A Seedling Identification Guide
For Common Plants on Mt. Rainier and the North Cascades

By Kyra Kaiser, University of Washington, Plant Biology Major & Environmental Science Minor

Background: Seedlings can be tricky to identify. They are very small, and lack prominent features such as flowers and fruits. Observers must rely almost entirely on leaf traits, such as leaf shape and size. However, the shape of seedling leaves is often different than the shape of mature plant leaves. There are many resources for identifying mature plants, but few for seedlings. This is problematic for researchers and restoration managers who are trying to track seed germination and seedling mortality rates in the field.

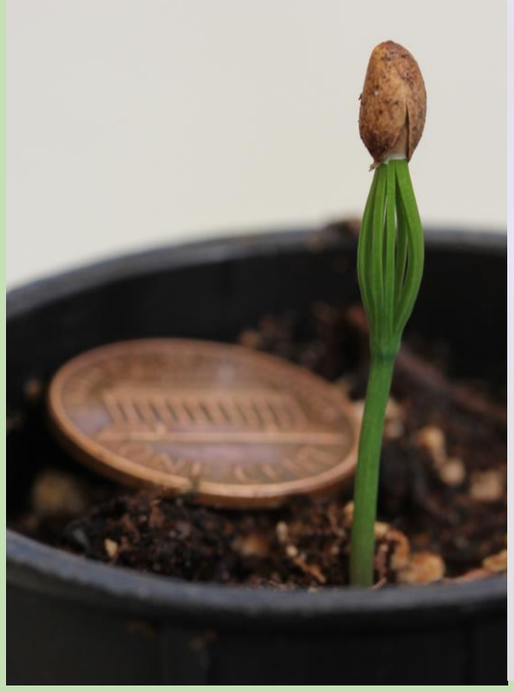
Above: Seedlings growing in the greenhouse

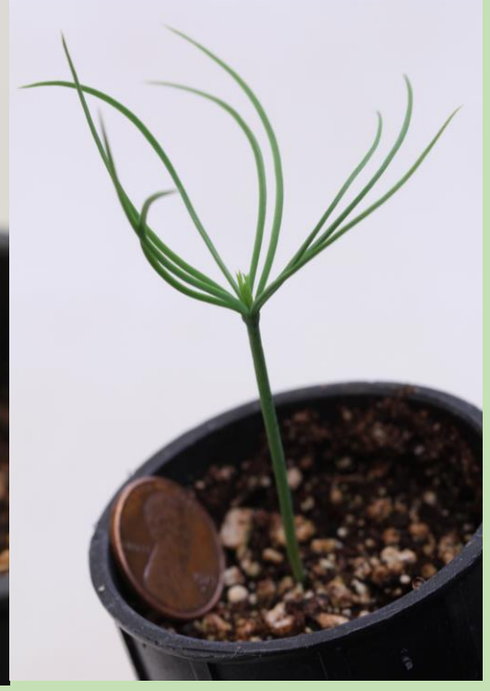
Objective: I am creating an identification booklet that includes photographs and key traits of thirty plant species commonly found on Mt. Rainier and the North Cascades. My booklet will be used by the Hille Ris Lambers Lab, a plant community ecology lab at the University of Washington that needs a field guide for their research on the effect of climate change on seed germination.

Methods: I collaborated with masters student Kimberly Ertel to germinate seeds from about thirty species of plants in the Douglas Research Conservatory at the Center for Urban Horticulture. The species that we are working with range from wildflowers to shrubs to trees. I am taking photographs of the seedlings and collecting data on key identification traits, including leaf and stem shape, color, and texture. Below are a few of my photographs!

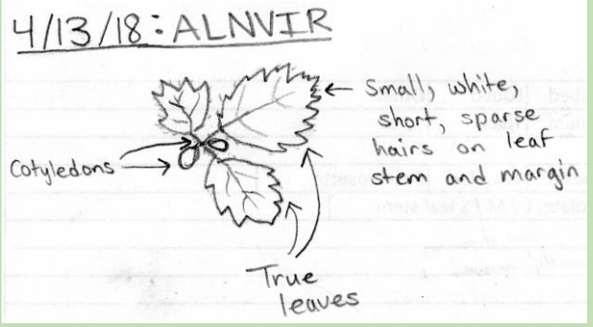
Red elderberry ***(Sambucus racemosa)***

Ponderosa pine ***(Pinus ponderosa)***





Green alder ***(Alnus viridis)***



Thimbleberry ***(Rubus parviflorus)***

Above: Before and after the seed shell popped off the first needles. Seed shells can be useful in seedling identification.
Bottom left: Hairs on the leaf margins are an important identification feature for this species.
Top left and bottom right: Note the difference in shape between the first and second set of leaves.
Top right: To collect data, I sketch leaf shape, plant form, and fill out a data spreadsheet.

Broadleaf lupine ***(Lupinus latifolius)***

Acknowledgements: Thanks to Kimberly Ertel, without whom I would not have been able to undertake a project of this scale. Additional thanks to Janneke Hille Ris Lambers for advising my project, the Hille Ris Lambers Lab, and the greenhouse staff.