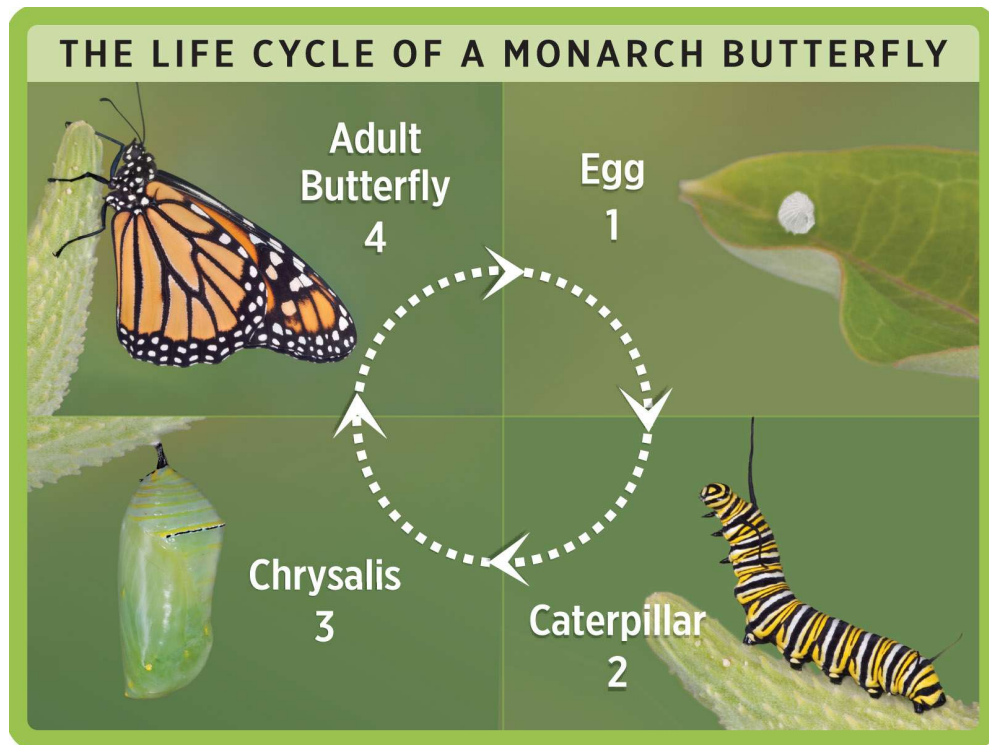
Logging, land conversion, and a warming climate have reduced oyamel forest to a fraction of its historic range, prompting large-scale reforestation efforts.

WHY OYAMEL, SPECIFICALLY



< 5%

of the oyamel forest's original range remains today, driving reforestation programs that have planted over 100,000 seedlings in recent years



- The Caterpillar stage is key
- They only feed on Milkweed
- The final generation of the year, the migration generation, lives much longer so they can complete the long journey south

Milkweed: Fuel for the Next Generation

Milkweed (*Asclepias* spp.) is the only plant monarch caterpillars can eat. Its toxic cardiac glycosides — harmless to monarchs, but poisonous to most predators — make it the essential host plant along the entire breeding range.



Midwest & Northeast

Common milkweed

Asclepias syriaca

The primary host across the core summer breeding range, alongside swamp milkweed and butterflyweed.



South-Central (Texas)

Antelope-horn milkweeds

A. viridis, *A. asperula*

Key species where the fall flyway funnels south; and an important spring nectar and egg-laying stop.



Wetlands, region-wide

Swamp milkweed

Asclepias incarnata

Tolerates damp soils and, alongside common milkweed, shows the highest monarch egg-laying rates in field studies.



Dry, sunny sites

Butterfly weed

Asclepias tuberosa

Widely recognized for its bright orange blooms; thrives in dry, well-drained soil across much of the eastern range.



A note on tropical milkweed: Non-native *Asclepias curassavica* stays green year-round in warm climates, which can disrupt migration timing and spread the OE parasite. Regionally native, winter-dieback species are the safer choice for restoration.

Nectar for the Journey — and the Overwintering Forest

Adults don't eat milkweed — they fuel the flight south on nectar. Late-blooming native flowers along the migration corridor let monarchs build the fat reserves that sustain them through months of winter diapause.



Goldenrod

Solidago spp.

A top fall nectar source across the eastern range; hosts over 126 species of butterflies and moths.



New England aster

Symphyotrichum novae-angliae

Blue-purple, late-blooming flowers that carry nectar availability into October.



Ironweed

Vernonia spp.

Deep purple fall blooms found in prairies, riverbanks, and roadsides across the central and eastern U.S.



Blazing star

Liatriis spp.

Tall spikes of nectar-rich purple flowers, a reliable draw for migrating monarchs and other pollinators.

IN THE MEXICAN OVERWINTERING FORESTS

Clustered monarchs feed little during the coldest months, living off stored fat. But on warm days they descend to drink from streams and nectar at forest-floor and edge flora, including:



Wild senecio & sage relatives

flowering understory plants along forest edges and clearings



Wild dahlia and salvia species

found in meadows adjacent to the fir stands



Mountain streams & seeps

essential water sources for hydration on warm afternoons

The oyamel canopy itself provides no food — it is shelter alone. Nectar and water sources at lower elevations near the colonies are what sustain the butterflies until spring.

Add in Lantanas, Coneflowers, Zinnias in addition to native milkweed to provide fuel for the adult butterflies

Threats and the Path to Recovery

The eastern population has declined sharply over the past three decades, though recent winters have shown encouraging signs of rebound.

45 acres

of occupied forest, winter 1995–96 — the long-term high

4.42 acres

occupied in winter 2025–26 — nearly double the prior winter's total

Still below average

Despite recent gains, forest coverage remains far below the multi-decade average

KEY THREATS



Milkweed loss from herbicide-tolerant crops, agricultural expansion, and urban development



Illegal logging and land-use change degrading the oyamel fir overwintering forest



Climate change altering both breeding-season conditions and the fir forest's suitable range



Pesticide and insecticide exposure along the breeding and migratory corridor

HOW TO HELP



Plant regionally native milkweed and multi-season nectar plants at home



Avoid pesticides and neonicotinoid-treated ornamental plants

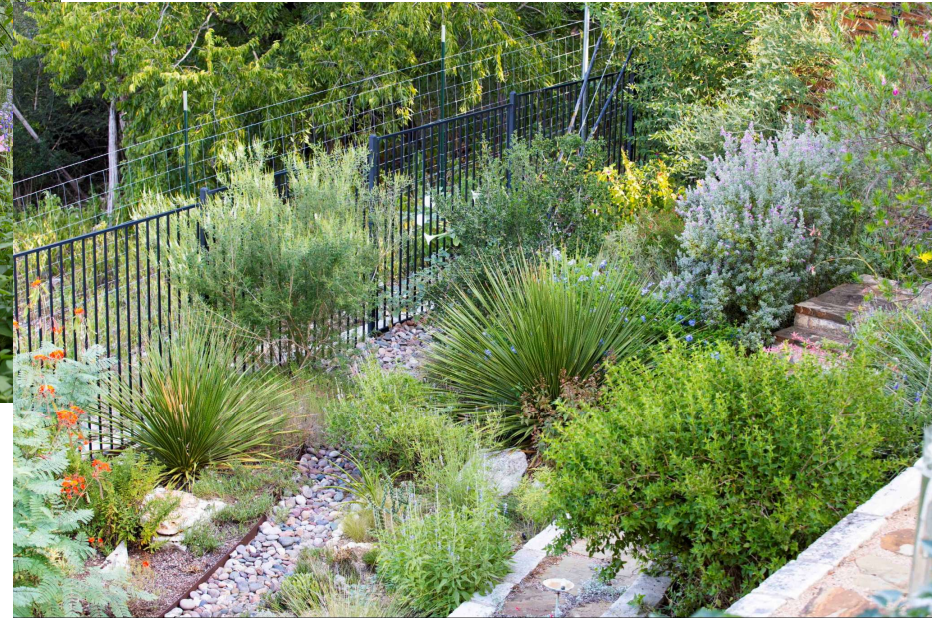


Support reforestation and reserve conservation programs in Michoacán



Report sightings to citizen-science efforts like Journey North and Monarch Watch

Texas Native Butterfly Gardens



Pic Credits: npsot.org

Some pictures from my trip



Interested in experiencing this first hand?

Small Group trips to the sanctuaries

- 5 days (from Mexico City)
- 2 Sanctuaries
- Visit to a Botanical Garden and Mazahua Co-op
- Transportation, entry fees, guide and most meals included
- One sightseeing experience in Mexico City
- Dates: Feb/Mar 2027

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Sources

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- World Wildlife Fund — worldwildlife.org
- Xerces Society Monarch Nectar Plant Lists — xerces.org
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