MONARCH HABITAT NEEDS

The monarch butterfly's annual cycle includes four phases: Wintering in Mexico from November through February, the spring migration from March through mid-June which includes breeding and egg laying in the south, late spring and summer breeding in the north from mid-June through mid-August, and the fall migration from mid-August through October which may include breeding in the south. This annual cycle requires two very distinct habitat needs: Wintering habitat in Mexico and breeding habitat in the United States and Canada.

WINTERING HABITAT IN MEXICO

Overwintering habitat is vital for the monarchs as this is where the monarchs stay during the winter months to prepare for the next phase of migration and breeding.

Monarch butterfly overwintering sites are found in oyamel fir forests on only 12 isolated mountaintops in the Sierra Madre mountain range of Central Mexico. Oyamel firs grow only at high altitudes, between 7,800 and 11,800 feet. The cool temperatures in this unique habitat slows the butterflies' metabolism allowing them to burn less energy and conserve their fat reserves throughout the overwintering season. Protection of these mountain top forests began with a series of decrees by the president of Mexico in the 1980s. In 2000 the area was declared the Monarch Biosphere Reserve. In 2008, the reserve was inscribed on the list of World Heritage Sites.

While these fir forests are crucial habitat for the monarchs they are also vital to many local and indigenous communities in the area providing wood for heating and cooking. Unfortunately the forests have become fragmented and degraded due to illegal logging and drought. Additionally, mountain streams have been affected by diversion of water resources for human use. These water sources are important for the monarchs as they don't drink water throughout their long migration to the wintering area.

BREEDING HABITAT

Once the monarch starts its annual migration north it first mates and then must find milkweed plants. The entire lifecycle of the monarch butterfly is dependent on milkweed. The female monarch butterfly lays her eggs on the underside of the milkweed leaves, which provide protection for the developing caterpillar. When the caterpillars hatch after about four days, they begin to eat the leaves of the milkweed plant. The caterpillar feeds on the milkweed for about two weeks until it pupates. After another two weeks an adult monarch butterfly emerges from its protective chrysalis.

Monarchs lay their eggs on milkweed plants

Caterpillars feed on milkweed

The milkweed offers more than just a food source for the developing caterpillars. Milkweed provides the monarch butterflies and their caterpillars with a unique form of protection. Milkweed is named for its milky sap. The sticky white sap contains a mild poison and its bitter taste warns away many of the animals and insects that try to eat its tender leaves. Monarch butterfly caterpillars are immune to the toxin. By feeding exclusively on milkweed leaves, they are able to accumulate enough of the poison in their bodies to make them distasteful to predators. Predators to the monarch caterpillar, especially birds, do not enjoy the bitter taste and therefore leave them alone. The bright orange color of the adult monarch's wings warns other animals that it will not be a very pleasant insect to eat.

As an adult, the monarch butterfly pollinates milkweed and other flowering plants as it looks for nectar. This helps the milkweed and other nectar plants produce seed to grow new plants for the following years. Because monarch butterflies are always on the move, they need the right nectar producing plants in bloom for needed energy along their migration route. While monarch butterflies depend on milkweed to lay their eggs during the journey, they also rely on other nectar producing plants that bloom throughout the season for their food.

Monarchs need nectar plants for energy

The decrease in milkweed on which monarch butterflies lay their eggs and that their caterpillars exclusively feed upon is a significant factor in the monarch's decline. In the past milkweed grew up along field edges or in between rows of corn and soybeans. But today, many farmers plant herbicide-resistant versions of these crops, which allow them to spray their fields with herbicides to kill weeds, and also kill milkweed and other nectar plants in the process. Additionally, herbicide application and increased mowing in roadside ditches and agricultural margins is eliminating milkweed and other native nectar producing plants. Monarch habitat reduction can also be attributed to urban sprawl and continuing industrial development along with droughts and climate variability in critical breeding areas.

These unintended consequences are having a huge impact on this iconic butterfly. However, Missouri farmers, communities, and organizations are pooling their resources to stop the decline of the monarch and increase their numbers.

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