Katelyn Powers

BIO 248

Monarch Butterfly Conservation

The North American monarch butterfly is a unique insect, noted for its yearly migratory behavior. In late summer, virtually the entire adult population migrates from their spring breeding location in the southeastern United States to a restricted area of neovolcanic highlands in central Mexico. Summer breeding occurs across the northern and western US, with high monarch density in the corn belt of the Midwest. Milkweed is the only host plant for monarch caterpillars and a decline in milkweed has been suggested to be the cause of adult monarch population decline. The adult population has declined around 80% in the last 25 years. Though the primary cause of milkweed decline is still debated, an emphasis on monarch conservation has gained media presence. Students can assist in these conservation efforts by planting the milkweed necessary to support developing monarchs. A program should be established at St. Olaf College to provide students with milkweed seeds before a school break, so that these seeds can be scattered in locations across the country to increase abundance of milkweed for monarchs.

 Information on monarch population patterns has been collected by researchers using mathematical models to predict fertility rates and milkweed searching behaviors. These models disproved theories of climate change, migration mortality, and overwintering habitat loss as the primary cause of adult monarch population decline. They suggest that genetically modified herbicide resistant crops have decreased milkweed abundance and are the main factor to blame for monarch decline. Other researchers agree that monarch and milkweed populations are declining, but state that this decline first began in the 1950s, nearly 50 years before GM crops were introduced. These claims are based on museum collection data of the percent abundance of monarch and milkweed specimens. Though researchers do not agree upon the primary cause of milkweed decline, strategically planting more milkweed is a common recommendation for increasing the monarch population.

 Some argue against these claims by asserting that the monarch population decline is actually not due to a lack of milkweed and recommend putting conservation efforts into supporting the later phases of the monarch’s migratory cycle. Though increasing nectar sources and overwintering habitat would be beneficial to monarchs, the methods of analysis used to disprove the milkweed hypothesis have been critiqued. Altering agricultural practices to reduce herbicide use would benefit milkweed populations, but changes in the agriculture industry are unlikely to occur. For this reason, placing efforts into increasing milkweed abundance appears to be the most effective and practical approach to monarch conservation.

 Environmental organizations on college campuses should begin monarch conservation programs that provide all students that are interested with milkweed seeds before spring break. Students can then take these seeds with them as they travel across the country and scatter the seeds in locations, such as road sides or backyard gardens. This approach would increase the geographic area under conservation efforts and prevent seeds from being planted in high densities on campus. Milkweed seeds could also be harvested from plants on campus to be used in future years. This program provides interested students with a simple way to become involved in conserving monarchs, a well-known and loved species.

Sources

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