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Decline in Monarch Butterfly Populations

Monarch butterfly population declines have recently been the focus of multiple researchers in an attempt to find the factor or factors that are causing the rapid decline. Much of this research is centered around the main food source for monarchs, milkweed, and the impact of genetically modified crops has had on milkweed populations. Other researchers have looked back historically to find out a specific time period when the decline began to occur and researchers seem to have a split decision on whether or not genetically modified crops are the culprit of the decline in the monarch butterflies. The following evidence shows that there is an obvious decline and more in depth research needs to be done to find out more information about the population decline of monarch's. This further research could be used to not only save the monarch populations but could be applied to many other insects that have shown similar popular declines in recent years.

Some researchers claim that genetically modified crops are not responsible for the decline in monarch butterfly populations. There is substantial evidence supporting the claim from U.S. historical records which shows the decline in the monarch populations beginning in the 1950's, meanwhile genetically modified crops were not introduced in the United States until 1996 and did not make up a significant portion of the United States cropland at the time. Genetically modified crops that were resistant to

herbicides only made up around 2% of the total population in 1996 and the years following.

Additionally, Researchers have found that the decline in the population each year for the monarchs did not occur when in the presence of milkweed or in other words while the Monarchs were in the U.S. Which means the decline in the population did not occur where herbicides and genetically modified crops were widely used. The decline in population occurred after leaving the United States where milkweed is found when the monarch populations moved south for the winter. So, based on this evidence this article supports the claim that the presence of GMO's are not responsible for the decline in butterflies because the decline in milkweed abundance is not solely responsible for the monarch butterfly population decline.

Alternatively, some counter arguments claim that the monarch populations are affected by the use of herbicides and genetically modified crops. Citizen data was used to show a decline in monarch populations that is strongly correlated to the decline in milkweed populations inside of the buffer zones between farms in the U.S. due to the buffer zones becoming smaller and smaller, which also could be seen as a decline in the milkweed population being correlated to the decline in monarch populations also.

Using this evidence from researchers that attempt to find the cause of the recent decline in the population of monarchs I believe that there is an obvious decline in monarch populations beginning in the 1950's, along with a decline in milkweed populations in the United States that began in the 1940's. This evidence shows that the decline did not begin due to the appearance of genetically modified crops, which I will

agree with, but this information does not prove that GM crops do not have an impact on both milkweed and monarch populations in recent years. It is actually shown that milkweed density is being reduced from herbicide usage which could potentially impact the monarch populations. I believe that there are potentially multiple other factors that could have caused the population decline of monarchs. For example, climate change, yearly weather patterns, deforestation of wintering grounds, and the regions where milkweed can grow year round is increasing.

In order to save these butterflies and to begin restoring the population a more in depth study needs to be done, first to find when herbicides began to be used in the United States and research if that could potentially have an impact on the decline in both the milkweed and monarch populations since it seems to be a topic that is discussed within the articles but the history of the use has not been studied in depth in terms of the monarch populations. This research cannot be done for free so student led organizations need to help acquire funding for a more in depth research into this topic so the cause can be found, and maybe the solution could be applicable to other declining insect populations (e.g. bumblebees) and more than just the monarchs can be saved.