ForestGEO - sampling protocol for wood density

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1. General information

Per species, at least three tree individuals should be sampled. You can use the botanical material collected for the leaf trait analysis.

2.1. List of material needed

- Pruner, or other tools to cut branches
- Small receptacle with low weight (total weight including water should be within the range of your scale)
- Flagging tape to mark branches
- Waterproof permanent marker
- Razor blades or knife
- Dissection needle
- Scale (precision 0.01g)
- Water
- Paper towels
- Oven to dry samples

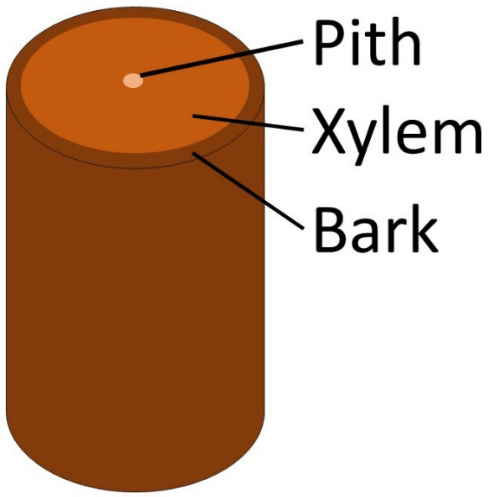
2.2. Preparation of sample

- Cut a segment of 2-3cm from each sampled tree (you can use the part you re-cut under water from the leaf trait measurements).
- Mark segments with flagging tape (tree species and individual).
- Put in water over night.

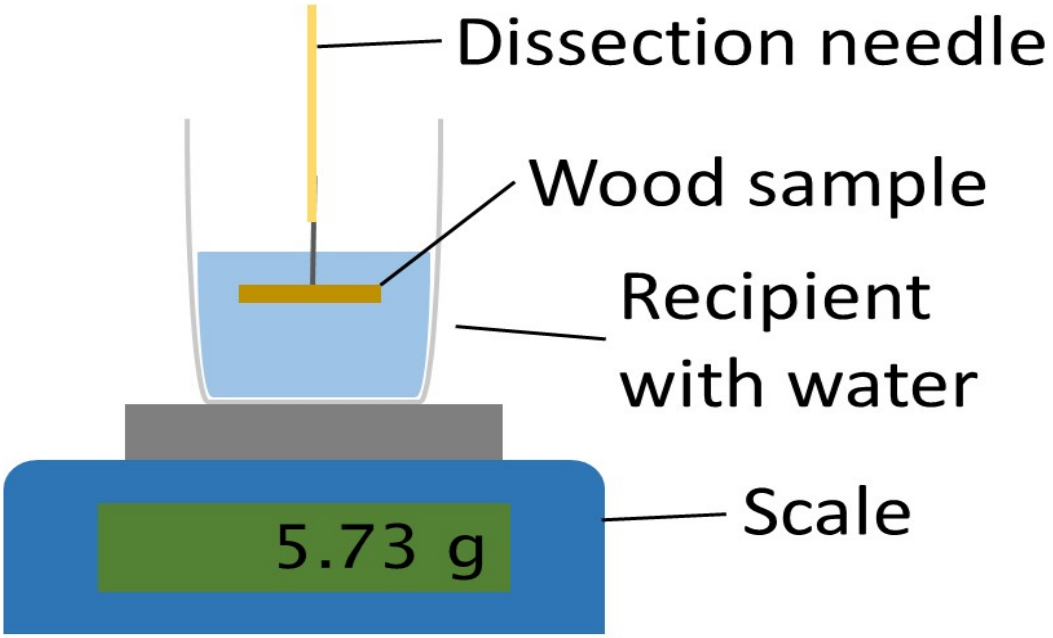
3. Wood density measurement

3.1 Fresh sample

- Take sample out of the water and dry with paper towel.
- Measure the stem segment diameter in the middle.
- Measure the length of the segment. Weigh the stem segment.
- Remove the bark with knife or razor blades.
- Measure the stem diameter without bark
- Split the stem segment along the pith and remove all soft tissue.
- Weigh the two halves of the segments again (you can weigh both halves together).



- Place receptacle with water on the scale and press Tara.
- Pin the two halves of the segment on the dissection needle and submerge in the water. Note: submerge the halves one by one and add up the two measurements.
- Dry the samples in an oven at 60·C for at least 48 hours.



3.2 Dry sample

- Weigh the dried wood again.
- Wood density is calculated as dry mass divided by volume of displaced water (g m^{-3})