

Xanthe Walker
tel: (928) 637 5642
email: xanthe.walker@gmail.com

Education

Ph.D., Department of Biology, University of Saskatchewan, Saskatoon, SK, May 2015

- Thesis topic: Tree ring responses to climate: drought stress signals decreased resilience of northern boreal forests to disturbance from fire.
- Supervisor: Dr. Jill Johnstone

M.Sc., Department of Geography, University of British Columbia, Vancouver, BC, 2011

- Thesis topic: The reproduction, establishment, and growth of white spruce throughout the forest-tundra ecotone in the NWT, Canada.
- Supervisor: Dr. Gregory Henry

B.Sc. High Honours, Department of Biology, University of Saskatchewan, Saskatoon, SK, 2008

- Thesis topic: Post-fire seed rain of black spruce in forests of interior Alaska.
- Supervisor: Dr. Jill Johnstone

Professional Work Experience

Post-doctoral Research Fellow (May 2015-present)

Center for Ecosystem Science and Society, Northern Arizona University, Flagstaff, Arizona, USA

- Supervisor: Dr. Michelle Mack.

Research Technician and Administrator (2010)

Department of Geography, University of British Columbia, Vancouver, BC

- Full-time laboratory research assistant in the Tundra Ecology Lab, UBC
- Administrator for Climate Change Impacts on the Canadian Arctic Tundra (CiCAT) and the International Tundra Experiment (ITEX)

Laboratory Assistant (2007 – 2008)

College of Agriculture, University of Saskatchewan, Saskatoon, SK

- Part-time assistant at the W.P. Fraser Herbarium

Research Assistant (2007)

Department of Biology, University of Saskatchewan, Saskatoon, SK

- Full-time summer laboratory student in Dr. Kaminskyj's research lab

Teaching and Supervisory Experience

Courses Taught

- Biology 373: Community Ecology (UofS – 2012)

Teaching Assistant Positions

- Geography 307: Biogeography and Global Change (UBC – 2010)
- Geography 102: Introduction to Physical Geography (UBC – 2010)
- Biology 121: The Diversity of Life (UofS – 2008)
- Biology 205: Survey of Land Plants (UofS – 2008)
- Biology 204: Survey of Bacteria, Algae, and Fungi (UofS – 2007)

Undergraduate Students Co-supervised

- Michael Pisano (2017); Assessing secondary growth of Siberian larch (*larix sibirica*) in northeast Siberia
- Nicolas Boldt (2013); Productivity and growth rate differences between black spruce trees based on its co-dominance with paper birch and trembling aspen.
- Scott Dudiak (2012); Evaluating the variation between basal and breast height ring-widths of black spruce trees from interior Alaska

- Sarah-Anne Armstrong (2012); Climate growth response in jack pine across a spatial gradient in groundwater availability at the southern range limit of the boreal forest in Saskatchewan.

Publications

Peer-reviewed publications:

- Walker, X, Baltzer, J. L., Cumming, S. R., Day, N. J., Johnstone, J., Rogers, B. M., Solvik, K., Turetsky, M. R., & Mack, M. C. (accepted November 2017) Soil organic layer combustion in boreal black spruce and jack pine stands of the Northwest Territories, Canada. *International Journal of Wildland Fire*.
- Walker X, Frey MD, Conway AC, Jean M, Johnstone JF, 2017 "Impacts of fire on non-native plant recruitment in black spruce forests of interior Alaska". PLoS ONE 12(2): e0171599. <https://doi.org/10.1371/journal.pone.0171599>
- Walker X, Johnstone JF, Mack MC, 2016 "Predicting ecosystem resilience to fire from tree ring analysis in black spruce forests" *Ecosystems*, DOI:10.1007/s10021-016-0097-5
- Walker X, Mack M, Johnstone JF, 2015 "Stable carbon isotope analysis reveals widespread drought stress in boreal black spruce forests" *Global Change Biology*, DOI: 0.1111/gcb.12893
- Walker X, Johnstone JF, 2014 "Widespread negative correlations between black spruce growth and temperature across topographic moisture gradients in the boreal forest" *Environmental Research Letters* 9:064016
- Walker X, Henry GHG, McLeod K, Hofgaard A, 2012 "Reproduction and seedling establishment of *Picea glauca* across the northernmost forest-tundra region in Canada" *Global Change Biology* 18(10): 3202-3211.
- Elmendorf S, et al. 2012 "Plot-scale evidence of tundra vegetation change and links to recent summer warming" *Nature Climate Change* 2: 453-457.
- Walker X, Basinger J, Kaminskyj S, 2010 "Endorhizal fungi associated with *Ranunculus* in the Canadian Arctic and Prairies: Predominance of Fine Endophytes at High Latitudes" *The Open Mycology Journal* 4: 1-9.
- Johnstone JF, Boby L, Tissier E, Mack M, Verbyla D, Walker X, 2009 "Post-fire seed rain of black spruce, a semi-serotinous conifer, in forest of interior Alaska" *Canadian Journal of Forest Research* 39(8):1575-1588.

Presentations

Oral Presentations at Conferences:

- Walker, X., Baltzer, J., Cumming, S., Day, N., Geotz, S., Johnstone, J., Rogers, B., Turetsky, M., & Mack, M. 2016 "Fire severity and carbon combustion in boreal ecosystems" American Geophysical Union Fall Meeting, San Francisco, California, USA.
- Walker, X., Mack, M., Johnstone, J., 2015 "Can tree ring analysis predict resilience of black spruce forests to fire in Interior Alaska?" American Geophysical Union Fall Meeting, San Francisco, California, USA.
- Walker, X., Johnstone, J., Mack, M. 2013 "Regional variability of black spruce climate growth responses in interior Alaska" 16th annual International Boreal Forest Research Association Conference, Edmonton, Alberta, Canada.
- Walker, X., Johnstone, J. 2013 "Regional variability in climate growth responses of northern black spruce forests" 8th annual Canadian Society for Ecology and Evolution Meeting, Kelowna, British Columbia, Canada
- Walker, X., Johnstone, J. 2012 "Dendroclimatic responses in northern black spruce forests" 3rd annual CONFORWest conference, Canmore, Alberta, Canada.

- Walker, X., Henry, G. 2010 “The reproduction, establishment, and growth of white spruce in the forest tundra ecotone of the Inuvik-Tuktoyaktuk region, Canada” 7th annual ArcticNet Scientific Meeting, Ottawa, Ontario, Canada.
- Walker, X., Henry, G. 2010 “The reproduction, establishment, and growth of white spruce at its northern range limit, Canada” IPY Meeting, Edmonton, Alberta, Canada.
- Walker, X., Henry, G. 2009 “The dynamics of white spruce at its northern range limit, Canada” 9th annual ACUNS conference, Whitehorse, Yukon, Canada.

Poster Presentations at Conferences:

- Walker, X., Johnstone, J. 2014 “Radial growth and $\Delta^{13}\text{C}$ responses of black spruce to climate” Ecological Society of America Conference, Sacramento, California, USA.
- Walker, X., Henry, G., McLeod, K., Hofgaard, A. 2012 “Growth and reproduction of white spruce at its northern limit in Canada” IPY conference, Montreal, Quebec, Canada.
- Walker, X., Johnstone, J. 2011 “Assessing climate-growth relationships and resilience in black spruce forests: proposed research” BNZ-LTER Symposium, Fairbanks, Alaska, USA.
- Walker, X., Henry, G. 2010 “The reproduction, establishment, and growth of white spruce at its northern range limit, Canada” 5th annual Canadian Society for Ecology and Evolution Meeting, Quebec City, Quebec, Canada.
- Walker, X., Henry, G. 2009 “The dynamics of white spruce at its northern range limit, Canada” 6th annual ArcticNet Scientific Meeting, Victoria, British Columbia, Canada.

Grants and Awards

- Alexander Graham Bell Canada Graduate Scholarship, 2012-2015 (\$35,000/year)
- University of Saskatchewan Arts & Science Graduate Catalyst Award, 2015 (\$3500)
- Taylor A. Steeves Graduate Award in Botany, 2014 (\$1000)
- Teacher-Scholar Doctoral Fellowship, 2011-2012 (\$18,000)
- Northern Scientific Training Program, 2012 (\$3,000)
- IPY Montreal Conference, Outstanding Poster Award, 2012 (\$400)
- Northern Scientific Training Program, 2011 (\$2,600)
- Jared Stanley Memorial Prize for M.Sc. thesis, 2011 (\$250)
- Northern Scientific Training Program, 2009 (\$4,000)
- Northern Scientific Training Program, 2008 (\$3,100)
- University of Saskatchewan Undergraduate Scholarship, 2008 (\$1,500)
- Undergraduate Student Research Award, 2007 (\$4,500)

Additional Certifications

- School of Environment and Sustainability Professional Skills Certificate (2015)
- Wilderness First Aid (2011)
- Supervisor Safety Training, University of Saskatchewan (2011)
- Laboratory Safety, University of Saskatchewan (2011)
- Canadian Firearm Safety Course (2009)
- Work Safe, BC Occupational First Aid Level 1 (2009)
- Bio-safety, University of Saskatchewan (2007)

Professional Activities and Service

- Reviewer for Biogeosciences, Ecosystems, Global Change Biology, Global Ecology and Biogeography, Forest Ecology and Management, University of Saskatchewan Undergraduate Research Journal
- Organizing committee member for the Symposium for Women Entering Ecology and Evolution Today (SWEET) at the annual Canadian Society for Ecology and Evolution Conference (2015)

- Volunteer Coordinator for BIOSCAN Science Fair, University of Saskatchewan (2008, 2012)