Introduction

Due to climate change, *Abies religiosa*, the safe haven for Monarch butterflies (MBBR), are being threatened in the near future.

- *Abies religiosa* is a fir tree that lives in high elevations in Mexico and thrives on the winter and spring rainfall since they are sensitive to droughts.
- Due to the lack of rain or an increase in temperature, it can eventually lead to a forest fire. This can cause the branches in these trees to thin, overall reducing the amount of *Abies religiosa* species in this area.
- The Monarch butterflies are attracted to these trees, especially during November to March due to the rainfall when the trees are at their best.
- However, if the branches are thinned, the tree cannot provide a shield of protection and could kill the butterflies.
- It is crucial to save these trees because Monarch butterflies usually migrate back to the same sites.

Researchers came up with the method to test *Abies religiosa* in four different sites based on elevation.

Methods

Seeds

- Researchers collected *A. religiosa* seeds along 3100-3500 meters at 50 meter intervals. They then gave the seeds a sanctuary in order to receive the proper care, like providing sunlight and shade.

Test sites

- They conducted a test at four different locations and planted five to eight different populations at: 3400m, 3600m, 3800m, and 4000 meters.

Measurements

- Researchers measured plant height twice a month and plant diameter every six months. They also considered the plants survival and how that affects the competition of the seeds with other plant species, like shrubs.

Climate

- Precipitation was measured by capturing rainwater into rainwater traps per site. The temperature and precipitation at each site were both calculated to find the averaged and the monthly mean.

Data