



# Multiple Stressors and the Effect on Beaver Stump Mortality

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Grade

# Introduction

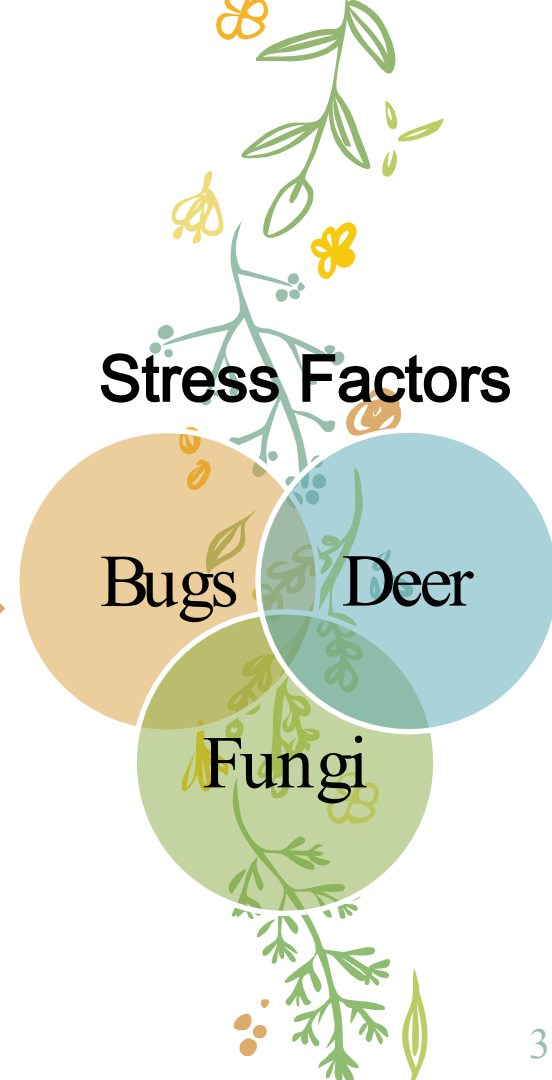
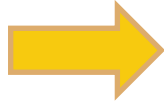


+ American Beaver  
(*Castor canadensis*)

# Introduction



✦ Beaver Stump



## *Research Question: Hypothesis:*

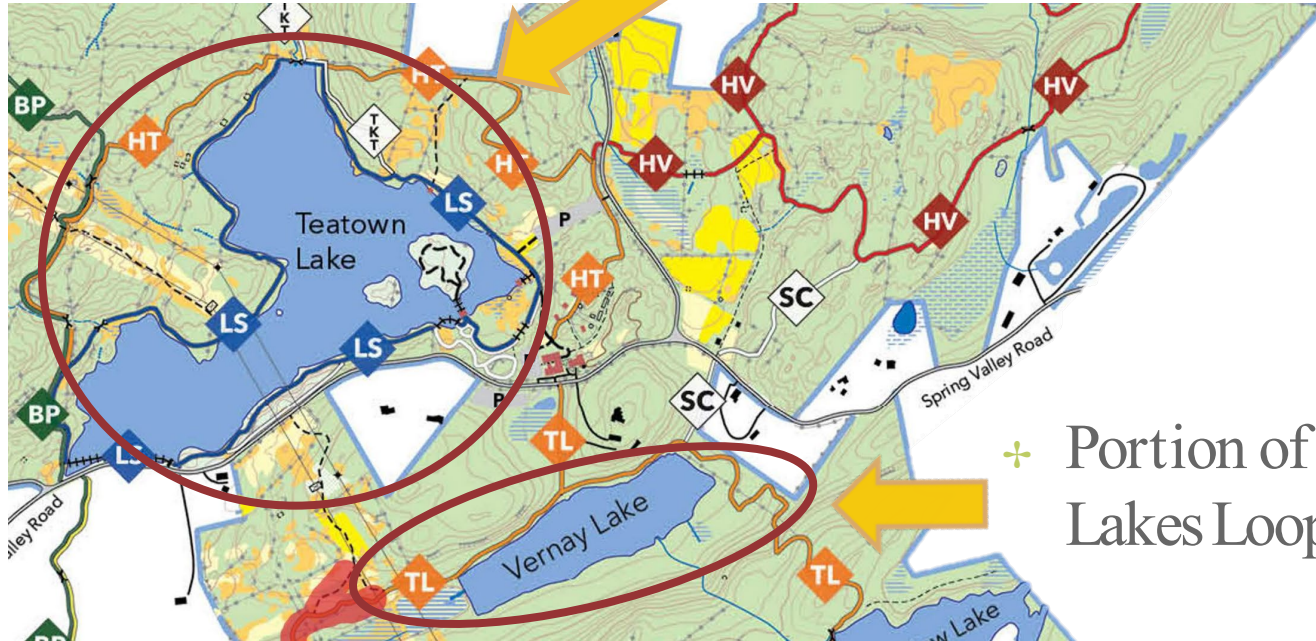
*How does stress affect the mortality rates of beaver and fungi will increase the mortality of beaver stumps?*





# Methodology

+ Entirety of Lakeside Trail



+ Portion of Twin Lakes Loop



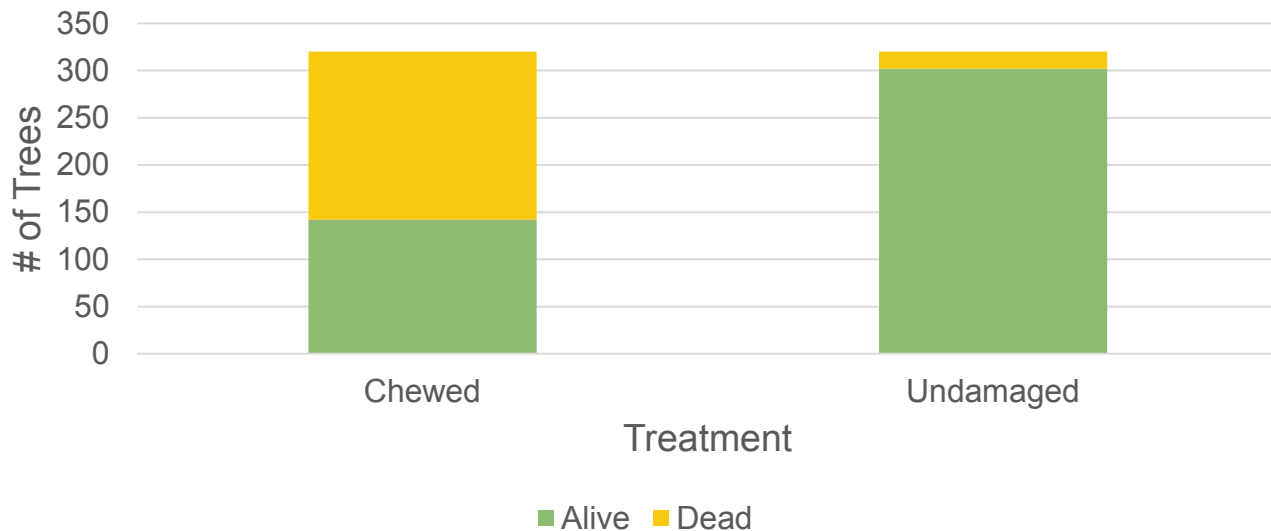
# Methodology:

Tree #	Treatment	Species	Browse	Bugs	Fungi	Alive/Dead	Date	Location
1	Chewed	Beech	Yes	No	No	Dead	7/8/2019	Teatown Lake
2	Undam	Beech	No	Yes	No	Alive	7/8/2019	Teatown Lake
3	Chewed	Unknown (#1)	Yes	No	No	Alive	7/8/2019	Teatown Lake
4	Undam	Unknown (#1)	No	No	No	Alive	7/8/2019	Teatown Lake
5	Chewed	Beech	No	No	No	Alive	7/8/2019	Teatown Lake
6	Undam	Beech	No	No	No	Alive	7/8/2019	Teatown Lake
7	Chewed	Oak	Yes	No	No	Alive	7/8/2019	Teatown Lake



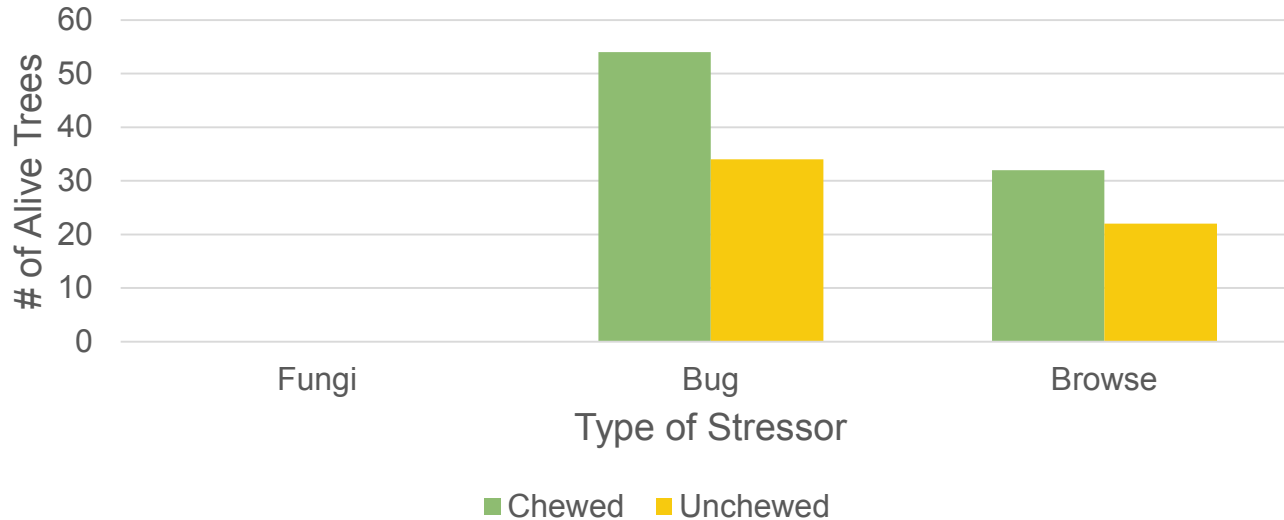
# Graphs

**Figure 1:** The Effect of Treatment on the Status of the Trees



# Graphs

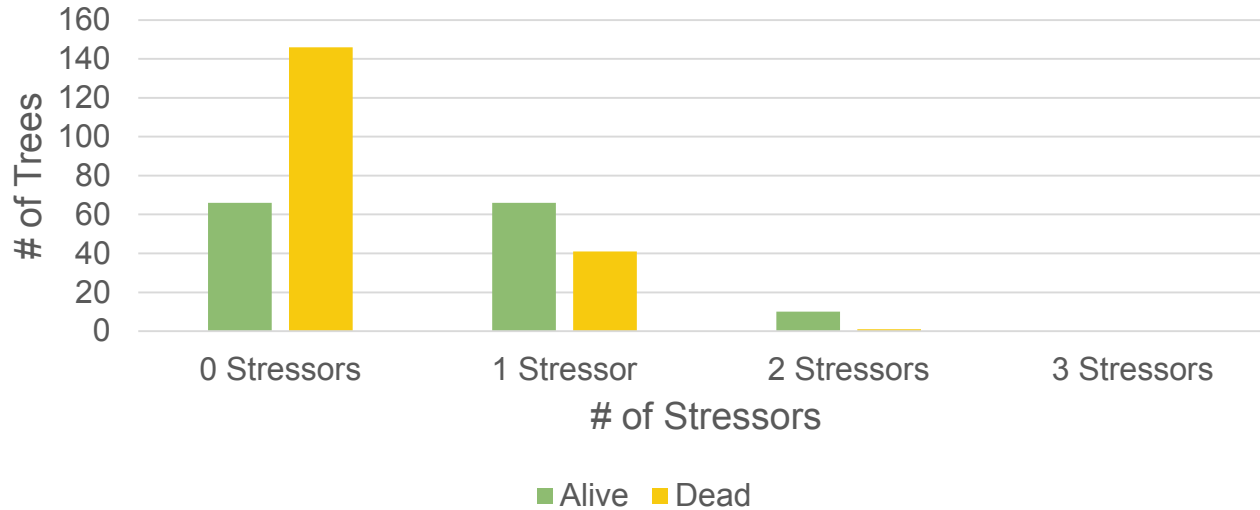
**Figure 2:** Different Types of Stressors on Alive Chewed/Unchewed Trees





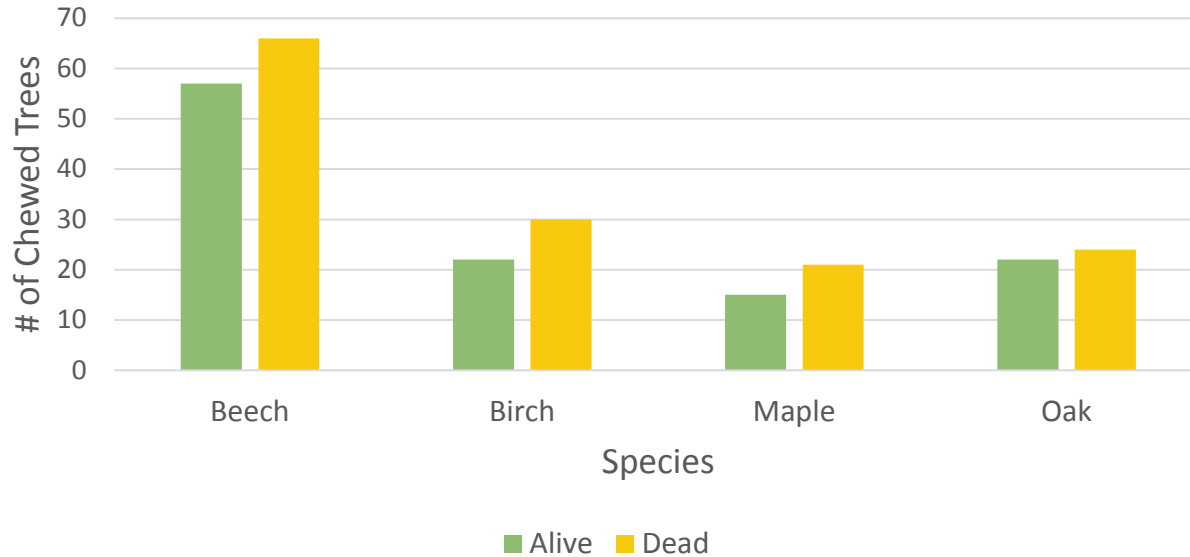
# Graphs

**Figure 3:** The Effect of the # of Stressors on the Status of Chewed Beaver Stumps



# Graphs

**Figure 4:** Beaver Preference and Mortality Rates



# Discussion

- + Fungi appeared on trees after they died
  - + Did not increase amount of stress
- + Deer tend to not eat regenerating saplings
  - + Difficult to access
  - + Plenty of food
- + Bugs the most common stressor
  - + Damaged a small proportion of trees



# Discussion

- + Many beaver stumps died without any stressor
  - + Trees that are older are less likely to regenerate
  - + Many other factors such as depending on their type, root health and general growing conditions

This is important because the presence of beavers could lead to deforestation over time





# Conclusion

Data did not support hypothesis as the Chi-Squared analysis found no relationship between beaver stump mortality and stressors



# Future Research/Limitations

- + Look at other conditions that could have affected regrowth
  - Ex: Soil acidity, sunlight, weather, etc.



- + Hikers could have potentially scared away deer
- + Human error in identifying trees and deer herbivory





# Acknowledgements

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- + Mr. McIntyre
- + My family

..for helping and supporting me  
throughout my research



Picture taken by me