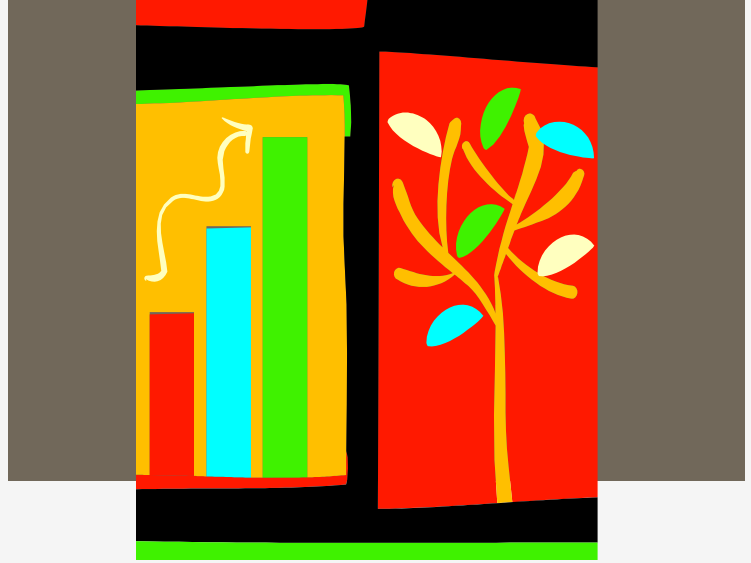


By: Nikai  
Fondon



## Harwood Trees vs. microclimate

The effects on Hemlocks and Oaks

# purpose

- To compare the vegetation under the hemlock to the vegetation under the oak tree and to determine which (if any) abiotic factors such as light intensity, pH level, soil temperature, soil moisture and air temperature affect this difference.

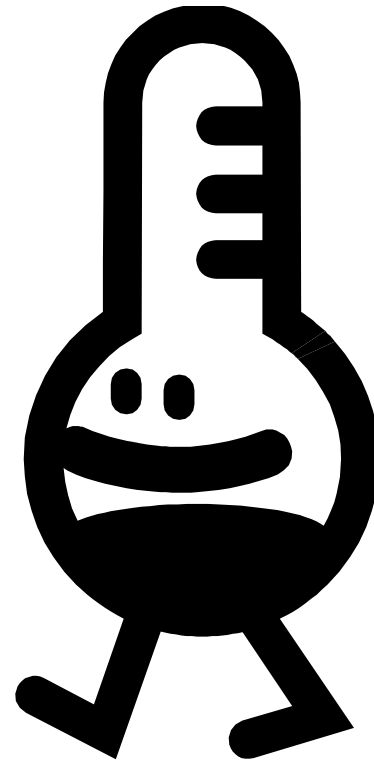
# Results

- See charts in next few slides
- We were tree #2 for both trees (Hemlock and Oak)



# Factors effecting

- Soil Moisture
- Light Intensity
- Air Temperature
- Soil Temperature
- Soil pH



# Hemlock Trees

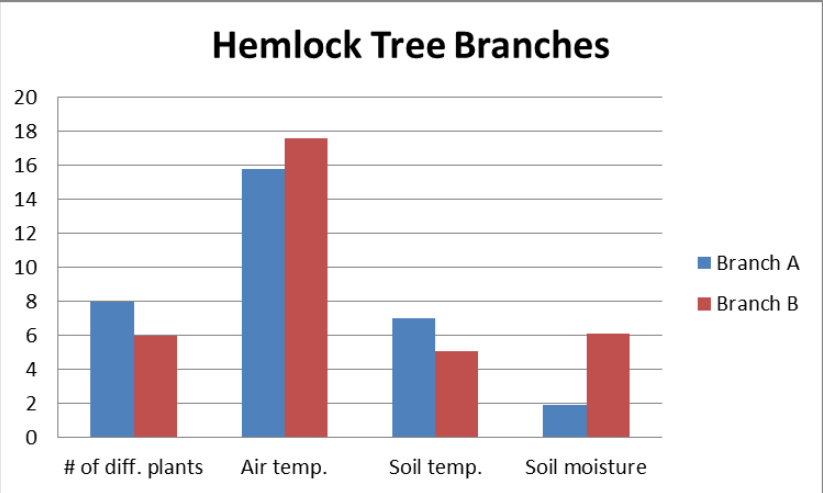
## Branch A

- Soil Moisture: 1.9%
- Air Temp.: 15.8
- Soil Temp.: 7
- Light Intensity:  
218.46
- Soil pH: 5.1

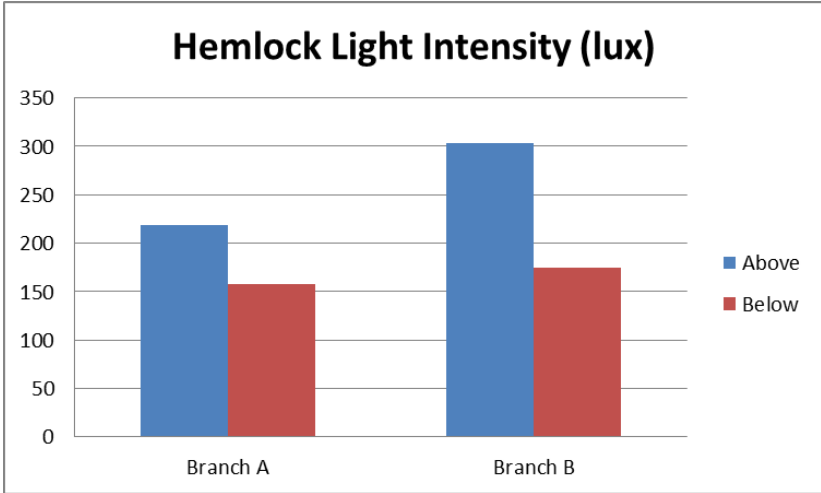
## Branch B

- Soil Moisture: 6.1%
- Air Temp.: 17.6
- Soil Temp.: 5.1
- Light Intensity:  
303.32
- Soil pH: 5.1

# Hemlock Tree charts



## Branch A vs. Branch B

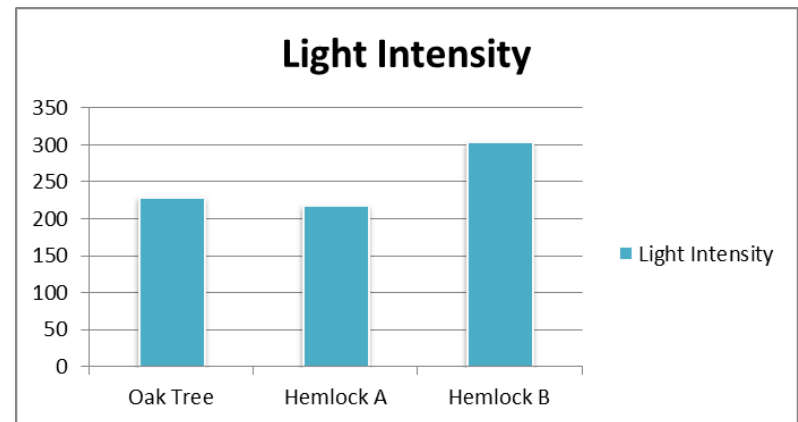
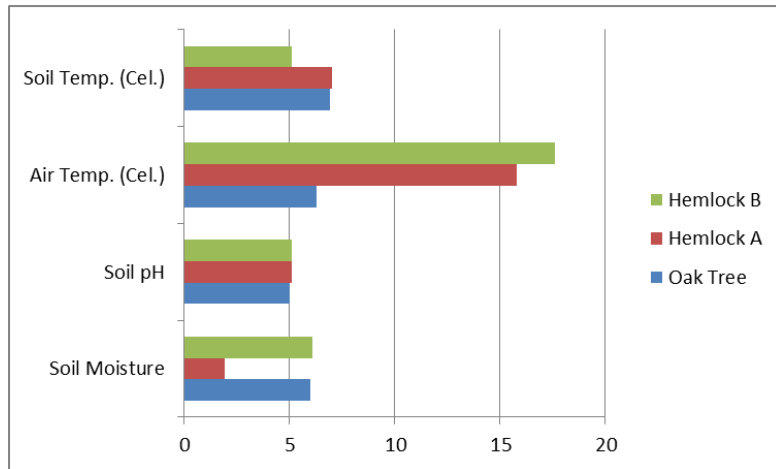


# Oak Tree

- Soil Moisture: 6.0 %
- Light Intensity: 229.18 lux
- Air Temperature: 6.3 degrees Celsius
- Soil Temperature: 6.9 degrees Celsius
- Soil pH: 5



# Oak vs. Hemlock charts





# Hemlock Trees; plant types

## Branch A

- 3 strawberry plants; 5 leaves, dark green, rigid edges
- 10 grass clumps; light in color because of weather
- 12 clover plants; 3 green leaves rounded leaves
- 10 plants 3 leaves long darkish green

## Branch B

- 0 shrubs
- 1 lichen; flat and light in color
- 6 moss; some short soft and stubby, other short with light colored leaves

# Oak Tree plant types

- 10 grass clumps; light greenish yellow colored because of weather, dried, long leaves
- 7 mosses; green, short, soft, typically found in moist areas
- 1 lichen; light colored, flat, found on bark

# Conclusion

- The purpose was accomplished in this experiment. Specifically, the purpose was to compare the vegetation life below the trees and determine whether abiotic factors such as light intensity, soil pH, soil moisture, soil temperature, and air temperature affect this difference. The tree (hemlock) with the higher numbers essentially had the most vegetation while the tree (oak) with the lower numbers in the various categories had the least vegetation.

## Conclusion 2

- As seen in the data of plant numbers, the hemlock tree also had more of a variety of vegetation. The hemlock trees' access to abiotic factors such as air, water, and sunlight more so than the oak tree allowed the vegetation to be more abundant. For example, in the oak vs. hemlock charts, it is easy to see that the hemlock branches' air temperature is higher and plants grow easier in a hotter temperature rather than a colder one. Sunlight, an abiotic factor, helps with photosynthesis in plants which explain the reason why the hemlock tree (with the higher light intensity) had more plant life.

## Conclusion 3

- The soil pH was generally the same but that would explain why some plant numbers could have turned out to be the same. The number of clumps of grass were close in numbers; both trees had about 10 clumps. Overall, the hardwood trees were affected by the presence or lack thereof of abiotic factors.

Thank you! 😊

**Hemlock Tree**



**Oak Tree**

