

Raincoast Field School @ home: “Trees and Forests” Raincoast Challenge (4-7)

This week with the Raincoast Education Society you have been learning all about the forest ecosystem here on the coast. Remember learning about the annual growth rings of a Red Alder tree? These trees grow extremely fast maturing at 50 years old. These will be the first trees to colonize after a disturbance and are therefore super important as they provide shade for the coniferous species to establish next.

Here are a few images of a Red Alder tree:

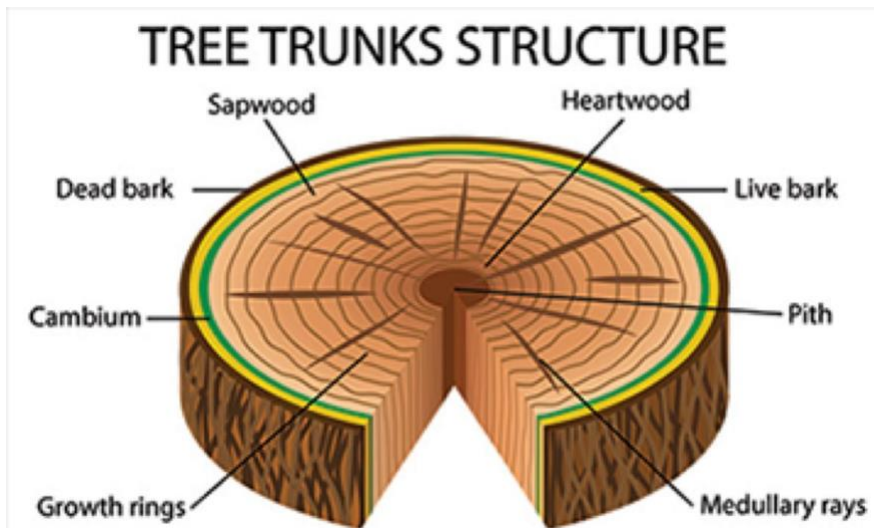


Challenge #1: Your first challenge is to head out into the forest and identify this new deciduous tree! Have a look around the site where it is growing. Are there other alders nearby? Is this alder growing in a mixed or uniform forest stand? How old do you think the living alder is?

Challenge #2: Along many of the trails throughout Tofino and Ucluelet, alders fall due to our high frequency wind disturbance events and end up across a popular trail. Our lovely community workers are quick to clear the path using chainsaws to remove the chunk of tree blocking our way. Your next mission is to find a cut tree and count the rings! Before you begin counting try to predict the trees age and determine whether or not the forest site was ideal for optimal growth. Remember, different species have different requirements. Is the site wet? Is it shady? What type of tree do you think will take advantage and grow in this new gap in the canopy?

*** for a more accurate count of the annual tree rings, use a small stick or pen to help keep track of the rings you have counted. Slide the stick across the cross-section as you count each ring. Sometimes the rings can be REALLY close together indicating a poor growth year; this counting stick will really make things easier.

Challenge #3: While you are still hanging around the cut tree, look closely at each ring. Remember a new ring is added under the bark every year of the trees life. This cross-section that you are looking at has many parts. Use this diagram to locate each part on the cut tree:



Dead Bark: The protective layer surrounding the outside of a tree trunk.

Cambium: The thin layer of living cells beneath the bark. This is where wood cell production occurs each year.

Sapwood: Is the layer of outer annual rings that are still living. This is where water and dissolved nutrients are transported from the roots up into the canopy. Depending on the tree type, the sapwood is typically lighter in color.

Heartwood: Is the layers of annual rings that are no longer living, these are found in the center of the tree. As a tree matures these center rings are no longer required in the transportation of water and nutrients. Instead, the heartwood helps with adding structural support to assure the tree can continue to grow taller without falling over.

Pith: The very center of a trees trunk, composed of soft tissue. Also helps in the transportation of water and nutrients.

Share your experience and results with us! #raincoastfieldschool

Image sources:

Alder bark <https://www.centralcoastbiodiversity.org/red-alder-bull-alnus-rubra.html>

Alder leaves <https://sites.google.com/site/elp2010riparian1/native-plant-species/red-alder-alnus-rubra>

Alder cones <https://www.flickr.com/photos/alisonleighlilly/8592842193/>

Anatomy of a tree <http://www.a completetreecare.com/blog/what-are-the-layers-of-a-tree-trunk/>