Brad Pinno

Assistant Professor – Silviculture
University of Alberta, Department of Renewable Resources
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Academic Background:

Doctor of Philosophy (2008)
University of Saskatchewan, Department of Soil Science
Thesis: Site productivity of poplars in Canada: Relationships with soil properties and competition intensity

Master of Science in Forest Biology and Management (2000)
University of Alberta, Department of Renewable Resources
Thesis: Crown characteristics and understory light in young trembling aspen stands

Bachelor of Science in Forestry with Distinction (1998)
University of Alberta, Department of Renewable Resources
Major in Forest Management

Work and Research Experience:

Assistant Professor – Silviculture (2018 – Present)
University of Alberta, Department of Renewable Resources

Research Scientist – Forest Ecology and Reclamation (2011 - 2017)
Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre

> **Adjunct Professor** (2015 - Present)
> Université Laval, Faculté de foresterie, de géographie et de géomatique
>
> **Adjunct Professor** (2011-2017)
> University of Alberta, Department of Renewable Resources

Post-Doctoral Researcher (2010-2011)
University of Alberta, Deparment of Renewable Resources
Research: Silviculture and forest land reclamation

Post-Doctoral Researcher (2008-2010)
Univeristy of Regina, Department of Biology
Research: Plant ecology focusing on belowground processes

Forest Technician Program Instructor (2004-2005)
Northern Lakes College (Grouard, Alberta)

Area Forester (2003-2004)
Alberta Sustainable Resource Development (High Prairie, Alberta)

Regional Forester (2000-2003)
Saskatchewan Environment (La Ronge, Saskatchewan)

Publications:

33. **Pinno, B.D.**, Schoonmaker, A., Yücel, C.K., and Albricht, R. 2017. Cluster planting: Early enhancement of structural diversity in a reclaimed boreal forest. Journal of the American Society of Mining and Reclamation. 6:37-50.

32. Dabros, A., Hammond, H.E.J., Pinzon, J., **Pinno, B.D.** and Langor, D. 2017. Edge influence of low-impact seismic lines for oil exploration on upland forest vegetation in northern Alberta (Canada). Forest Ecology and Management. 400:278-288.

31. **Pinno, B.D.**, Li, E.H.Y., Khadka, B. and Schoonmaker, A. 2017. Germination and early growth of boreal understory plants on different reclamation soils under simulated drought conditions. Native Plants Journal.18:92-104.

30. Bockstette, S., Landhäusser, S.M., **Pinno, B.D.** and Dyck, M. 2017. Grass roots, not soil compaction, restrict access to soil resources for trees on reclaimed mine soil. Botany. 95: 685-695

29. Howell, D.M., Das Gupta, S., **Pinno, B.D.** and MacKenzie, M.D. 2017. Reclaimed soils, fertilizer, and bioavailable nutrients: Determining similarity with natural benchmarks over time. Canadian Journal of Soil Science. 97:149-158.

28. **Pinno, B.D**., Sherr, I., Errington, R.C., and Shea, K. 2016. Islands – soil patches and plant community dynamics on a new oil sands reclamation design. Journal of the American Society of Mining and Reclamation. 5:28-44.

27. **Pinno, B.D.** and Errington, R.C. 2016. Burn severity dominates understory plant community response to fire in xeric jack pine forests. Forests.7:83. doi:10.3390/f7040083

26. Errington, R.C. and **Pinno, B.D.** 2016. Early successional plant community dynamics on a reclaimed oil sands mine in comparison with natural boreal forest communities. Écoscience. 22:133-144.

25. Schott, K.M., Snively, A.E.K., Landhausser, S.M. and **Pinno, B.D.** 2016. Nutrient loaded seedlings reduce the need for fertilization and vegetation management on boreal forest reclamation sites. New Forests. 47:393-410.

24. **Pinno, B.D.** and Hawkes, V.C. 2015. Temporal trends of ecosystem development on different site types in reclaimed boreal forests. Forests. 6:2109-2124.

23. Audet, P., **Pinno, B.D.** and Thiffault, E. 2015. Reclamation of boreal forest after oil sands mining: Anticipating novel challenges in novel environments. Canadian Journal of Forest Research. 45:363-370.

22. **Pinno, B.D.** and Errington, R.C. 2015. Maximizing natural trembling aspen seedling establishment on a reclaimed boreal oil sands site. Ecological Restoration. 33:43-50.

21. **Pinno, B.D.** and Wilson, S.D. 2014. Nitrogen translocation between clonal mother and daughter trees at a grassland-forest boundary. Plant Ecology. 215:347-354.

20. Rogers, P.C., Landhäusser, S.M., **Pinno, B.D.** and Ryel, R.J. 2014. Functional classification for improved management of western North American aspen (*Populus tremuloides* Michx.). Forest Science. 60:345-359.

19. **Pinno, B.D.**, Landhäusser, S.M., Chow, P.S., Quideau, S.A. and MacKenzie, M.D. 2014. Nutrient uptake and growth of fireweed (*Chamerion angustifolium*) on reclamation soils. Canadian Journal of Forest Research. 44:1-7.

18. Balogianni, V.G., Wilson, S.D., Vaness, B.M., MacDougall, A.S. and **Pinno, B.D.** 2014. Different root and shoot responses to mowing and fertility in native and invaded grassland. Rangeland Ecology and Management.67:39-45.

17. **Pinno, B.D.**, Errington, R.C and Thompson, D.K. 2013. Young jack pine and high severity fire combine to create potentially expansive areas of understocked forest. Forest Ecology and Management. 310:517-522.

16. Schott, K.M, **Pinno, B.D.** and Landhäusser, S.M. 2013. Premature shoot growth termination allows nutrient loading of seedlings with indeterminate growth strategy. New Forests. 44:635-647.

15. **Pinno, B.D.** and Wilson, S.D. 2013. Fine root response to soil resource heterogeneity differs between grassland and forest. Plant Ecology. 214:821-829.

14. Wilson, S.D. and **Pinno, B.D.** 2013. Environmentally-contingent behaviour of grassland plants as drivers or passengers. Oikos. 122:129-135.

13. **Pinno, B.D.**, Lieffers, V.J. and Landhäusser, S.M. 2012. Inconsistent growth response to fertilization and thinning in lodgepole pine in the Rocky Mountain foothills is linked site index. International Journal of Forestry Research. 2012:193975.

12. Landhäusser, S.M, **Pinno, B.D.**, Lieffers, V.J. and Chow, P.S. 2012. Partitioning of carbon allocation to reserves or growth determines future performance of aspen seedlings. Forest Ecology and Management. 275:43-51.

11. **Pinno, B.D.**, Landhäusser, S.M., Mackenzie, M.D., Quideau, S.A. and Chow, P.S. 2012. Trembling aspen seedling establishment, growth, and response to fertilization on contrasting soils used in oil sands reclamation. Canadian Journal of Soil Science. 92:143-151.

10. **Pinno, B.D.** and Bélanger, N. 2011. Estimating trembling aspen productivity in the boreal transition ecoregion of Saskatchewan using site and soil variables. Canadian Journal of Soil Science. 91:661-669.

9. **Pinno, B.D.** and Wilson, S.D. 2011. Ecosystem carbon changes with woody encroachment of grassland in the northern Great Plains. Écoscience. 18:157-164.

8. **Pinno, B.D.**, Wilson, S.D., Steinaker, D., Van Rees, K.C.J. and McDonald, S.A. 2010. Fine root dynamics of trembling aspen in boreal forest and aspen parkland in central Canada. Annals of Forest Science. 67:710.

7. **Pinno, B.D.**, Thomas, B. and Bélanger, N. 2010. Predicting the productivity of a young hybrid poplar clone under intensive plantation management in northern Alberta, Canada using soil and site characteristics. New Forests. 39:89-103.

6. **Pinno, B.D.**, Paré, D., Guindon, L. and Bélanger, N. 2009. Predicting productivity of trembling aspen in the Boreal Shield ecozone of Quebec with different sources of soil and site information. Forest Ecology and Management. 257:782-789.

5. **Pinno, B.D.** and Bélanger, N. 2009. Competition control in juvenile hybrid poplar plantations across a range of site productivities in central Saskatchewan. New Forests. 37:213-225.

4. Bélanger, N. and **Pinno, B.D.** 2008. Carbon sequestration, vegetation dynamics and soil development in the boreal transition ecoregion of Saskatchewan during the Holocene. Catena. 74:65-72.

3. **Pinno, B.D.** and Bélanger, N. 2008. Ecosystem carbon gains from afforestation in the boreal transition ecozone of Saskatchewan (Canada) are coupled with the devolution of black chernozems. Agriculture, Ecosystems and Environment. 123:56-62.

2. Lieffers, V.J., **Pinno, B.D.** and Stadt, K.J. 2002. Light dynamics and free-to-grow standards in aspen dominated mixedwood forests. Forestry Chronicle. 78:137-145.

1. **Pinno, B.D.**, Lieffers, V.J. and Stadt, K.J. 2001. Measuring and modelling the crown and light transmission characteristics of juvenile aspen. Canadian Journal of Forest Research. 31:1930-1939.

Presentations at Scientific Conferences (past 3 years, lead author only):

Pinno, B.D. et al. 2017. Impacts of non-native plants in oil sands mine reclamation. NAIT Upland Reclamation Symposium. Invited oral presentation. November 2017. Edmonton, AB.

Pinno, B.D. and Das Gupta, S. 2017. Coarse woody debris in mineable oil sands land reclamation. Soil Science Society of America Conference. Oral presentation. October 2017. Tampa, FL, USA.

Pinno, B.D. and Das Gupta, S. 2017. Coarse woody debris applications in oil sands reclamation impact plant community and soil properties. North American Forest Ecology Workshop. Invited oral presentation. June 2017. Edmonton, AB.

Pinno, B.D., Sherr, I., Errington, R., and Shea, K. 2017. Reclamation islands – utilizing limited cover soils in oil sands mine reclamation. Mine Design, Operations, and Closure Conference. Invited oral presentation. May 2017. Butte, MT, USA.

Pinno, B.D., Leishman, F., Errington, R.C., Merlin, M., and Landhäusser, S.M. 2017. Upland forest development in a reconstructed watershed after oil sands mining in northern Alberta, Canada. American Society of Mining and Reclamation. Oral presentation. April 2017. Morgantown, WV, USA.

Pinno, B.D., Sherr, I., Errington, R.C., and Shea, K. 2017. Islands – plant community dynamics on a new integrated cover soil design. COSIA Innovation Summit. Invited oral presentation. March 2017. Calgary, AB.

Pinno, B., Howell, M., Das Gupta, S. and Mackenzie, D. Similarity in nutrient profiles of reclaimed and natural benchmark soils in the Alberta oil sands. Soil Science Society of America Conference. Oral presentation. November 2016. Phoenix, AZ.

Pinno, B.D., Sherr, I., Errington, R.C., and Shea, K**.** 2016. Islands – plant community dynamics on a new reclamation design. American Society of Mining and Reclamation 2016 Conference. Oral presentation. June 2016. Spokane, Washington.

Pinno, B.D. and Errington, R.C. 2015. Initial plant community composition after wildfire is determined by fire severity and pre-fire stand age in the boreal forest of Alberta, Canada. Oral presentation at the North American Forest Ecology Workshop. June 2015, Veracruz, Mexico.

Technology Transfer Presentations and Publications:

Pinno, B.D. et al. 2013, 2014, 2015, 2016, 2017. Annual reclamation research update. Presentations and annual reports to CNRL Land Reclamation team.

Utting, N., Elias, J. and **Pinno, B.** 2017. Geoenvironmental and geotechnical properties of treated oil sand tailings and reqirements for boreal landscape reclamation. Natural Resources Canada Report CDEV-2017-0020-RT.

Leishman, F., Errington, R. Merlin, M., Landhäusser, S. and **Pinno, B.** 2013, 2014, 2015 and 2016. Syncrude Sandhill Fen Tree establishment data. Annual research presentation and report to Syncrude.

Howell, D.M. and **Pinno, B.D.** 2015. Initial forest soil risk rating map for biomass removal in Alberta. Submitted as a deliverable for the "Biomass availability and

characterization for RNG demonstration project" funded by the Forest Innovation Program.

Huang, S., **Pinno, B.**, Vassov, R., Tomm, B. and Yang, Y. 2014. Estimating and monitoring the long-term growth and productivity of boreal forests on reclaimed oil sands sites: preliminary results and future outlook. Oral presentation and symposium publication from the American Statistical Association annual meeting. August, 2014, Boston, Massachusetts.In *JSM Proceedings*, Advances in Ecological Modeling, Section on Statistics and the Environment. Alexandria, VA: American Statistical Association, pp.3902-3916.

Pinno, B.D., Pyper, M., Landhäusser, S.M. and Li, E. 2014. A review of trembling aspen seedling ecology and management. 44 pp. Report submitted to CFS Land Reclamation Project.

Lieffers, V.J., **Pinno, B.D.** and Stadt, K.J. 2002. Are Alberta's free-to-grow standards a good measure of future competition? Centre for Enhanced Forest Management. EFM Research Note 01/2002.