P-096

Using dendroecological indicators to produce and avalanche chronology of Penguin Slide, Chucach Range, Alaska

Michaela K. Precourt[1, 2] Eeva Latosuo[1] Jennifer Diep[1]

1. Alaska Pacific University, Anchorage, AK, USA; 2. Prescott College, Prescott, AZ, USA

Information derived from tree rings can be analyzed to produce an avalanche chronology, along with the help of historical records such as weather and snow depth data. Written records of historical avalanche activity are scarce in Alaska, particularly for our study site, Penguin Slide, a prominent avalanche path along Turnagain Arm in Chugach State Park. This undergraduate research project sampled ten trees along the east flank run-out track, as well as five healthy and unexposed trees (used for a control). From these samples we evaluated physical injuries, reaction wood, and abrupt growth changes. We predicted ten major avalanche seasons, the most intensive one being 1985. The 1985 winter is our most exceptional season, with six out of ten trees showing evidence of dramatic growth eccentricities. Compression wood supports most of these events; however, it is difficult to make any hard conclusions, as variability in each individual tree is dependent upon numerous factors. Past research has included vegetation studies and traumatic resin canals to complement their findings, and we suggest that these be taken into consideration for more confident results. This study is a contribution to Alaska State Parks' limited avalanche archives for the Penguin Slide area. Our research can help in the decision-making of future land managers and developers, and also bring a better understanding of the history of other forested slide paths in the Turnagain Arm area.