

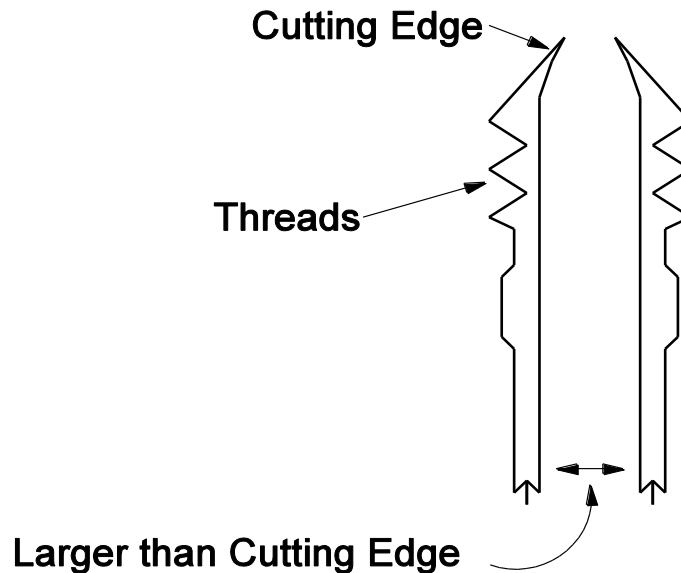
FOR 2542 - Forest Measurements and Inventory
Increment Measurements
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Increment Bore

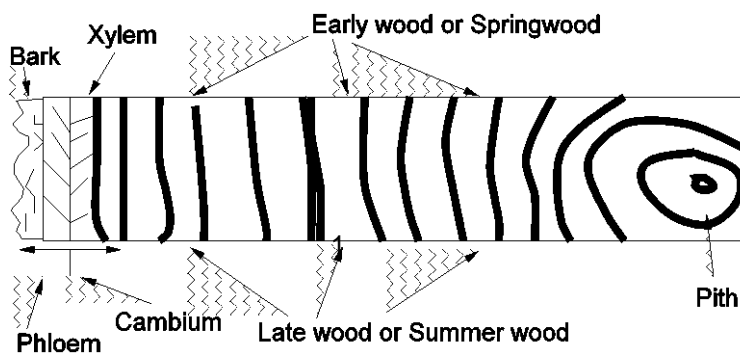
An increment bore is a device to extract a round core of wood from the stem of a tree. In temperate forests, these cores are useful to determine stem age and diameter growth increment.

Increment bores are expensive and delicate tools. They are made of high carbon steel, tempered to be quite hard. This helps to maintain sharpness and ease of cutting but also makes them easy to break (especially in oaks).

Cross-section of Increment Bore Tip



Note that the cutting edge is narrower than the bore through the rest of the bit. This allows the core to be extracted. The bore is cranked into the stem on a level line aiming for the center of the stem. Once an appropriate depth has been achieved the extractor “spoon” is inserted in the bore along side the core forcing the core against the side of the bore. The bore is then backed off a few turns which breaks the core loose from the tree. Then the core can be removed from the bore. **When boring oaks REMOVE THE INCREMENT BORE IMMEDIATELY** because oaks tend to swell around the bore increasing the difficulty of removal with time.



When counting increment core, it is preferred to have the core include the pith. Always count at the same relative place on each year. Remember that the tree grows from the cambium in both directions creating both wood and bark. The oldest bark is on the outside of the tree.

Stand History Plot

A simple plot of stand history can be made in the field using the following procedure.

1. Collect several increment core that extend to the center of each tree for trees that are competing within the stand.
2. Create a plot on graph paper labeled like Figure 8. Note that for every inch on the diameter scale you mark two inches because the core is measuring radius and you want diameter.
3. Mark every five years from the current year back to the center of the tree.
4. Using the core as a ruler transfer each mark to the appropriate year/diameter location.
5. Connect the marks and label the line.

