

Curriculum vitae

JODI N. AXELSON

Department of Environmental Science, Policy and Management
College of Natural Resources
University of California, Berkeley
Phone: 510.642.8459 jodi.axelson@berkeley.edu

EDUCATION

- Ph.D. Geography, University of Victoria, BC. 2016
Dissertation title: *The effects of western spruce budworm (*Choristoneura occidentalis*) defoliation on Douglas-fir (*Pseudotsuga menziesii*): disturbance dynamics from the landscape to the cellular level*
- M.Sc. Geography, University of Regina, SK. 2007
Thesis title: *Historical streamflow variability in the South Saskatchewan River Basin inferred from a network of tree-ring chronologies*
- B.Sc. Geography, University of Victoria, BC. 2004
Thesis title: *Historical and recent morphodynamics of coastal dunes and foredune migration in Naikoon Provincial Park, Haida Gwaii, British Columbia*

ACADEMIC APPOINTMENTS

- 2016-present Assistant Cooperative Extension Specialist, Forest Health
Department of Environmental Science, Policy and Management
College of Natural Resources
University of California, Berkeley

PROFESSIONAL EMPLOYMENT

- 2013-16 Forest Entomologist, Cariboo Region
BC Ministry of Forests, Lands and Natural Resource Operations. Williams Lake, BC.
- 2015 Provincial Forest Entomologist (Acting)
BC Ministry of Forests, Lands and Natural Resource Operations. Victoria, BC.

2006-09 Forest Research Biologist
Natural Resources Canada, Canadian Forest Service, Pacific Forestry
Centre. Victoria, BC.

GRANTS & SCHOLARSHIPS

2018 California Department of Forestry and Fire Protection (PI), **\$106,279**
2018-19 United States Forest Service (Co-PI), **\$50,000**
2018-23 University of California, Agriculture and Natural Resources Competitive Grant
(PI), **\$200,000**
2017 California Association of Forestry (PI), **\$40,000**
2017 California Department of Forestry and Fire Protection (PI), **\$50,000**
2017 University of California, Agricultural and Natural Resources (PI), **\$10,000**
2017 National Park Service (Co-PI), **\$19,500**
2011-12 Pacific Institute for Climate Solutions: Ecosystem Resilience (Co-PI), **\$35,400**
2009 Mountain Pine Beetle Ecology Program, Foothills Research Institute (PI),
\$15,000
2012 Natural Science and Engineering Research Council, Michael Smith Foreign
Study Supplement, **\$6,000**
2010-12 Natural Science and Engineering Research Council, Alexander Graham Bell
Canada Graduate Scholarship. University of Victoria, **\$70,000**
2004-05 Natural Science and Engineering Research Council, Industrial Program
Scholarship. University of Regina, **\$42,000**

AWARDS & HONORS

2018 Agnese N. Haury Visiting Scholar Fellowship, University of Arizona
2012 Visiting Student Scholar, Swiss Federal Institute for Forest, Snow and
Landscape Research

PUBLICATIONS

Refereed Journal Articles

North, M., Stevens, J., Greene, D., Coppoletta, M., Knapp, E., Latimer, A., Restaino, C.,
Tompkins, R., Welch, W., York, R., Young, D., **Axelson, J.**, Buckley, T., Estes, B., Hagar, R.,
Long, J., Meyer, M., Ostoja, S., Safford, H., Shive, S., Tubbesing, C., Vice, H., Walsh, D.,

Werner, C., Wyrsh, P. *In Press*. Tamm Review: Reforestation for Resilience in Dry Western Forests. *Forest Ecology and Management*.

Axelson, J., Hawkes, B., van Akker, L., Alfaro, R. 2018. Stand dynamics and the mountain pine beetle – thirty years of forest change in Waterton Lakes National Park, Alberta, Canada. *Canadian Journal of Forest Research*, 48: 1-12. doi:10.1139/cjfr-2018-0161

Alfaro, R., van Akker, L., Berg, J., Van Hezewijk, B., Zhang, Q-B., Hebda, R., Smith., D. **Axelson, J.** 2018. Change in the periodicity of a cyclical forest defoliator: An indicator of ecosystem alteration in Western Canada. *Forest Ecology and Management*, 430: 117-125. doi: 10.1016/j.foreco.2018.07.060

Harvey, J., **Axelson, J.**, Smith, D. 2018. Disturbance-climate relationships between wildfire and western spruce budworm in interior British Columbia. *Ecosphere*, 9(3): e02126. doi:10.1002/ecs2.2126

Axelson, J., Smith, D., Daniels, L., Alfaro, R. 2015. Multicentury reconstruction of western spruce budworm outbreaks in central British Columbia, Canada. *Forest Ecology and Management*, 335: 235-248. doi:10.1016/j.foreco.2014.10.002

Axelson, J., Bast, A., Alfaro, R., Smith, D., Gärtner, H. 2014. Variation in wood anatomical structure of Douglas-fir defoliated by the western spruce budworm: A case study in the coastal-transitional zone of British Columbia, Canada. *Trees* 28(6): 1837-1846. doi:10.1007/s00468-014-1091-1.

Alfaro, R., Berg, J., **Axelson, J.** 2014. Periodicity of western spruce budworm in Southern British Columbia, Canada. *Forest Ecology and Management*, 315: 75-79. doi:10.1016/j.foreco.2013.12.026.

Axelson, J., Alfaro, R., Hawkes, B. 2010. Changes in stand structure in uneven-aged lodgepole pine stands impacted by mountain pine beetle epidemics and fires in central British Columbia. *The Forestry Chronicle* 86(1): 87-99.

Axelson J., Alfaro, R., Hawkes, B. 2009. Influence of fire and mountain pine beetle on the dynamics of lodgepole pine stands in British Columbia, Canada, *Forest Ecology and Management* 257(9): 1874-1882. doi:10.1016/j.foreco.2009.01.047.

Axelson, J., Sauchyn, D., Barichivich, J. 2009. New reconstructions of streamflow variability in the South Saskatchewan River Basin from network of tree-ring chronologies, Alberta, Canada. *Water Resources Research* 45, W09422, doi:10.1029/2008WR007639.

Refereed Reports

Butsic, V., McCann, H., **Axelson, J.**, Gray, B., Jin, Y., Mount, J., Stephens, S., Stewart, W. 2017. Improving the Health of California's Headwater Forests. Public Policy Institute of California, 39 pp.

Conference Proceedings

Alfaro, R., Hawkes, B., **Axelson, J.** 2014. Using dendrochronology to characterize forest disturbance by mountain pine beetle. In Di Filippo, A., Piovesan, G., Romagnoli, M., Helle, G., Gärtner, H. (2014), TRACE - Tree Rings in Archaeology, Climatology and Ecology, Volume 12 (pp.90-95). Scientific Technical Report 14/05, GFZ German Research Centre for Geosciences.

Alfaro, R., **Axelsson, J.**, Hawkes, B. 2009. Mountain pine beetle increases the complexity of fire-origin lodgepole pine stands in British Columbia, Canada. In Mountain pine beetle: From lesson learned to community-based solutions conference proceedings, June 10-11, 2008. BC Journal of Ecosystems and Management 9(3): 85-89.

Other Publications

Alfaro, R., **Axelsson, J.**, Hawkes, B. 2009. Decision Support for Forest Management in a Mountain Pine Beetle Environment: The dendroecology and stand dynamics of a selection of Permanent Sample Plots, Alberta, Canada. Final Report to the Mountain Pine Beetle Ecology Program, Foothills Research Institute. 52pp.

Alfaro, R., **Axelsson, J.**, Hawkes, B., Copeland, A. 2008. Stand dynamics following mountain pine beetle outbreaks in central British Columbia: a synthesis for decision-support. Final Report FIA-FSP Project # M08-6044. Pacific Forestry Centre, Victoria, BC. 46pp.

Sauchyn, D., **Axelsson, J.**, Beriault, A. 2006. Proxy Streamflow Records for Water Planning In Western Canada. Technical Bureau Supplement, Water News 25(2): 11-17.

SEMINARS

Axelsson, J., Alfaro, R., Smith, D., Gärtner, H. 2017. Variations in wood anatomical structure of interior Douglas-fir defoliated by the western spruce budworm: A case study in the xeric zone of southern British Columbia, Canada. University of California, Berkeley. Environmental Science, Policy and Management Departmental Seminar. April 13 2017.

Axelsson, J., Alfaro, R., Hawkes, B. van Akker, L. Rocky Mountain forest demography and mountain pine beetle outbreaks. University of California, Berkeley. Department of Environmental Science, Policy and Management, Forestry Seminar. April 24 2017.

PROFESSIONAL MEETINGS

Sessions Organized/Chaired

Gentry, C., **Axelsson J.** (organizer/chair). 2018. Dendrochronology V: Dendroecology. Association of American Geographers Annual Meeting, April 10-14, New Orleans LA.

Gentry, C., Maxwell, S., **Axelsson J.** (organizer). 2015. Dendrochronology III: Disturbance Ecology. Association of American Geographers Annual Meeting, April 21-25, Chicago, IL.

Axelsson, J., Tardif, J. (chair) 2013. Wood Anatomy. AmeriDendro, May 13-17, Tucson, AZ.

Gentry, C., **Axelsson J.** (organizer). 2011. Dendrochronology IV: Dendrogeomorphology. Association of American Geographers Annual Meeting, April 12-16, Seattle, WA.

Invited Presentations

Axelsson, J. 2018. Understanding and assessing insect outbreak dynamics across scales - UAVs to wood anatomy. University of Nevada Reno, Geography Colloquia. April 25 2018.

Axelson, J. 2017. California's tree mortality: Lessons from the inter-mountain west (*Plenary*). Science to Management Symposium: Lessons Learned from Extreme Drought and Tree Mortality in the Sierra Nevada. USDA Climate Hub, August 25 2017, Sacramento CA.

Selected Presentations

Axelson, J. Alfaro, R., Hawkes, B. van Akker, L. 2018. Forest response and recovery following mountain pine beetle outbreaks in Waterton Lakes National Park, Alberta, Canada. Association of American Geographers Annual Meeting, April 10-14, New Orleans LA.

Axelson, J., Maclauchlan, L. 2016. Advancing forest health science, policy and management in a changing world: A British Columbia perspective. North American Forest Insect Work Conference, May 31-June 1, Washington, D.C.

Axelson, J., Smith, D., Alfaro, R., Gärtner, H. 2016. Wood anatomical plasticity in Douglas-fir to sustained a western spruce budworm outbreak and moisture deficits, British Columbia, Canada. AmeriDendro, March 28-April 1, Mendoza, AR.

Axelson, J., Smith, D., Alfaro, R., Gärtner, H. 2015. Impacts of western spruce budworm outbreaks on the wood density properties and anatomical structure of Douglas-fir in the interior of British Columbia, Canada. Association of American Geographers Annual Meeting, April 21-25, Chicago, IL.

Axelson, J., Gärtner, H., Alfaro, R., Smith, D. 2013. Exploring the effects of western spruce budworm outbreaks on the wood anatomy of Douglas-fir. AmeriDendro. May 13-17, Tucson, AZ.

Axelson, J., Gärtner, H., Alfaro, R., Smith, D. 2013. Wood anatomy and insect defoliator systems: Is there an anatomical response to sustained feeding by the western spruce budworm (*Choristoneura occidentalis*) on Douglas-fir (*Pseudotsuga menziesii*)? European Geophysical Union. April 7-12, Vienna, AT.

Axelson, J., Smith, D. 2011. Multi-century reconstructions of western spruce budworm outbreaks and climatic variability in the Cariboo-Chilcotin Region. Canadian Association of Geographers. May 31-April 4, Calgary, AB.

Axelson, J., Alfaro, R., Hawkes, B. 2011. Relationships between climate, forest disturbance and tree-ring variability of lodgepole pine on the eastern slopes of the Rocky Mountains, Alberta. American Association of Geographers. April 12-16, Seattle, WA.

Axelson, J., Alfaro, R., Hawkes, B., van Akker, L. 2009. Stand dynamics of lodgepole pine forests following multiple mountain pine beetle outbreaks on the Chilcotin Plateau, BC, Canada. American Association of Geographers. March 22-27, Las Vegas, NV.

Axelson, J., Alfaro, R., Hawkes, B. 2008. What stand reconstructions can tell us about the stand dynamics following mountain pine beetle outbreaks in south-central British Columbia, Canada. AmeriDendro. June 23-27, Vancouver, BC.

Axelson, J., Alfaro, R., Hawkes, B. 2008. Stand dynamics following mountain pine beetle outbreaks in British Columbia, Canada. American Association of Geographers. April 14-19, Boston, MA.

Axelson, J., Alfaro, R., Hawkes, B., Shore, T. 2007. Stand dynamics following mountain pine beetle outbreaks in central British Columbia. North American Forest Ecology Workshop. June 18-20, Vancouver, BC.

Axelson, J., Sauchyn, D. 2006. Historical streamflow in the South Saskatchewan River Basin inferred from tree-rings. Canadian Water Resources Association. June 4-7, Toronto ON.

EXTENSION & OUTREACH

Webinars

Forest Health, Tree Decline and Forest Insects. [UC ANR Invasive Species Lunchtime Talks](#)

Bark Beetle Outbreaks in Western North America: Causes, Control and Consequences. [Utah State University Extension Forestry](#) and <https://learn.extension.org/events/3144>

Media Interviews

[County program to cull dead trees continues](#). Union Democrat, April 5 2018, Alex Maclean.

[With California Drought Over, Fewer Sierra Pines Dying](#). KQED Science, October 24 2017, Gabriela Quirós.

[California: Why tiny insects are tearing up Sierra forests](#). The Mercury News, December 14 2016, Ula Chrobak.

[Coping While Looking Beyond Tree Mortality Disaster](#). myMotherLode.com, October 10 2016, Tori James and Sabrina Biehl.

[Bark beetles ravage forests of Tuolumne County](#). Modesto Bee, October 10 2016, John Holland.

Workshops & Technical Transfer

[Tree Mortality Data Collection Network](#) (*Organizer & Moderator*). March 12 2018, Sacramento, CA.

Reforestation Expert Station #1 (*Moderator*), [Reforestation: Landowner guidance, education and outreach](#) (*Presenter*). Science to Management Symposium: Lessons Learned from Extreme

Drought and Tree Mortality in the Sierra Nevada. USDA Climate Hub, August 25 2017, Sacramento CA.

[California's Tree Mortality: Lessons Learned from Past Bark Beetle Outbreaks](#). Tree Mortality Task Force, September 11 2017, Governor's Chambers, Sacramento, CA.

[Forest Mortality and Regeneration: Life After Beetle](#). University of California Master Gardener Training. June 6 2017, Pollock Pines CA; June 14 2017, Sonora CA.

[Life after Beetle: Stand Dynamics Post-Outbreak\(s\)](#). Governor's Tree Mortality Task Force – Forest Health and Resilience Working Group. May 3 2017, Sacramento CA.

Managing for Resilience: Forest Health, Fire and Insect Disturbances. Forest Landowners of California Annual Meeting. April 28 2017, Sonora CA.

Bark Beetle Outbreaks: Causes, Consequences, and Controls. Pesticide Safety Education Seminar, Counties of Inyo and Mono. March 23 2017, Bishop CA.

[Forest Mortality and Regeneration: Life after Death](#). CalFire Reforestation Workshops for Landowners. February 11 2017, Auberry CA. February 25 2017, Cold Springs Ranchiera CA; March 27 2017, Oakhurst CA; May 31 2017, Jackson CA.

Tree mortality from mountain peaks to city parks: A discussion. Bay Area Landscape Supervisors Forum. November 4 2016, Hayward CA.

[Bark beetles - biology and control](#). Yosemite Stanisluas Solutions and TuCare Tree Mortality Field Tour. October 6-7 2016, Sonora CA.

PROFESSIONAL SERVICE & TRAINING

Ongoing	Manuscript reviewer for: Canadian Journal of Forest Research, Dendrochronologia, Forests, New Phytologist, Tree Physiology
2018-20	Vice President, Tree-Ring Society
2018 -	Scientific Advisory Board, Association for Tree-Ring Research
2018-	Faculty Advisor, Forestry Club, University of California Berkeley
2017-	Insect Committee Chair, California Forest Pest Council
2017	Unmanned Aerial Systems and Federal Aviation Safety Training. University of Merced. March 10 2017, Merced CA
2017-18	Tree Mortality Task Force, Forest Health and Resilience Working Group, California
2017	Quantitative Wood Anatomy course. Laboratory of Tree-Ring Research, University of Arizona. March 13-17 2017, Tucson AZ
2011	Participant, 12 th International Winter School: Wood Anatomy of Tree Rings, November 23-29 2012, Klosters, Switzerland

MEMBERSHIPS

- American Association of Geographers
- Entomological Society of Canada
- Society of American Foresters
- Tree-Ring Society