

BACKGROUND

- Myers Way Wetland in Seattle plays a significant role in providing food to salmon, and shelter and energy to native bugs and plants
- Myers Way Wetland is troubled with prosperous noxious weeds, which seriously threaten native plants
- To restore the wetland, it is important to identify the best practices to remove invasive noxious weeds
- The purpose of this project is to remove invasive plants efficiently and find better-growing conditions for native trees in wetlands

RESEARCH QUESTIONS

- What are the best practices to remove noxious weeds efficiently?*
- What are the better living conditions for Western Red Cedars?*

INTERNSHIP & METHODS



Internship & Methods

- I interned at Weed Warriors, Nature Stewards Program during the summer and fall quarter
- I removed different species of noxious weeds in Myers Way Wetland (Figure 1)
- I set up an experiment that included on-site personal observation and measuring of the height of the Western Red Cedars I grew



Papers

- I completed a literary review on wetlands and wetland restoration



Figure 1. These are the most common noxious weeds in Myers Way Wetland (Left: Himalayan Blackberry/ Top right: English Ivy/ Bottom right: Buttercup)

RESULTS



Efficiently remove Noxious Weeds:

- Apply suitable methods and practices to remove noxious weeds (e.g. shovels, clippers, hands)
- Remote sensings control the population of noxious weeds (e.g. Light Detection and Ranging [LiDAR] & hyperspectral)
- Some methods tell us wetland restoration is meaningful (e.g. Land Use Capability Indicator)



Findings from the experiment

- Observation from June 24th to August 19th, 2023. (Figure 2)
- Did not find a strong positive correlation between the growth rate of Western Red Cedars and living conditions
- Most of the trees thrived under each living condition during the observation, except the #6, which was stepped over by homelessness around the wetland
- The key experimental limitation is the short time frame. I was unable to observe significant growth in Western Red Cedars

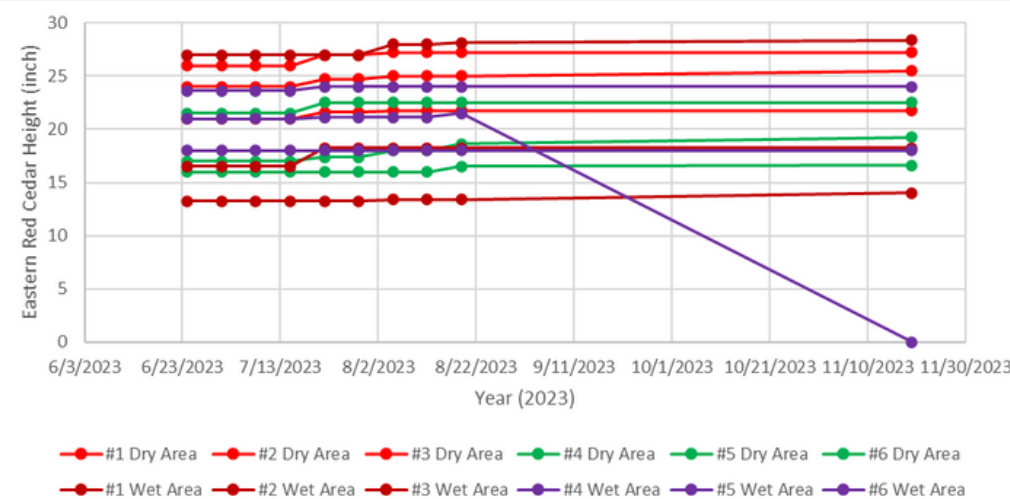


Figure 2. This chart shows the growth rate of Western Red Cedars I planted in the wetland during my Capstone internship in the summer quarter in the Myers Way Wetland. 12 Western Red Cedars in total. Six were in a drier soil area, and the others were in a wetter area. Among those six trees, three in each area were not watered (#1-3) and the other three were watered with 1 gallon of water per week (#4-6).

RESULTS



Challenges to Wetland Restoration:

- Economic interest hinders the success of wetland restorations
- People lack uniform success indicators to know if their wetland restoration is successful
- Environmental education overall is not widespread among the public
- Homelessness around the wetland (Figure 3)



Figure 3. My group members and I in Weed Warriors worked on moving abandoned tires from the inside of the wetland along to the road and contacting the governmental agency to clean them up.

SIGNIFICANCE

- Manual removal methods are still the efficient way to remove noxious weeds, but we can also apply remote sensing techniques to prevent noxious weeds
- Weed Warriors will continue my work of measuring Western Red Cedar's growth rate and living conditions in Myers Way Wetland
- The legacy of this project will enhance the understanding of the proximate use of time and water in growing Western Red Cedars, therefore they can strengthen the ecosystem more efficiently

ACKNOWLEDGEMENT

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