

Matching monarchs using citizen science

 fws.gov/midwest/news/MonarchCitizenScience.html

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Tagged monarch butterfly. Photo by Katie Steiger-Meister/USFWS.

In order to conserve the monarch migration in North America, scientists need a thorough understanding of all aspects of this phenomenal journey. We at the U.S. Fish and Wildlife Service invite you to help us learn more about monarchs through participating in citizen science programs.

Scientists know that roughly the entire fall migration season is 85 days - based on first roost reports and arrival dates at overwintering sites in Mexico. Monarchs fly an average of 22 miles a day, traveling only during daylight. Larger monarchs migrate faster than smaller ones. The number of butterflies arriving in their northern breeding range in the summer can highly predict the eventual size of the migration generation. These discoveries were made with the help of citizen scientists.



This map displays the North American monarch butterfly range. There are three monarch butterfly populations in North America. Two of these populations migrate - eastern (east of the Rocky Mountains) and western (west of the Rocky Mountains). The eastern population overwinters in central Mexico and breeds throughout the United States and southern Canada. The western population overwinters along the California coast and breeds across the western states and southern Canada. The non-migratory population of monarch butterflies live in Florida year round. [Download the monarch migration map \(1.2 MB PDF\)](#)

Be a citizen scientist

There are still unknown facts about the monarch's migration. You can help match the scientists to monarchs. By recording and sharing your monarch observations, you are a citizen scientist and you can contribute to our understanding of the monarch butterfly migration.

Citizen scientists make large-scale studies possible by providing data, time and other resources at continental scales over several years. A 2015 study on citizen science contributions for monarchs showed that 17% of 503 monarch-focused research publications in which new results were presented between 1940 and 2014 used citizen science data. Your contributions to citizen science make a big difference.

Monarchs and citizen science have been closely tied for decades. Starting in the 1950s, hundreds of volunteers with Dr. Fred Urquhart's Insect Migration Association searched for the then mysterious overwintering grounds of migrating monarchs. This tagging project allowed Urquhart to track the flights of individual butterflies, and ultimately led to the 1975 discovery that monarchs from the northern U.S. and southern Canada were overwintering in central Mexico.

Today, thousands of volunteers tag monarchs through Monarch Watch. These dedicated citizen scientists are playing a critical role in answering questions about the fall migration. How do monarchs move across the continent? How is their migration influenced by weather and are there differences in the migration from year to year? Scientists need data to answer these questions and they need your help! Only through citizen science efforts will they be able to obtain sufficient information to answer these questions.

Be a matchmaker! Play a part in ensuring a future filled with monarchs. [Learn more from the Monarch Joint Venture about opportunities to participate in monarch citizen science efforts in the U.S.](#)