

Tegan McMahon

I am a third year Biology and Chemistry double major with a particular interest in the wonders of plants and what they can do, both as part of the ecosystem and for humans.

I hope to continue studying plants throughout my life, though whether that takes the form of ecology, conservation biology, or doing studies in the hopes of furthering etuaptmumk (two-eyed seeing) is still up for debate. Thus, understanding how different species respond to the hardships of climate change and

creating a method to study these effects could be incredibly valuable. In the more immediate future, if this proof-of-concept bears fruit the plan is to do a full study on some species of plants native to Nova Scotia next year.

With climate change becoming an ever-present fact of life and bringing with it highly variable temperatures and weather patterns, I believe it is incredibly important to have an understanding of how this will affect plants and ecosystems overall.



Proof-of-Concept Study on the Effect of Climate Change Caused Temperature Variation on Seed Germination and Seedling Vigor

Tegan McMahon and Dr. Zoe Panchen

As extreme weather events become increasingly common, this experimental procedure hopes to determine how extreme hot, cold, or wildly fluctuating temperatures in spring will affect plant growth and the risk levels for plant species in the future.

Objectives:

- To determine whether temperature extremes during the first days of germination will affect the germination rate and seedling vigor while using species that are expected to have good germination.



Figure 1. Plates of seeds being grown on in the Growth chamber for seedling vigor determination

- To determine the best way to do these experiments in the future:
 - Phytotron vs growth chamber (precision and accuracy)
 - Rate for recording the temperature and humidity
 - Best type of sensors for the experiment
- Whether the Procedure and length of the treatments are effective in showing a significant difference in germination rate and seedling.

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