

Instructional Video 4. Dendrochronology: A tool to date past disturbance events

Biogeographers can date disturbances by looking at the annual ring sequences of trees that established immediately after a particular disturbance. So, annual rings are laid down during the growing season, and they consist of easily recognizable couplets [pairs] of wood, of early wood and late wood. Early wood marks the rapid cell growth during the early part of the growing season, and has larger cells so appears lighter. The darker, denser late wood is laid down towards the end of the season, and appears dark. So, each ring is laid down just under the bark in a region called Cambium. We identified a suitable stem to core, one of the larger stems within this relatively even-aged, post disturbance cohort of Alder, to ensure that we have an individual that will have established immediately post disturbance. And you can see how the core is obtained from this video. So, in the video, I used a Hagloff increment bore to extract a core containing a ring series that extends from the current year, just beneath the Cambium, to the first set of rings laid down by this tree, at its center or pith. I've extracted the core low down, about 15 cm from the base of the tree in order to capture the earliest ring laid down during the initial seedling establishment of this individual. Now we also aim in the direction of the trunks center since we're taking a cross-section through what is a series of concentric rings about the stems center. It's a hit or miss situation, we might find that central ring, but there are ways of estimating its location if we don't. So, here's the core, and it's beautiful. Now, a quick count revealed about 57 annual rings, which approximately matches the timing of disturbance at this site.