

Fall Migration of the Monarch Butterfly

Unlike most other insects in temperate climates, Monarch butterflies cannot survive a long cold winter. Instead, they spend the winter in roosting spots. Monarchs west of the Rocky Mountains travel to small groves of trees along the California coast. Those east of the Rocky Mountains fly farther south to the forests high in the mountains of Mexico. The monarch's migration is driven by seasonal changes. Day length and temperature changes influence the movement of the Monarch.

In all the world, no butterflies migrate like the Monarchs of North America. They travel much farther than all other tropical butterflies, up to three thousand miles. They are the only butterflies to make such a long, two way migration every year. Amazingly, they fly in masses to the same winter roosts, often to the exact same trees. Their migration is more the type we expect from birds or whales. However, unlike birds and whales, individuals only make the round-trip once. It is their children's grandchildren that return south the following fall.



[Fall Map](#) (40K)

Some other species of Lepidoptera (butterflies and moths) travel long distances, but they generally go in one direction only, often following food. This one-way movement is properly called emigration. In tropical lands, butterflies do migrate back and forth as the seasons change. At the beginning of the dry season, the food plants shrivel and the butterflies leave to find a moister climate. When the rains arrive, the food plants grow back and the butterflies return.

When the late summer and early fall Monarchs emerge from their pupae, or chrysalides, they are biologically and behaviorally different from those emerging in the summer. The shorter days and cooler air of late summer trigger changes. In Minnesota this occurs around the end of August. Even though these butterflies look like summer adults, they won't mate or lay eggs until the following spring. Instead, their small bodies prepare for a strenuous flight. Otherwise solitary animals, they often cluster at night while moving ever southward. If they linger too long, they won't be able to make the journey; because they are cold-blooded, they are unable to fly in cold weather.

Fat, stored in the abdomen, is a critical element of their survival for the winter. This fat not only fuels their flight of one to three thousand miles, but must last until the next spring when they begin the flight back north. As they migrate southwards, Monarchs stop to nectar, and they actually gain weight during the trip! Some researchers think that Monarchs conserve their "fuel" in flight by gliding on air currents as they travel south. This is an area of great interest for researchers; there are many unanswered questions about how these small organisms are able to travel so far.

Another unsolved mystery is how Monarchs find the overwintering sites each year. Somehow they know their way, even though the butterflies returning to Mexico or California each fall are the great-great-grandchildren of the butterflies that left the previous spring. No one knows exactly how their homing system works; it is another of the many unanswered questions in the butterfly world.

The migration will peak in the San Saba area October 4-16. For more information go to www.monarchwatch.org