

The Occurrence of Severe Pacific Northwest Windstorms: A Multi-Century Dendroclimatic Assessment of their Ecological Impacts.

Currently funded by the National Science Foundation, Geography and Regional Science Program.



This is a collaborative research project with Dr. Keith Hadley of Portland State University. Hurricane-force winds from powerful mid-latitude storms affect much of the westside forests of the Pacific Northwest causing severe windthrow. Some trees, however, survive multiple high wind events, yet the central stem is snapped, altering the growth of the tree and creating a unique tree-ring growth signature. By identifying this growth signature, Dr. Hadley and I are working to reconstruct the frequency of these storms during the past 300+ years.

Dr. Keith Hadley and Shannon McDonald examine a core extracted from an old-growth Sitka spruce wind-snapped tree at Cape Falcon, Oregon

Beth Chappell and Shannon McDonald, students from Portland State University, coring an old-growth Sitka spruce at Cape Lookout, Oregon





William Tyminski and Justin Maxwell examine a recent blowdown at Cape Falcon, Oregon.



Cape Lookout, Oregon July 2008. Recent windthrow such as above creates an open canopy and is detected as anomalously wide rings for several years after the event.