

All the cones that I would measure off of a leader shoot



Annual whorls



branch

Sampling: You count the number of cones, conelets, and cone scars at each annual whorl on the leader shoot (including the branchlets). Every cone, conelet and cone scar in the gold circle in the diagram is counted as part of one leader shoot, referred to as Leader Shoot 1 (Leader Shoots 2 and 3 are separate leader shoots and their cones would not be included).

Leader Shoot Definition: Must be a female cone bearing branch. Most shoots in the bottom half to two-thirds of a tree are vegetative or produce only male cones. These tend to be flimsy and have a “softer” look to them. The shoots that produce female cones are sturdier and usually are in the upper half to one-third of the tree.

Please note that Leader Shoot 1, 2 and 3 are all considered separate leader shoots because they branched from each other over 9 years ago.



Annual Whorl 1. Cone scar right below would be 2011. If there was a conelet above, it would be 2012.

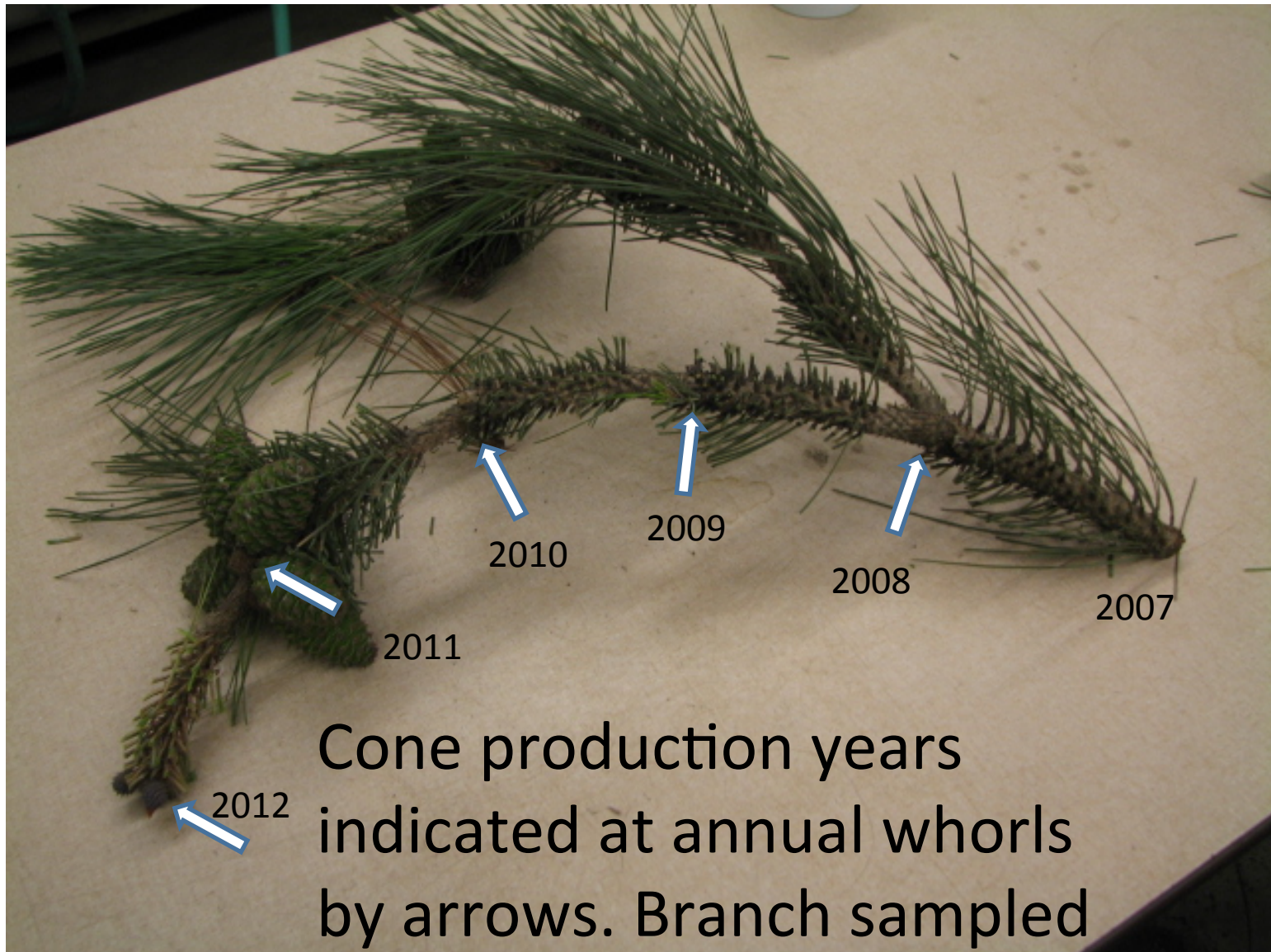
Annual Whorl 2

cone scar is from the year prior (2010)

Annual Whorl 3

*Cone or cone scar would be 2 years prior (2009)

Notes on year of cone are assuming we are sampling in Nov. or Dec. of 2011



Cone production years indicated at annual whorls by arrows. Branch sampled in the Fall of 2011



- A. Conelets (will mature in 2012)
- B. Cones (will mature in 2011)
- C. Cone remnant (matured in 2010) but fell from tree in 2011
- D. Same as "C," but bracts removed. Note "stump," which will become a scar
- E. Arrow indicates scar (blurry in this pic) from cone that matured in 2009
- F. Fork in branch occurred in 2008. Note cone scar at arrow.

*** Branch sampled in Fall of 2011**