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ACADEMIC POSITIONS HELD

Professor (Forest Ecology), Department of Renewable Resources, University of Alberta. (1999-present)
Associate Professor (Forest Ecology), Department of Renewable Resources, University of Alberta. (1994-1999)
Assistant Professor (Forest Ecology), Department of Forest Science, University of Alberta. (1989-1994)
Postdoctoral Fellow (Forest Ecology). Department of Forest Science, University of Alberta. (1988-1989)

Academic Administration appointments:

Chair, Department of Renewable Resources, Faculty of Agricultural, Life & Environmental Sciences, University of Alberta (2016 - 2021)
Associate Dean (Research & Graduate Studies), Faculty of Agricultural, Life & Environmental Sciences, University of Alberta (2009 – 2012)
Associate Dean, Faculty of Graduate Studies and Research, University of Alberta. (2001 – 2004)
Associate Chair (Planning & Priorities), Department of Renewable Resources, University of Alberta (1999 - 2001).

Sabbatical positions:

Visiting Scientist, département des sciences appliquées, Université du Québec en Abitibi-Témiscamingue. (August 2004 – June 2005).
Visiting Scientist, Department of Biology, McGill University. (January – June 1996)

EDUCATION

1983 B.Sc. (with distinction) Environmental Biology, University of Calgary
1988 Ph.D. Plant Ecology, University of Calgary.

AWARDS

University Cup, University of Alberta (2020)
International Union of Forest Research Organizations, Scientific Achievement Award (2019)
Ed and Peggy Tychniewicz Award for Innovation in Teaching; Faculty of Agricultural, Life & Environmental Science. (2015)
Canadian Institute of Forestry - Scientific Achievement Award (2014)
Izaak Walton Killam Annual Professor, University of Alberta, 2007 – 2008
Teacher of the Year: Faculty of Agricultural, Life & Environmental Sciences (2004, 2008, 2009, 2010)
Award for Excellence in Graduate Student Mentoring, Dept. of Renewable Resources, University of Alberta (1999)
NSERC Postdoctoral Fellowship (1989)
NSERC Forestry Postdoctoral Assistantship (1988-1989)
Ralph Steinhauer Award of Distinction (for PhD, 1986-1988)
Izaak Walton Killam Memorial Scholarship (for PhD, 1985-1987)
NSERC Graduate Scholarship (for PhD, 1983-1986)

RESEARCH INTERESTS

1. Patterns of diversity and composition in northern plant communities
2. Responses of northern plant communities to disturbance (natural and anthropogenic)

3. Effects of forest management practices on understory plant communities
4. Regeneration and dynamics of boreal forests after disturbance (natural and anthropogenic)
5. Restoration of boreal forests after industrial disturbance

PUBLICATIONS

Google Scholar h-index = 52, i10-index = 136.

Articles in Refereed Scientific Journals: (supervised students and postdocs are in **bold**, other HQP are underlined)

1. Harper, K.A., L. Gray, S.E. Macdonald, D. Lesiur, D. DeFields, P. Dodonov, C.M.A. Franklin, S. R. Haughian, L. Mascarúa López, A. Heathcote, K. Jager, R. Yang, C. Angelidis, A. Lanza Braga, W. Butler, S. Coley, J.M.E. Kornelson, L. Murphy, J. Pelton, E. Viotto Recco, R. de Oliveira Xavier, I. Wilson, M.C. Ribeiro, D. Maria da Silva Matos, Y. Bergeron. 2023. Data on vegetation across forest edges from the FERN (Forest Edge Research Network). *Ecology* doi.org/10.1002/ecy.4098
2. Zhang, W.-Q., Fleurial, K., Moawad, M., Vassov, R., Macdonald, S.E., Zwiazek, J.J. 2023. Growth responses of 20 boreal forest species to oil sands non-segregating tailings: significance for reclamation. *Restoration Ecology* doi.org/10.1111/rec.13874
3. **Bartels, S.F.**, S.E. Macdonald. 2023. Dynamics and recovery of forest understory biodiversity over 17 years following varying levels of retention harvesting. *Journal of Applied Ecology* 60: 725-736. doi.org/10.1111/1365-2664.14366
4. **Echiverri, L.F.I.**, S.E. Macdonald, S.E. Nielsen. 2023. Mounding treatments set back bryophyte recovery on linear disturbances in treed peatlands. *Restoration Ecology* 31(3): e13813 doi.org/10.1111/rec.13813
5. Hesketh, A.V., Loesberg, J.A., Bledsoe, E.K., Karst, J., Macdonald, S.E. 2022. Seasonal and annual dynamics of western Canadian boreal forest plant communities: a legacy dataset spanning four decades. (Data paper). *Ecology* 103(11): e3805 doi.org/10.1002/ecy.3805
6. **Errington, R.C.**, S.E. Macdonald, N.A. Melnycky, J.S. Bhatti. 2022. Estimating lichen biomass in forests and peatlands of northwestern Canada under a changing climate. *Arctic, Antarctic, and Alpine Research* 54: 221-238. doi.org/10.1080/15230430.2022.2082263
7. Cardou, F., A. Munson, L. Boisvert-Marsh, M. Anand, A. Arsenault, W. Bell, Y. Bergeron, I. Boulangeat, S. Delagrangé, N. Fenton, D. Gravel, B. Hamel, F. Hébert, J. Johnstone, B. Kumordzi, S.E. Macdonald, A. Mallik, A. McIntosh, J. McLaren, C. Messier, D. Morris, J.W. Shipley, L. Sirois, N. Thiffault, I. Aubin. 2022. Above- and belowground drivers of intraspecific trait variability across subcontinental gradients for five ubiquitous forest plants in North America. *Journal of Ecology* 110: 1590-1605. doi: 10.1111/1365-2745.13894
8. **Echiverri, L.F.I.**, S.E. Macdonald, S.E. Nielsen. 2022. Neighboring edges: interacting edge effects from linear disturbances in treed fens. *Applied Vegetation Science* doi.org/10.1111/avsc.12645
9. Dokis-Jansen, K.L., B.L. Parlee, Łutsël K'e Dene First Nation, D.S. Hik, B. **Gendreau-Berthiaume**, S.E. Macdonald, C. Stinn. 2021. "These trees have stories to tell": Linking Denésgliné oral history of caribou use with trample scar frequency on black spruce roots at ?Eda Cho Kué. *Arctic* 74(3): 290-305. doi.org/10.14430/arctic73160
10. Kuuluvainen, T., P. Angelstam, L. Frelich, K. Jogiste, M. Koivula, Y. Kubota, B. Lafleur, S. E. Macdonald. 2021. Natural disturbance-based forest management: moving beyond retention and continuous-cover forestry. *Frontiers in Forests and Global Change* doi: 10.3389/ffgc.2021.629020
11. **Robinne, F.-N.**, J.J. Stadt, C.W. Bator, C. Nock, S.E. Macdonald, S.E. Nielsen. 2020. Application of the conservation planning tool Zonation to inform retention planning in the boreal forest of Western Canada. *Frontiers in Ecology and Evolution* 8:584291 doi: 10.3389/fevo.2020.584291
12. Thorn, S., A. Chao, K.B. Georgiev, J. Müller, C. Bässler, J.L. Campbell, J. Castro, Y.-H., Chen, C.-Y. Choi, T. Cobb, D.C. Donato, E. Durska, E. Macdonald, H. Feldhaar, J.B. Fontaine, P.J. Fornwalt, R.M.H. Hernández, R.L. Hutto, M. Koivula, E.-J. Lee, D. Lindenmayer, G. Mikusiński, M.K. Obrist, M. Perlik, J. Rost, K. Waldron, B. Wermelinger, I. Weiß, M. Žmihorski, A.B. Leverkus. 2020. Estimating retention benchmarks for salvage logging to protect biodiversity. *Nature Communications* 11, 4762. doi.org/10.1038/s41467-020-18612-4

13. **Steinke, J., A.C.S. McIntosh, L. Schroeder, S.E. Macdonald.** 2020. Understory vegetation responses to simulated mountain pine beetle attack and salvage logging in grey attack stage lodgepole pine stands. *Forest Ecology & Management* 474: article 118373 doi.org/10.1016/j.foreco.2020.118373
14. **Echiverri, L., S.E. Macdonald.** 2020. A topographic moisture index explains understory vegetation response to retention harvesting. *Forest Ecology & Management* 474: article 118358 doi.org/10.1016/j.foreco.2020.118358
15. **Echiverri, L., S.E. Macdonald, S.E. Nielsen.** 2020. Disturbing to restore? Effects of mounding on understory communities on linear disturbances in treed peatlands. *Canadian Journal of Forest Research* 50: 1340–1351. doi.org/10.1139/cjfr-2020-0092
16. **MacDonald, A., S.F. Bartels, S.E. Macdonald, K.E. Pigeon, D. MacNearney, L. Finnegan.** 2020. Wildlife forage cover and composition on pipeline corridors in Alberta: implications for wildlife conservation. *Forest Ecology & Management* 468: doi.org/10.1016/j.foreco.2020.118189
17. **Sewell, P.D., S.A. Quideau, M. Dyck, S.E. Macdonald.** 2020. Long-term effects of harvest on boreal forest soils in relation to a remote sensing-based soil moisture index. *Forest Ecology & Management* 462: doi.org/10.1016/j.foreco.2020.117986
18. **Xing, D., J.A.C. Bergeron, K. Solarik, B. Tamm, S.E. Macdonald, J.R. Spence, F. He.** 2019. Challenges in estimating forest biomass: use of allometric equations for three boreal species. *Canadian Journal of Forest Research* 49: 1613-1622, doi.org/10.1139/cjfr-2019-0258
19. **Bartels, S., B. Gendreau-Berthiaume, S.E. Macdonald.** 2019. The impact of atmospheric acid deposition on tree growth and forest understory vegetation in the Athabasca oil sands region. *Science of the Total Environment* doi.org/10.1016/j.scitotenv.2019.133877
20. **Kumordzi, B., I. Aubin, F. Cardou, B. Shipley, C. Violle, J. Johnstone, M. Anand, A. Arsenault, W. Bell, Y. Bergeron, I. Boulangeat, M. Brousseau, L. de Grandpré, S. Delagrangé, N. Fenton, D. Gravel, S.E. Macdonald, B. Hamel, M. Higelin, F. Hebert, N. Isabel, A. Mallik, A. McIntosh, J. McLaren, C. Messier, D. Morris, N. Thiffault, J.-P. Tremblay, A. Munson.** 2019. Geographic scale and disturbance influence intraspecific trait variability in leaves and roots of North American understory plants. *Functional Ecology* 33: 1771-1784 doi.org/10.1111/1365-2435.13402
21. **Franklin, C., S.E. Nielsen, S.E. Macdonald.** 2019. Understory vascular plant responses to retention harvesting with and without prescribed fire. *Canadian Journal of Forest Research* 49: 1087-1100. doi.org/10.1139/cjfr-2018-0288
22. **Echiverri, L., S.E. Macdonald.** 2019. Utilizing a topographic moisture index to characterize understory vegetation patterns in the boreal forest. *Forest Ecology & Management* 447: 35-52. doi.org/10.1016/j.foreco.2019.05.054
23. **Stockdale, C., S.E. Macdonald, E. Higgs.** 2019. Forest closure and encroachment at the grassland interface: a century-scale analysis using oblique repeat photography. *Ecosphere* 10(6): article e02774 doi.org/10.1002/ecs2.2774
24. **Sandström, J., C. Bernes, K. Junninen, A. Lohmus, S.E. Macdonald, J. Müller, B.-G. Jonsson.** 2019. Impacts of dead-wood manipulation on the biodiversity of temperate and boreal forests: A systematic review. *Journal of Applied Ecology* 56: 1770-1781. Doi.org/10.1111/1365-2664.13395
25. **Bartels, S.F., R. James, R. Caners, S.E. Macdonald.** 2019. Depth-to-water mediates bryophyte response to harvesting in boreal forests. *Journal of Applied Ecology* 56: 1256-1266. Doi.org/10.1111/1365-2664.13359
26. **Stockdale, C., N. McLoughlin, M. Flannigan, S.E. Macdonald.** 2019. Could restoration of a landscape to a pre-European historical vegetation condition reduce burn probability? *Ecosphere* doi.org/10.1002/ecs2.2584
27. **Franklin, C., S.E. Macdonald, S.E. Nielsen.** 2019. Can retention harvests help conserve wildlife? Evidence for vertebrate species in the boreal forest. *Ecosphere* /doi.org/10.1002/ecs2.2632
28. **Goehing, J., D. Henkel-Johnson, S.E. Macdonald, E.W. Bork and B.R. Thomas.** 2019. Spatial partitioning of competitive effects from neighbouring herbaceous vegetation on establishing hybrid poplars in plantations. *Canadian Journal of Forest Research* 49: 595-605. doi.org/10.1139/cjfr-2018-0410
29. **Wang, Y., J.L.M. Pedersen, S.E. Macdonald, J. Zhang, S.E. Nielsen.** 2019. Experimental test of assisted migration for conservation of locally range-restricted plants in Alberta, Canada. *Global Ecology and Conservation* doi.org/10.1016/j.gecco.2019.e00572
30. **Franklin, C., S.E. Macdonald, and S.E. Nielsen.** 2018. Combining aggregated and dispersed green-tree retention harvesting for conservation of vascular plant communities. *Ecological Applications* 28(7): 1830-1840 doi.org/10.1002/eap.1774
31. **Leverkus, A.B, J.M. Rey Benayas, J. Castro, D. Boucher, S. Brewer, B. Collins, D. Donato, S. Fraver,**

- B.E. Kishchuk, E.-J. Lee, D.B. Lindenmayer, E. Lingua, E. Macdonald, R. Marzano, C.C. Rhoades, A. Royo, S. Thorn, J.W. Wagenbrenner, K. Waldron, T. Wohlgemuth, and L. Gustafsson. 2018. Salvage logging effects on regulating and supporting ecosystem services - A systematic map. *Canadian Journal of Forest Research* 48: 983-1000 doi.org/10.1139/cjfr-2018-0114
32. **Bartels**, S.F., R.T. Caners, J. Ogilvie, B. White, and S.E. Macdonald. 2018. Relating bryophyte assemblages to remotely-sensed depth-to-water in boreal mixedwood forest. *Frontiers in Plant Science* 9: article 858. doi.org/10.3389/fpls.2018.00858
 33. Dennett, J., A.K. Gould, A.J., S.E. Macdonald, S.E. Nielsen. 2018. Investigating detection success: lessons from trials using decoy rare plants. *Plant Ecology* 219: 577-589. doi.org/10.1007/s11258-018-0819-1
 34. Bernes, C., B. Macura, B.-G. Jonsson, K. Junninen, J. Müller, J. Sandström, A. Löhmus, S.E. Macdonald. 2018. Manipulating ungulate herbivory in temperate and boreal forests: impacts on vegetation and invertebrates. A systematic review. *Environmental Evidence* 7:13 doi.org/10.1186/s13750-018-0125-3
 35. **Gendreau-Berthiaume**, B., S.E. Macdonald, J.J. Stadt. 2018. Importance of the canopy in determining on-going regeneration and stand successional development in lodgepole pine forests. *Journal of Vegetation Science* 29: 213-225. doi.org/10.1111/jvs.12622
 36. **Kokkonen**, N.A., S.E. Macdonald, I. **Curran**, S.M. Landhäusser, V.J. Lieffers. 2018. Effects of substrate availability and competing vegetation on natural regeneration of white spruce on logged boreal mixedwood sites. *Canadian Journal of Forest Research* 48: 324-332.
 37. **Bartels**, S.F., S.E. Macdonald, D. Johnson, R.T. Caners, J.R. Spence. 2018. Bryophyte abundance, diversity, and composition after retention harvest in boreal mixedwood forest: evidence from the EMEND experiment. *Journal of Applied Ecology* 55: 947-957.
 38. Xing, D., S.E. Nielsen, S.E. Macdonald, J.R. Spence and F. He. 2018. Survival and growth of residual trees in a variable retention harvest experiment in a boreal mixedwood forest. *Forest Ecology and Management* 411: 187-194.
 39. **Bergeron**, J.A.C., J. Pinzon, S. Odsen, S. **Bartels**, S.E. Macdonald, J.R. Spence. 2017. Ecosystem memory of wildfires affects multi-taxa biodiversity resilience in boreal mixedwood forest after retention harvest. *Oikos* 12: 1738-1747.
 40. Calvo-Polanco, M.M., W. Zhang, S.E. Macdonald, J. Senorans, J.J. Zwiazek. 2017. Boreal forest plant species responses to pH: ecological interpretation and application to reclamation. *Plant and Soil* 420: 195-208
 41. **Goehing**, J., B.R. Thomas, S.E. Macdonald, E.W. Bork. 2017. Effects of alternative establishment systems on resource availability, understorey composition, and tree performance in juvenile hybrid poplar plantations. *Forestry* 90: 515-529.
 42. **Grenke**, J., S.E. Macdonald, B.R. Thomas, C.A. Moore, E.W. Bork. 2016. Relationships between understory vegetation and hybrid poplar growth and size in an operational plantation. *Forestry Chronicle* 92: 469-476.
 43. Bernes, C., B.G. Jonsson, K. Junninen, A. Löhmus, S.E. Macdonald, J. Müller, J. Sandström. 2016. What are the impacts of manipulating grazing and browsing by ungulates on plants and invertebrates in temperate and boreal forests? A systematic review protocol. *Environmental Evidence* 5:17 DOI: 10.1186/s13750-016-0070-y
 44. Bernes, C., B.G. Jonsson, K. Junninen, A. Löhmus, S.E. Macdonald, J. Müller, J. Sandström. 2016. What are the impacts of dead-wood manipulation on the biodiversity of temperate and boreal forests? A systematic review protocol. published on-line by the Stockholm Environment Institute; Mistra EviEM (Evidence-based Environmental Management). <http://www.eviem.se/Documents/projekt/2016/SR12%20protocol%203.0.pdf>
 45. **Pedersen**, J.L.M., S. E. Macdonald, S. E. Nielsen. 2016. Reproductive ecology of the distylous species *Houstonia longifolia*: Implications for conservation of a rare species. *Botany* 94(10): 983-992.
 46. **Stockdale**, C., M. Flannigan, S.E. Macdonald. 2016. Is the END (emulation of natural disturbance) a new beginning? A critical analysis of the use of fire regimes as the basis of forest ecosystem management with examples from the Canadian western Cordillera. *Environmental Reviews* 24(3): 233-243. Doi.org/10.1139/er-2016-0002
 47. **Gendreau-Berthiaume**, B., S.E. Macdonald, J.J. Stadt. 2016. Extended density-dependent mortality in mature conifer forest: causes and implications for ecosystem management. *Ecological Applications* 26(5): 1486-1502 DOI: 10.1890/15-0887

48. **Gelderman**, M.S., S.E. Macdonald, A.J. Gould. 2016. Regeneration niche of whitebark pine in the Canadian Rocky Mountains: The basis for restoring an endangered species. *Arctic Alpine and Antarctic Research* 48(2):279-292. doi: <http://dx.doi.org/10.1657/AAAR0015-057>
49. **McIntosh**, A.C.S., S.E. Macdonald and S. A. Quideau. 2016. Understory plant community composition is associated with fine-scale above- and below-ground resource heterogeneity in mature *Pinus contorta* forests. *PloS ONE* 11(3): e0151436 DOI: 10.1371/journal.pone.0151436
50. **Henkel-Johnson**, D., S.E. Macdonald, E.W. Bork, B.R. Thomas. 2016. Influence of weed composition, abundance, and spatial proximity on growth in young hybrid poplar plantations. *Forest Ecology and Management* 362: 55-68.
51. Bernes, C., B.G. Jonsson, K. Junninen, A. Löhmus, S.E. Macdonald, J. Müller, J. Sandström. 2015. What is the impact of active management on biodiversity in boreal and temperate forests set aside for conservation or restoration? A systematic map. *Environmental Evidence* 4:25 DOI 10.1186/s13750-015-0050-7
52. Macdonald, S.E., S. Landhäusser, J. Skousen, J. Frouz, S. Quideau, S. Hall, J. Franklin, D. Jacobs. 2015. Forest restoration following surface mining disturbance: Challenges and solutions. *New Forests* 46: 703-732
53. Macdonald, S.E., A.E.K. Snively, **J. M. Fair**, S. M. Landhäusser. 2015. Early trajectories of forest understory development on reclamation sites: influence of forest floor placement and a cover crop. *Restoration Ecology* 23: 698–706
54. **Nijland**, W., N.C. Coops, S.E. Macdonald, S.E. Nielsen, C.W. Bator, B. White, J. Ogilvie, J.J. Stadt. 2015. Remote sensing proxies of productivity and moisture predict forest stand type and recovery rate following experimental harvest. *Forest Ecology and Management* 357: 239-247
55. **Nijland**, W., N.C. Coops, S.E. Macdonald, S.E. Nielsen, C.W. Bator, J.J. Stadt. 2015. Comparing patterns in forest stand structure following variable harvests using airborne laser scanning data. *Forest Ecology and Management* 354: 272-280
56. **Stockdale**, C.A., C. Bozzini, S.E. Macdonald, E. Higgs. 2015. Extracting ecological information from oblique angle landscape photographs: assessment of the WSL monoplottting tool. *Applied Geography* 63: 315-325
57. **Clason**, A., S.E. Macdonald, S. Haeussler. 2015. Forest response to cumulative disturbance and stress: The resilience of whitebark pine forests of west-central British Columbia. *Écoscience* 21: 174-185. [open access]
58. **Gendreau-Berthiaume**, B., S.E. Macdonald, J. Stadt, R. Hnatiuk. 2015. How dynamic are understory communities and the processes structuring them in mature conifer forest? *Ecosphere* 6(2):27. <http://dx.doi.org/10.1890/ES14-00308.1> [open access]
59. Harper, K.A., S.E. Macdonald, M.S. Mayerhofer, S.R. Biswas, P.-A. Esseen, K. Hylander, K.J. Stewart, A.U. Mallik, P. Drapeau, B.-G. Jonsson, D. Lesieur, J. Kouki, and Y. Bergeron. 2015. Edge influence on vegetation at natural and anthropogenic edges of circumboreal forests. *Journal of Ecology* 103: 550-562 [open access]
60. Bernes, C., B.-G. Jonsson, K. Junninen, A. Löhmus, S.E. Macdonald, J. Müller, J. Sandström. 2014. What is the impact of active management on biodiversity in forests set aside for conservation or restoration? A systematic review protocol. *Environmental Evidence* 3:22 9 pgs. doi:10.1186/2047-2382-3-22 [open access]
61. Fedrowitz, K., J. Koricheva, S.C. Baker, D.B. Lindenmayer, B. Palik, P. Rosenbald, W. Beese, J.F. Franklin, J. Kouki, E. Macdonald, C. Messier, A. Sverdrup-Thygeson, L. Gustafsson. 2014. Can retention forestry help conserve biodiversity? A meta-analysis. *Journal of Applied Ecology* 51: 1669-1679. [open access]
62. Bergeron, Y., H.Y.H. Chen, N.C. Kenkel, A.L. Leduc, and S.E. Macdonald. 2014. Boreal mixedwood stand dynamics: ecological processes underlying multiple pathways. *Forestry Chronicle* 90: 202-213. [open access]
63. **Gärtner**, S.M., M. Bokalo, S.E. Macdonald, K. Stadt. 2014. Variation in post-fire regeneration of boreal mixedwoods forests: underlying factors and implications for natural disturbance-based management. *New Forests* 45: 215-234. [open access]
64. **Abele**, S.E., S.E. Macdonald and J.R. Spence. 2014. Cover type, environmental characteristics and conservation of terrestrial gastropod diversity in boreal mixedwood forests. *Canadian Journal of Forest Research* 44: 36–44. [open access]
65. **McIntosh**, A.C.S., and S.E. Macdonald. 2013. Short-term resistance of above- and below-ground properties and processes to simulated mountain pine beetle attack in a novel landscape. *Ecosphere* 4(6): article 68 doi/pdf/10.1890/ES12-00344.1 [open access]

66. **Caners**, R.T., S. E. Macdonald and R.J. Belland. 2013. Linking the biological traits of boreal bryophytes to forest habitat change after partial harvesting. *Forest Ecology & Management* 303: 184-194. [open access]
67. **McIntosh**, A.C.S., S.E. Macdonald and S. A. Quideau. 2013. Linkages between the forest floor microbial community and resource heterogeneity within mature lodgepole pine forests. *Soil Biology and Biochemistry* 63: 61-72 [open access]
68. **McIntosh**, A.C.S. and S.E. Macdonald. 2013. Potential for lodgepole pine regeneration after mountain pine beetle attack in newly invaded Alberta stands. *Forest Ecology & Management* 295: 11-19. [open access]
69. **Caners**, R.T., S. E. Macdonald, R. J. Belland. 2013. Bryophyte assemblage structure after partial harvesting in boreal mixedwood forest depends on residual canopy abundance and composition. *Forest Ecology & Management* 289: 489-500. [open access]
70. **Crisfield**, V., S.E. Macdonald, J. Gould. 2012. Effects of recreational traffic on alpine plant communities in the northern Canadian Rockies. *Arctic, Antarctic, and Alpine Research* 44: 277-287. [open access]
71. **McIntosh**, A., S.E. Macdonald, and M. Gundale. 2012. Tree species versus regional controls on ecosystem properties and processes: an example using introduced *Pinus contorta* in Swedish boreal forests. *Canadian Journal of Forest Research* 42: 1228-1238. [open access]
72. Schmieider, A., J. Kreyling, M.J. Steinbauer, S.E. Macdonald, A. Jentsch, C. Beierkuhnlein. 2012. A continental comparison indicates long-term effects of forest management on understory diversity in coniferous forests. *Canadian Journal of Forest Research* 42: 1239-1252. [open access]
73. **Chavez**, V., and S.E. Macdonald. 2012. Partitioning vascular understory diversity in boreal mixedwood forests: the importance of mixed canopies for diversity conservation. *Forest Ecology and Management* 271: 19-26. [open access]
74. **Lilles**, E., B. Purdy, S.E. Macdonald and S. Chang. 2012. Growth of aspen and white spruce on naturally saline sites in northern Alberta: Implications for development of boreal forest vegetation on reclaimed saline soils. *Canadian Journal of Soil Science* 92: 213-227. [open access]
75. Burton, P.J. and S.E. Macdonald. 2011. The Restorative Imperative: Challenges, objectives and approaches to restoring naturalness in forests. *Silva Fennica* 45 (5): 843-863. [open access]
76. **Gärtner**, S.M., V.J. Lieffers and S. E. Macdonald. 2011. Ecology and management of natural regeneration of white spruce in the boreal forest. *Environmental Reviews* 19: 461-478. [open access]
77. Harper, K.A. and S.E. Macdonald. 2011. Quantifying distance of edge influence: A comparison of methods and a new randomization method. *Ecosphere* 2(8): art94. DOI: 10-1890/ES11-00146.1 [open access]
78. **Cavard**, X., S.E. Macdonald, Y. Bergeron and H. Chen. 2011. Importance of mixedwoods for biodiversity conservation: Evidence for understory plants, songbirds, soil fauna, and ectomycorrhizae in northern forests. *Environmental Reviews* 19: 142-161. [open access]
79. **Chavez**, V. and S.E. Macdonald. 2010. Understory species interactions in mature boreal understory plant communities. *Botany* 88: 912-922. [open access]
80. **Lilles**, E.B., B.G. Purdy, S. Chang, and S.E. Macdonald. 2010. Soil and groundwater characteristics of saline sites supporting boreal mixedwood forests in northern Alberta. *Canadian Journal of Soil Science* 90: 1-14. [open access]
81. **Martin-DeMoor**, J., V.J. Lieffers and S.E. Macdonald. 2010. Natural regeneration of white spruce in aspen-dominated boreal mixedwoods following harvesting. *Canadian Journal of Forest Research* 40: 585-594. [open access]
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Book Chapters:

- Macdonald, S.E., P.G. Comeau, C.A. Nock, B.D. Pinno. 2023. Ecological silviculture for aspen mixedwoods in western Canada (Chapter 13). Pp. XXX-XXX. *In Ecological silvicultural systems: Exemplary models for adaptive management. Edited by Palik, B.J. and D'Amato, A.W.* Wiley
- Gauthier, S., T. Kuuluvainen, S.E. Macdonald, E. Shorohova, A. Shvidenko, A.-C. Bélisle, M.-A. Vaillancourt, A. Leduc, G. Grosbois, Y. Bergeron, H. Morin, M. Montoro Girona. 2023. Ecosystem management of the boreal forest in the era of global change (Chapter 1). pp. 3-49. *In Boreal Forests in the Face of Climate Change - Sustainable Management. Edited by M. Montoro Girona, H. Morin, S. Gauthier, & Y. Bergeron. Advances in Global Change Research, 74, Springer Nature, Cham, Switzerland. ISBN 978-3-031-15987-9. doi.org/10.1007/978-3-031-15988-6_1*
- Macdonald, S.E., S. Quideau and S. Landhäusser. 2012. Rebuilding boreal forest ecosystems after industrial disturbance. pp 123-160. *In Restoration and reclamation of boreal ecosystems: Attaining sustainable development. Edited by D.H. Vitt and J.S. Bhattia. Cambridge University Press.*

Manuscripts Submitted:

- Echiverri, L.F.I., S.E. Macdonald, S.E. Nielsen. Effects of fragmentation on the abundance and reproductive performance of an herbaceous annual, *Melampyrum lineare*, in the boreal forest. *Plant Ecology*
- Lieffers, V.J., J. Benedik, K. Stadt, S.E. Macdonald. Poor regeneration of pine after mountain pine beetle attack in colder boreal regions of Canada. *Can. J. For. Res.*

RESEARCH GRANTS AND CONTRACTS

Current:

- Kneeshaw, Dan & 9 others including Ellen Macdonald. SmartForests Canada; A network of monitoring plots and plantations for modeling and adapting forests to climate change. Canada Foundation for Innovation. \$9.5 million (UofA portion \$1.1 million). 2018-2023.
- McIntosh, A.C.S., and Macdonald, S.E. Post-harvesting biodiversity recovery curves for the boreal forest. Alberta Biodiversity Monitoring Institute, Mitacs, Alberta Conservation Association. \$59,120 in total 2021-2022.

Previous (since 2000):

- Macdonald, S.E. Disturbance, dynamics and resilience of understory plant communities in northern forests. Natural Sciences & Engineering Research Council of Canada (NSERC) Discovery Grant. \$33,000/yr 2012 - 2021.

- Macdonald, S.E., S.E. Nielsen. Post-harvesting biodiversity recovery curves for the boreal forest. \$20,000. 2020.
- Macdonald, S.E., U. Silins, and A. Anderson. Impacts of Mountain Pine Beetle on hydrology and vegetative redevelopment in lodgepole pine forests of west-central Alberta: Phase II – Ecological responses in the grey attack stage. Foothills Research Institute: average of \$104,230/yr for five years (2014-2019).
- Macdonald, S.E., J.R. Spence. Assessing Variable Retention harvesting as an ecosystem-based forest management tool for biodiversity, forest productivity and carbon sequestration. Daishowa-Marubeni International Ltd. (from Forest Resource Improvement Association of Alberta). \$480,000 over two years 2017 – 2019.
- Macdonald, S.E., V.J. Lieffers, N. Erbilgin, M. Flannigan. Beyond Beetle: Natural and facilitated lodgepole pine regeneration after Mountain Pine Beetle outbreaks in Alberta. Foothills Research Institute: \$110,000; Alberta Innovates BioSolutions: \$130,000; Alberta Environment and Sustainable Resource Development: \$45,000; Canadian Forest Products: \$130,000; Forest Resource Improvement Association of Alberta: \$337,941. 2014-2019.
- Macdonald, S.E. Impacts of capping depth on tree growth and ground vegetation: Evidence from the South Bison Hill Instrumented Watershed and other Syncrude overburden reclaimed sites. Syncrude Canada Ltd. \$34,224 one time (2018-2019).
- Macdonald, S.E. TEEM (Terrestrial Environmental Effects Monitoring) Publication Project – Jack Pine growth and health monitoring. Wood Buffalo Environmental Association: \$58,000 one time for 2018-2019.
- Macdonald, S.E. et al. Tools for managing forest productivity and biodiversity in relation to ecosystem function in boreal mixedwood forests. NSERC Strategic Project Grant; average of \$254,767/yr for three years (2013 – 2016, extended to Dec 2017).
- Spence, J.R. et al. Adaptive forest management through EMEND. NSERC, Canadian Forest Products Ltd., and Daishowa-Marubeni International Ltd.; Collaborative Research and Development (CRD) Grant; an average of \$169,743/yr for five years (2013-2018).
- Macdonald, S.E. Tools to guide management of invasive species in grassland ecosystems. Alberta Conservation Association Grant in aid of Research. \$19,820 for one year 2016-2017; Rangeland Research Institute. \$20,000 for one year 2015-2016.
- Bork, E.W. and S.E. Macdonald. Minimizing hybrid poplar tree mortality and plantation yield losses due to competition. NSERC and Alberta-Pacific Forest Industries; Collaborative Research and Development (CRD) Grant; an average of \$53,693/yr for four years (2012-2016).
- Macdonald, S.E. Terrestrial environmental effects monitoring – monitoring of understory vegetation response to atmospheric inputs associated with oil sands developments. Wood Buffalo Environmental Association: \$42,000/yr for 2012-2015.
- Macdonald, S.E. Efficacy of wet areas mapping (WAM) to predict the susceptibility of habitats to invasion by non-native vascular plants. Alberta Tourism, Parks and Recreation. \$10,000 for 2013-2015.
- Macdonald, S.E. Conditions and factors affecting regeneration of whitebark pine. Alberta Conservation Association \$19,250 for 2012-2013; Alberta Tourism, Parks and Recreation. \$26,000 for 2012-2013; \$23,000 for 2013-2014.
- Macdonald, S.E. Successional dynamics of lodgepole pine forest under stress. Alberta Sustainable Resources Development \$22,000/yr for 2009-2012; \$15,000 for 2012-13. Alberta Conservation Association Biodiversity Challenge Grant to Benoit Gendreau-Berthiaume \$13,585 for 2012-2013.
- Macdonald, S.E. Use of woody debris for reclamation of jack pine forests. Alberta Parks, Recreation and Tourism: \$26,500 for 2011-2012
- Macdonald, S.E. Understory composition and diversity in the boreal mixedwood. Natural Sciences & Engineering Research Council of Canada (NSERC) Discovery Grant. \$31,370/yr 2007-2012.
- Silins, U., and S.E. Macdonald. Effects of simulated Mountain Pine Beetle on hydrology and vegetation of lodgepole pine forest in the foothills of Alberta. Foothills Research Institute: \$502,181 over 3.5 years 2008 - 2011
- Bokalo, M., K. Stadt, S.E. Macdonald. Benchmarking natural origin stand development. Mixedwood Mgmt. Association, Forest Resource Improvement Association (\$21,500/yr 2007 - 09; \$77,070 total 2007/09).
- Macdonald, S.E. and 9 others. Ecological implications of altering the composition of mixedwood forests. Sustainable Forest Management Network of Centres of Excellence (NCE) “State of Knowledge” Grant. 2007/08: \$73,500; 2008/09: \$46,500.

- Macdonald, S.E. Disturbance effects on alpine vegetation. Alberta Parks, Recreation & Tourism; \$7,000 in 2008/09.
- Lieffers, V.J., Macdonald, S.E. & others. Growth chamber for enhanced forest management. NSERC Research Tools & Instruments Grant. \$51,460 in 2007/08.
- Macdonald, S.E. Motorized vehicles for forest plant biodiversity research. NSERC Research Tools & Instruments Grant. \$33,614 in 2007/08.
- Kenkel, N., Messier, C., E. Macdonald + 6 others. Assessing factors of seedling mortality of important boreal species across the Canadian boreal forest. NSERC Collaborative Research & Development grant program. \$29,000/yr 2004 - 2007
- Lieffers, V.J., E. Macdonald, D. Greene. Natural regeneration of white spruce following logging in mixedwoods. SFMN 2005/06: \$88,500; 2006/07: \$99,800; 2007/08: \$86,550.
- Spence, J.R., E. Macdonald, V. Lieffers, S. Quideau, F. Schmiegelow. The first re-measurement of the EMEND experiment and associated work. Sustainable Forest Management NCE. \$125,000/yr 2005-2008.
- Chang, S., E. Macdonald, B. Purdy. Towards an understanding of forest productivity in saline landscapes of Alberta's boreal forest. Syncrude, Suncor, Canadian Natural Resources, Ltd., Cumulative Environmental Management Association. 2004/05: \$80,510; 2005/06: \$95,192; 2006/07: \$81,880.
- Macdonald, S.E. Understory composition and diversity in the boreal mixedwood. Natural Sciences & Engineering Research Council of Canada (NSERC) Discovery Grant. \$30,000/yr 2002-2007.
- Macdonald, S.E., Y. Bergeron, P. Widden. Structure and function of boreal forest edges across Canada: Towards natural disturbance management of edge effects. Sustainable Forest Management NCE. \$40,700/yr 2002-2005.
- Schmiegelow, F., J. Spence, and E. Macdonald. Effects of salvage logging on biodiversity. Alberta-Pacific Forest Industries Inc. \$143,630/yr 2003-2005.
- Macdonald, S.E. and B.G. Purdy. Understanding factors affecting early successional plant community development and productivity after oil sands mining. Syncrude 2004: \$45,310; 2005: \$57,500.
- Macdonald, S.E., M.R.T. Dale, and D. Greene. Stand- and landscape-scale drivers of white spruce regeneration in the boreal mixedwood. Sustainable Forest Management NCE. \$40,900/yr 2001-2004.
- Greene, D. and S.E. Macdonald. Modelling the spatial dynamics of white spruce and aspen in the boreal mixedwood. Sustainable Forest Management NCE. \$28,520/yr 2001-2004.
- Comeau, P. and S.E. Macdonald. Spatial aspects of boreal mixedwood succession and stand dynamics. Sustainable Forest Management NCE. \$27,600/yr 2001-2004.
- Lieffers, V.J., E. Macdonald, J.J. Zwiazek, U. Silins. Natural saline systems as models for reclamation of CT materials. Environmental Science and Technology Alliance Canada, \$37,220/yr 1999-2001; NSERC CRD \$47,696 2000/01; Syncrude \$40,020 2001/02, \$50,000/yr 2002-2004.
- Hannon, S. and S.E. Macdonald. Impacts of seismic exploration on vegetation and bird communities of the Kendall Island Migratory Bird Sanctuary. Anadarko Corp., Canadian Wildlife Service, Polar Continental Shelf Project, Canadian Circumpolar Institute. 2002/03: \$137,000; 2003/04: \$160,000.
- Macdonald, S.E. Impacts of post-burn salvage logging on plant biodiversity and tree regeneration of the mixedwood boreal forest. Sustainable Forest Management NCE. \$24,200/yr 2001-2003.
- Macdonald, S.E. Effects of intensive forest management on forest structure, composition, and understory biodiversity in the western boreal. Sustainable Forest Management NCE. \$65,000/yr 2000-2003.
- Boutin, S.A. R.P. Pharis, S.E. Macdonald. Cone induction of residual white spruce seed trees using Gibberellin A4/7: Influence on squirrel reproduction, cone predation by squirrels, and white spruce seedling recruitment in the boreal mixedwood. Sustainable Forest Management NCE. \$25,000/yr 2000-2003.
- Messier, C., D. Kneeshaw, E. Macdonald + 6 others. Assessing factors of seedling mortality of important boreal species across the Canadian boreal forest. Sustainable Forest Management NCE \$49,000 2000/01, \$35,200 2001/02, \$59,000 2002/03.
- Macdonald, S.E. and B.R. Thomas. Early selection for enhanced CO₂ biofixation and growth in fast growing poplar plantations. Alberta-Pacific Forest Industries, Daishowa-Marubeni International Ltd., Syncrude, Suncor, Mobil Oil, Alberta Energy. Average of \$30,482/yr, 1997 - 2003.
- Prepas, E. + 10 others. Meanook Biological Station – Major Facilities. NSERC. \$41,600/yr 2000-2003
- Macdonald, S.E. Adaptation and plasticity in boreal trees. NSERC Research Grant. \$26,230/yr. 1998-2002.
- Macdonald, S.E. and M.R.T. Dale. Natural patterns of white spruce regeneration following fire - analysis of microsite to landscape-level patterns. Alberta-Pacific Forest Industries, Sustainable Forest

- Management Network of Centres of Excellence. \$45,000/yr. 1996-1999. \$36,200 1999/00, \$50,200 2000/01.
- Macdonald, S.E., M.R.T. Dale, V.J. Lieffers, A. Munson, D. Vitt. Patterns and processes of the boreal forest understory: a comparison of post-fire and post-harvest dynamics. Sustainable Forest Management Network of Centres of Excellence. \$60,000/yr 1998-2001.
- Prepas, E., S.E. Macdonald & 10 others. The role of buffer strips in the maintenance of aquatic and terrestrial ecosystems in the aspen-dominated boreal mixed-wood forest: Phase II: Post-harvesting studies. NSERC CRD, Alberta Pacific Forest Industries, Weyerhaeuser Alberta Ltd., Ainsworth Lumber, Syncrude, C & S Resources, Manning Diversified Forest Products Trust Fund, Alberta Environmental Protection. \$820,000/yr 1997-2000.
- Macdonald, S.E. Intensive forest management umbrella. Sustainable Forest Management Network of Centres of Excellence \$25,000 1999/2000, \$22,500 2000/2001.
- Hodgetts, R.B., S.E. Macdonald, and B.R. Thomas. Development of microsatellite markers for white spruce. Weldwood of Canada Ltd. (Hinton), Millar-Western, Canadian Forest Products, Alberta Newsprint Corp., Weyerhaeuser (Grande Prairie), Daishowa-Marubeni International Ltd. \$42,500, 1998, Manning-Diversified Forest Products Trust Fund \$15,000 1999/2000.

GRADUATE STUDENT SUPERVISION

STUDENTS CURRENTLY SUPERVISED:

R. Errington. Permafrost thaw impacts on vegetation. **Ph.D.** Sept. 2018 –

COMPLETED STUDENTS: and their *current position*

1. L. Echiverri. **Ph.D. 2021**. Seismic line effects on understory vegetation. (co-supervised with S. Nielsen). *Research Scientist, NCASI (National Council for Air and Stream Improvement)*.
2. S. Venskaitis. **M.Sc. 2019**. Effect of capping depth and slope position on tree growth and vegetation development on reclaimed oil sands mine sites. *Vegetation Ecologist - Vertex Environmental Consulting*.
3. R. Dias de Andrade Silva. **M.Sc. 2019**. Restoration of degraded trail crossings in wet and riparian areas using balsam poplar cuttings. (co-supervised with Anne McIntosh). *PhD student, Univ. of Alberta*.
4. J. Steinke. **M.Sc. 2018**. Vegetation responses following mountain pine beetle attack in lodgepole pine forests of west-central Alberta. (co-supervised with Vic Lieffers). *Plant ecologist, Golder Associates*.
5. C. Franklin. **Ph.D. 2018**. Effectiveness of retention harvesting for conservation of forest understory vegetation and furbearers. (co-supervised with S. Nielsen) *Instructor, Dalhousie University*
6. L. Echiverri. **M.Sc. 2017**. Understory plant community diversity and resilience as a function of a lidar-derived wetness index. *See above*.
7. E. Hoffman. **M.Sc. 2016**. Influence of environmental and site factors and biotic interactions on vegetation development following surface mine reclamation using coversoil salvaged from forest sites. (co-supervised with S. Landhäusser) *Ecologist, Eclipse Geomatics, Smithers, B.C.*
8. C. Stockdale. **Ph.D. 2016**. A century of landscape change in the southern Rocky Mountains and Foothills of Alberta: Using historical photography to quantify ecological change. *Forest Officer, Natural Resources Canada, Canadian Forest Service, Edmonton*
9. A. Wilson (née Bijman). **M.Sc.. 2016**. Restoring forest understory vegetation on a reclaimed coal mine. (co-supervised with S. Landhäusser). *Restoration ecology consultant*
10. J. Pedersen. **M.Sc. 2015**. Assisted migration for conservation of rare plant species in Alberta. (co-supervised with S. Nielsen). *Community programs and Events Coordinator, Town of Devon, AB.*
11. B. Gendreau-Berthiaume. **Ph.D. 2015**. Successional dynamics of lodgepole pine forests in the eastern slopes of the Rocky Mountains. *Research professional, Institut des Sciences de la Forêt Tempérée, Ripon, Quebec.*
12. J. Göhling. **M.Sc. 2015**. Managing competing vegetation to improve survival and growth in hybrid poplar plantations. (co-supervised with E. Bork) *Science communications specialist, Alberta Environment and Parks*
13. M. Gelderman. **M.Sc. 2015**. Restoration of whitebark pine in the Canadian Rocky Mountains. (co-supervised with J. Gould) *Forest health officer, Alberta Forestry, Parks and Tourism*

14. J. Liu. **M.Sc. 2014**. Effects of biochar and fertilization on early plant community and soil development on a reclaimed coal mine site. (co-supervised with D. MacKenzie) *returned to China*
15. N. Bakker. **M.Sc. 2014**. Forest regeneration after harvesting. (joint program with University of Eastern Finland). (co-supervised with J. Kouki and V. Lieffers) *PhD student in Finland*.
16. D. Henkel-Johnson. **M.Sc. 2013**. Spatial effects of competing vegetation on survival and growth in hybrid poplar plantations. *Forestry Division Planner, Minnesota Department of Natural Resources, Duluth, MN*.
17. A. McIntosh. **Ph. D. 2012**. Ecology of lodgepole pine forests under changing disturbance. *Associate Professor, Augustana Campus, University of Alberta*.
18. J. Fair. **M.Sc. 2011**. Use of natural forest floor material to encourage native plant redevelopment after coal mining. (co-supervised with Simon Landhausser). *High school math and science teacher, Okanagan Central School District*.
19. E. Graham. **M.Sc. 2011**. Underplanting white spruce in aspen-dominated mixedwood forests: effects on understory plant communities and ecological processes. *Managing Director and Environmental Advisor, Red Sand Environmental, Edmonton*
20. A. Clason. **M.Sc. 2010**. Ecological resilience of whitebark pine forests under disturbance and stress. *Research Associate, Bulkely Valley Research Center, Smithers, British Columbia*.
21. V. Crisfield. **M.Sc. 2010**. Effects of human disturbance on alpine vegetation. *PhD student – Université de Sherbrooke*
22. S. Abele. **M.Sc. 2010**. Relationships between gastropods and vegetation in partially-harvested mixedwood forest. (co-supervised with John Spence). *deceased*
23. R. Caners. **Ph.D. 2010**. Bryophyte community response to disturbance in the western boreal forest. (co-supervised with R. Belland). *Curator of Botany, Royal Alberta Museum*.
24. V. Chavez. **Ph.D. 2010**. Understory biodiversity in the mixedwood boreal forest. *Program Specialist - Alberta Innovates BioSolutions*.
25. J. Lypow. **M.Sc. 2009**. Pattern and process of plant community recovery following fire in the boreal mixedwood. *Ecologist, Navus Environmental Inc.*
26. J. Martin-DeMoor. **M.Sc. 2009**. Spatial pattern of natural regeneration of white spruce following forest harvesting. (co-supervised with V. Lieffers). *Wildlife biologist, Canadian Wildlife Service*.
27. S. Griffiths. **M.Sc. 2008**. Understory plant communities in managed forests. (co-supervised with P. Comeau) *Project Analyst at Canadian Environmental Assessment Agency, Toronto*.
28. A. Craig. **M.Sc. 2008**. Response of understory plant communities in the boreal mixedwood to variable retention harvesting. *Ecologist, Navus Environmental*
29. E. Close. **M.Sc. 2007**. Relationships between soils, vegetation, and forest productivity in naturally-saline areas of the boreal forest: models for reclamation of saline sites following oil sands mining. (co-supervised with B. Purdy). *Forest Ecologist, British Columbia Forest Service*.
30. J. Gould. **Ph.D. 2007**. Development of conservation strategies for rare plants in Alberta. (co-supervised with R. Belland). *Retired, previously: Senior Science Advisor; Office of the Chief Scientist; Alberta Environment and Parks*
31. L. Shepherd. **M.Sc. 2005**. Caribou habitat selection in relation to lichen and fire in Jasper and Banff National Parks. (co-supervised with F. Schmiegelow) *Warden service – Jasper National Park*.
32. L. Cuthbertson. **M.Sc. 2005**. The ecology of *Armillaria sinapina* in mixedwood forests of north-western, Alberta, Canada. (co-supervised with K. Mallett). *Teaching English in Korea*
33. T. Kemper. **M.Sc. 2004**. Short and long-term effects of winter seismic exploration on low arctic plant communities of the Kendall Island Migratory Bird Sanctuary, Northwest Territories. *Conservation Biologist, Environment and Climate Change Canada*
34. N. Lavoie. **Ph.D. 2004**. Variation in flammability with time-since-fire for jack pine - black spruce forest. (co-supervised with M. Alexander). *Fire Scientist, Ministry of Natural Resource, Quebec*.
35. S. Kurulok. **M.Sc. 2004**. Impacts of post-fire salvage logging on tree regeneration and understory plant communities in burned stands of the mixedwood boreal forest. *Small business operator*
36. A. Islam. **Ph.D. 2003**. Ecophysiological adaptations of black spruce (*Picea mariana*) and tamarack (*Larix laricina*) seedlings to flooding and nutrition stress. *Research Scientist (revegetation), Kuwait federal government*.
37. V. Peters. **Ph.D. 2002**. Keystone processes affect succession in boreal mixedwoods — the relationship between masting in white spruce and fire history. (co-supervise with M.R.T. Dale). *Professor, King's University College, Edmonton, AB*.
38. L. Lazaruk. **M.Sc. 2002**. Impacts of fire and partial-cut harvesting on abundance and diversity of ectomycorrhizal fungi. (co-supervised with D. Khasa). *Edmonton Police Service*

39. T. Fenniak. **M.Sc. 2001**. Response of environmental variables and understory vascular vegetation to various intensities of harvesting at the EMEND site, northern Alberta. *deceased*
40. K. Tupker. **M.Sc. 2001**. Effects of CO₂ enrichment on greenhouse performance of trembling aspen and hybrid poplar. (co-supervised with B. Thomas) *Manager, Leadership Excellence, Alberta Education*.
41. S. Mills. **M.Sc. 2001**. Bryophyte species composition and diversity at different scales in conifer-dominated boreal forest stands. (co-supervised with D. Vitt) *Professor, McMaster University*
42. S. Peters. **M.Sc. 2000**. Impacts of seed predation on white spruce recruitment under a seed tree system. (co-supervised with S. Boutin) *Species at Risk Biologist, Alberta Conservation Association*
43. J. Rhemtulla. **M.Sc. 1999**. 80 years of change in the vegetation of the montane region of Jasper National Park. *Associate Professor, University of British Columbia*
44. K. Harper. **Ph.D. 1999**. Edge effects on forest structure and composition in the boreal mixedwood. *Adjunct Professor, Dalhousie University and instructor at St. Mary's University, Halifax*.
45. G. Peterson. **M.Sc. 1998**. Vegetation dynamics of the Peace-Athabasca delta. (co-supervised with P. Kershaw). *Last known: Instructor (Environment & Natural Resources Technology), Aurora College, Thebacha Campus, Ft. Smith, NWT*.
46. J. Stuart-Smith. **M.Sc. 1998**. Population dynamics and genetic variation in whitebark pine. *Warden Service, Parks Canada*.
47. C. Burgess. **M.Sc. 1997**. Forested landscape patterns in the western boreal mixedwood forest of Alberta: Riparian forests, fire history, canopy composition and topography. (co-supervised with S. Boutin). *International and U.S. Relations, Yukon Government*
48. M. Hicks. **M.Sc. 1997**. Effects of forest management on genetic diversity in lodgepole pine. (co-supervised with R. Hodgetts). *Head of Biology Unit, Agri-Food Laboratories, Alberta Agriculture and Irrigation*.
49. B. Thomas. **Ph.D. 1996**. Genetic variation and phenotypic plasticity in trembling aspen. (co-supervised with B.P. Dancik). *Professor, Dept. of Renewable Resources, University of Alberta*
50. K. Astridge. **M.Sc. 1996**. Effect of microhabitat variation in peatlands on *Picea mariana* and *Larix laricina* seedlings. *Silviculture Specialist, British Columbia Ministry of Forests*.
51. M.H. Jones. **Ph.D. 1995**. Experimental investigations into the effects of climate change on high arctic plants. (co-supervised with G. Henry). *Previously taught at Mount Hood Community College, Gresham, Oregon; now deceased*
52. K.J. Greenway. **Ph.D. 1995**. Adaptations to light in the boreal mixedwood forest. (co-supervised with V.J. Lieffers). *Executive Director, Forest Stewardship and Trade, Alberta Forestry, Parks and Tourism*.
53. S. Urban. **M.Sc. 1993**. Wood strength and annual ring width characteristics of various root and trunk components of white spruce following partial canopy removal. (co-supervised with V.J. Lieffers). *Science teacher, Tofield, AB*.
54. Y. Jiang. **M.Sc. 1993**. Effects of prolonged cold storage on physiology and field performance of white spruce seedlings. (co-supervised with J. Zwiazek).
55. A.G. Mugasha. **Ph.D. 1992**. Responses of tamarack and black spruce to drainage, thinning, and fertilization of Alberta peatlands. (co-supervised with D. Pluth). *Previously Professor at a University in Tanzania, now deceased*.
56. F. Yin. **M.Sc. 1992**. Variability in drainage - induced response growth and its relation to pre-drainage growth rate of peatland black spruce and tamarack.
57. Z.M. Wang. **Ph.D. 1991**. Black spruce from peatland and upland habitats in Alberta: Population variation and differentiation. *Research Professional, Dept. of Biology, McGill University*

POSTDOCTORAL FELLOWS AND RESEARCH ASSOCIATES: (and current position)

- Seung-il Lee. Biodiversity recovery following forest harvesting. April 2021 – Feb. 2022. *Assistant Professor, Lakehead University*.
- Samuel Bartels. Drivers of plant biodiversity in boreal forests. June 2015 – 2020. *Assistant Professor, University of Northern British Columbia*.
- Colin Bergeron. Carbon implications and regeneration dynamics following variable retention harvesting. July 2017 – August 2019; *Ecologist with Parks Canada in Revelstoke, B.C.*
- Kristen Whitbeck. Understory plant biodiversity in boreal mixedwood forests. March 2014 – 2015. *Professor of Forestry, Paul Smith's College, Paul Smiths, New York*.
- Stefanie Gaertner. Benchmarking natural stand structure in the boreal mixedwood. Jan. 2008 – 2011. *Head Forest Ecologist, Black Forest National Park, Germany*.

Christina Mourelle. Impacts of intensive forest management on understory plant biodiversity. June 2000 – Dec. 2003. *Teaching at a CEGEP in Montreal*.
 Barb Thomas. Management of genetic diversity in white spruce and lodgepole pine in Alberta. 1997 – 2000. *Professor (NSERC IRC), Dept. of Renewable Resources, University of Alberta*
 Margaret Schmidt. Impacts of mechanical site preparation on soil chemical properties. 1992. *Professor, Dept. of Geography, Simon Fraser University, B.C.*

EXTERNAL EXAMINER: (since 2000)

Student	University	Degree	Year
Wayne Bell	University of Guelph	PhD	2014
Kevin Kemball	University of Manitoba	PhD	2008
Kella Sadler	University of British Columbia	PhD	2007
Satu Löfman	University of Joensuu, Joensuu Finland	PhD	2006
Krystoffer Hylander	Umeå University, Umeå, Sweden	Ph.D.	2004
Glenda Samuelson	University of Calgary	PhD	2004
Katherine Stewart	Lakehead University	M.Sc.	2003

Graduate Student Committees:

I generally serve on 15 -20 different graduate student supervisory committees at any one time, and additionally serve on about ~ 5 other graduate Examining Committees per year. I have served on supervisory and examining committees for students in the Departments of Forest Science, Soil Science, Entomology, Plant Science, Botany, Zoology, Biological Sciences, Agriculture, Foods & Nutritional Sciences.

TEACHING

Current:

RenR 322/721 Forest ecosystems Fall 2014 – 2020.

RenR 299: Spring Field School Annually since 1989 under varying course names (see below):

Currently, I co-lead the vegetation sampling and ecosite classification exercises (4.5 field days). From 2010 to 2016 I was Academic Co-ordinator for the 10 day module on sampling ecological resources.

Prior:

RenR 307: Environmental Assessment Winter 2015, 2016: co-taught with D. MacKenzie (2016), D. Olefeldt (2016); 2013: module on vegetation assessment (6 contact hours)

RenR 366: Restoration Ecology Winter 2015, 2016: co-taught with D. MacKenzie

RenR 580: Biometrical Techniques in Agri-Food, Forestry & Environmental Sciences Winter 2006 - 2013 (45 – 55 students per year)

RenR 601: Forest Biology 1993, 1998 – 2003, Fall 2005 – 2007

ENCS 308: Environment & Conservation Sciences Spring Field School Spring 2003, 2004:

Developed a new vegetation exercise (2.5 field days) for this first offering of the ENCS Field School.

FOR 304: Forestry Spring Field School Spring 1989 - 2002: Taught a two day ecosite classification exercise and was “Academic Coordinator” for the 10 day “ecology / silviculture” module in 2000-2002.

FOR 522: Advanced Forest Ecology Winter 2002, Winter 1990 - 2002

REN220: Woody Plants II Winter 2001, 2002

FOR 322: Forest Ecosystems Fall 1989 - 2000

ENCS 204: Introduction to Plant Resources 1992 - 1995

FOR 372: Forestry and the Environment 1992 - 1995

FOR 451: Tree Seedling Production 1991-1995

Extension Courses:

Forest Ecology/Ecosystem Management (two day short course for forestry professionals) 1992- 1993.

Alberta Advanced Forest Management Institute: "Vegetation Dynamics and Forest Ecology" module.
1995, 1998, 1999, 2000

"Ecological Connections: The Parks Conservation Course" - Session on "Maintaining Ecological Processes", February, November 1995.

ADMINISTRATION

Current:

Editorial duties:

Editor-in-Chief: Canadian Journal of Forest Research (November 2018 – present)

Other:

Alberta Environment and Parks – Science Advisory Panel (2019 – present)

Wood Buffalo Environmental Association; Terrestrial Environmental Effects Monitoring (TEEM) - Science Advisory Team Member (2011 – present)

FORMAS – The Swedish Research Council – Review panel for The Natural Environment . Involves reviewing 45 applications, being the main presenter (rappoteur) for about 12 of those. Two day meeting in Sweden in Sept. Each year. 2014 – 2015, 2022 (virtual meeting in Fall 2022).

Prior:

University – Major Administration Positions:

Chair, Department of Renewable Resources. July 1 2016 – 2021.

Associate Dean (Research & Graduate Studies), Faculty of Agricultural, Life & Environmental Sciences (July 2009 – Aug. 2012)

Director, Field Research Office (under the Office of the Vice-President: Research) July 2008 – Sept. 2010

Associate Dean, Faculty of Graduate Studies and Research (2001 – 2004)

Associate Chair (Planning & Priorities), Dept. of Renewable Resources (1999 – 2001)

University – Committees (major):

Killam Postdoctoral Fellowship Committee, Faculty of Graduate Studies & Research. (2005-).

Killam Scholarship Committee, Faculty of Graduate Studies & Research. (1998 - 2004).

University of Alberta AASUA – Vice-President Research liaison committee (2006 - 2008).

University Teaching Program Committee (2001 – 2004, Chair 2002 - 2004)

General Faculties Council - Library Committee. (2001 – 2003)

Faculty Evaluation Committee, Faculty of Ag, For. & Home Economics (2000 – 2003)

BSc Environmental & Conservation Science Program Committee (Chair 1993-1994, Member 1995 – 1996, 2005-2009).

BSc Forestry Program Committee (1997 - 2002).

Chair, Graduate Recruitment Scholarships Committee, Faculty of Grad Studies & Research (2002-03)

Selection / Review Committees:

- Tory Research Chair
- Dean: Faculty of Law, Faculté St. Jean, Faculty of Nursing

- Chair: Departments of: Chemical & Materials Engineering, Rural Economy, Medical Microbiology, Agriculture, Food & Nutritional Sciences, Human Ecology, Biological Sciences, Sociology, Anthropology, Earth and Atmospheric Sciences, Marketing & Business Economics & Law, Electrical & Computer Engineering, Renewable Resources (twice)
- General Faculties Council (1998 - 2001).
 Graduate Scholarship Committee, Faculty of Graduate Studies & Research. (1998 - 2000).
 Challenge Grants in Biodiversity - Adjudication Panel (1995-1996; 1998 – 2000).
 Dept. of Renewable Resources. Space Review Committee Chair (1998 – 2001).
 Graduate Committee, Department of Forest Science/Renewable Resources, 1990 – 2003, 2005-2009.
 (Chair, 1991-1996; Graduate Co-ordinator 1993-1996).
 Graduate Review Task Force, Dept. of Renewable Resources. (Chair, 1997-98).
 Forest Science Student Recruitment Committee, Chair 1990-1993.
 Faculty of Agriculture and Forestry, Conservation and Environmental Science Curriculum Development Committee, 1992.
 General Faculties Council - Library Committee. 1990-1993. (Vice-Chair, 1992-1993).
 Vice-President's (Academic) Committee on Restructuring, Sub-Committee on Biological and Life Sciences. (1991-1993).
 Devonian Botanic Garden - Advisory Committee (1992-1996).

External:

Grant & Scholarship adjudication:

Natural Sciences and Engineering Research Council (Canada) – Scholarships and Fellowships Committee. 2015 - 2018
 Fonds québécois de la recherche sur la nature et les technologies (FQRNT)– Fonds Forestier-II (Program de recherche stratégique en aménagement et en environnement forestier) [Ministère des Ressources naturelles, de la Faune et des Parcs – Québec]. Grant adjudication panel (2005 - 2015)
 Natural Sciences & Engineering Research Council : Strategic Grants Program Panel A : July 2008 - 2010
 British Columbia Forest Science Program: Member of Grant Adjudication Panel (2005 - 2009)
 Alberta Ingenuity - Graduate Scholarship Selection Committee: 1999 - 2004
 Alberta Heritage – Graduate Scholarship Selection Committee: 2002, 2003, 2004
 Natural Sciences and Engineering Research Council/Forestry Canada/Industry Partnership Program - Grant Selection Panel (1993- 1995).
 Science Council of British Columbia - Forestry Grant Selection Committee (1992 - 1997).

Editorial duties:

Associate Editor: Canadian Journal of Forest Research (March 2009 – November 2018)
 Guest Associate Editor: *Forest Ecology & Management*: Handling manuscripts submitted for a Special Issue arising from the "Vegetation Indicators" session of the Ecological Society of America Annual meeting. (2005 – 2006)
 Guest Associate Editor for *Écoscience* – handling manuscripts for a Special Issue arising from the International Workshop on Disturbance Dynamics in Boreal Forests (held in Russia in August 2004). (2004 – 2005)
 Guest Associate Editor: *Canadian Journal of Forest Research*: for Special Issue presenting the proceedings from the 4th International Workshop on Boreal Forest Disturbance Dynamics. (2002 – 2003)
 Associate Editor - Canadian Journal of Botany (1995-2000).
 Editor - "NEO - the Science of Conservation and the Environment" a feature in Borealis (Quarterly magazine of the Canadian Parks and Wilderness Society) (1991 - 1994).

Other Professional contributions:

North American Forest Ecology Workshop: Co-Chair, Organization Committee (June 2017, Edmonton).
 North American Forest Ecology Workshop: Organization Committee (May 2007, Vancouver).
 Canadian Botanical Association – Conservation Committee (2006 -)

Conference Chair – 4th International Workshop on Disturbance Dynamics in Boreal Forests Disturbance Processes and Their Ecological Effects in Boreal Forests. (August 9 - 14, 2002; Prince George, British Columbia, Canada)

Director, Canadian Botanical Association (1994 - 1996).

Member - Alberta Science Hotline. Involves volunteer extension presentation to students and teachers (1994 – present.)

OTHER RESEARCH PRODUCTIVITY

INVITED TALKS: (selected, since 2000)

1. A natural disturbance-based approach to Ecosystem Management in the mixedwood boreal forest: Lessons learned from the EMEND project (with J. Spence, V. Lieffers, C. Bergeron). IUFRO Working group 1.01.08 (Ecology and Silviculture of Spruce) and Division 8 (Forest Environment) conference; Edmonton, AB. August 11 – 13, 2015. Invited plenary.
2. To morder and back: The journey towards forest restoration following oil sands mining. (with C. Powter, B. Purdy). International Union of Forest Research Organizations: 2nd Restoring Forests Conference. Oct. 14-16, 2014. Lafayette Indiana (Purdue University).
3. Restoring naturalness - understanding, acceptance and the fallacy of the omniscient ecologist. PRIFOR 2010: Northern Primeval Forests: Conservation and Management. Sundsvall, Sweden; Aug. 9-13, 2010.
4. Using natural boreal forest ecosystems as models for oil sands reclamation. (with B. Purdy, E. Lilles, S. Chang). "Reclamation and Restoration of Boreal Peatland and Forest Ecosystems: Towards a Sustainable Future". Conference. March 25 – 27, 2010, Edmonton, AB.
5. Understory plant communities in the boreal mixedwood: Pattern and process in natural and managed stands. Purdue University, West Lafayette, IN. April 15, 2008.
6. Factors influencing understory plant communities in the mixedwood boreal forest: the fire – conifer connection. University of Joensuu, Joensuu Finland, November 14, 2006. (Also given at University of Helsinki as a volunteer seminar; November 13).
7. Forest landscapes of Alberta: black trees, red trees, black oil, bright future? University of Joensuu, Joensuu Finland, November 16, 2006. (Also given at University of Helsinki as a volunteer seminar; November 13).
8. Les facteurs contrôlant la diversité et la composition du sous-bois dans la forêt boréale mélange de l'ouest canadien: une leçon provenant des paysage naturels et aménagés. Université du Québec en Abitibi-Témiscamingue. Videoconference linked to four other institutions in the Université du Québec system. March 23, 2005.
9. Composition and biodiversity of the understory plant community in the mixedwood boreal forest. Université Laval. February 3, 2005.
10. Keystone processes in boreal mixedwood regeneration and succession. Umeå University, Umeå, Sweden. May 2004.
11. Ecology and management of riparian forests around lakes in the mixedwood boreal forest: Lessons from the TROLS research project. University of British Columbia, November 2002.
12. Regeneration of white spruce following fire in the boreal mixedwood forest: a keystone process dominating mixedwood succession. Université du Québec en Abitibi-Témiscamingue. Videoconference linked to four other institutions in the Université du Québec system. October 22, 2002.
13. The regeneration niche of white spruce in the mixedwood boreal forest: keeping the mix in mixedwood. Department of Biological Sciences, University of Alberta, BOT 600 Graduate Seminar Series. March 2002.
14. Ecology and management of riparian forests in the boreal mixedwood. Groupe de recherche en écologie forestière, Université du Québec à Montréal, Oct. 2001.
15. Ecology and management of riparian forests around lakes in the mixed-wood boreal forest. University of Northern British Columbia. February 2, 2001.
16. Conserving genetic resources of lodgepole pine and white spruce in west-central Alberta: Natural patterns of variation and impacts of forest management. Department of Biological Sciences, University of Alberta. February 2000.

Talks targeted towards government and industry partners (selected):

1. Macdonald, Ellen and Colin Bergeron. 2017. EMEND project – Outcomes and lessons learn. Alberta Association of Forest Management Professionals – Technical Session; Oct. 12, 2017, Edmonton, AB.
2. Macdonald, Ellen, Samuel Bartels, Laureen Echiverri, Silvia Ronzani. 2016. Understanding spatial patterns of biodiversity at the EMEND site using wet areas mapping. Workshop: Towards the goal of environment excellence – Alberta's Wet Areas Mapping initiative at year ten. Alberta Agriculture & Forestry, March 27, 2016, Edmonton, Alberta.
3. Macdonald, Ellen, Samuel Bartels, Anna Dabros. 2016. The EMEND experiment – impacts of variable retention harvesting on plant biodiversity. Biodiversity and Forestry Workshop, Alberta Agriculture & Forestry, March 16, 2016, Edmonton, Alberta.
4. Stockdale, Chris, Ellen Macdonald, Eric Higgs. 2016. Historical disturbance regimes of southern Alberta: why understanding the past is critical to managing biodiversity into the future. Biodiversity and Forestry Workshop, Alberta Agriculture & Forestry, March 16, 2016, Edmonton, Alberta.
5. Spence, John, Jaime Pinzon, Ellen Macdonald. 2016. Variable retention harvesting and ecosystem-based management: Lesson from the EMEND project. Alberta Association of Forest Management Professionals – Technical Session; Nov. 3, 2016, Edmonton, AB.
6. Bergeron, Colin and Ellen Macdonald. 2016. The science of ecosystem management: overview of the EMEND project. Public Advisory Committee, Daishowa-Marubeni International Ltd., May 25, 2016, Peace River, Alberta.
7. Macdonald, Ellen, Nadir Erbilgin, Vic Lieffers. 2016. Beyond Beetle; Facilitated and natural regeneration of conifers in lodgepole pine forests following mountain pine beetle attack. fRIResearch Research Forum, May 11, 2016, Grande Prairie, AB.
8. Macdonald, Ellen, Steinke, Julie, Anne McIntosh, Lori Schroder, Vic Lieffers. 2016. Post-MPB forests in Alberta. What is changing at the landscape/ecosite level: what is benefiting, what is suffering? fRIResearch Research Forum, May 11, 2016, Grande Prairie, AB.
9. Facilitating ecosystem and landscape recovery and renewal: From science to practice. Canadian Land Reclamation Association – Alberta Chapter, Annual Meeting. Feb. 27, 2014; Red Deer, Alberta.
10. Criteria and indicators of resilience in reclaimed boreal forest ecosystems. Oral presentation given as part of a Seminar entitled: Resilience of reclaimed boreal forest ecosystems. Jan. 22, 2013; Edmonton, AB.
11. Restoration ecology of boreal forests after industrial disturbance – what can we learn from natural ecosystems? Seminar given as part of the School of Energy and the Environment (SEE) seminar series. Sept. 7, 2011. Edmonton, AB.
12. Effects of Mountain Pine Beetle attack on hydrology and post-attack vegetation and hydrological recovery in lodgepole pine forests in Alberta (with U. Silins, P. Pina, A. McIntosh). Foothills Research Institute Mountain Pine Beetle Ecology Workshops. Progress report given each year at their spring workshop: 2010, 2011, 2012, 2013 Edmonton, AB.
13. Ecological implications of changing the composition of mixedwood forest. Sustainable Forest Management Network Conference: Envisioning Tomorrow's Forest. April 2009, Gatineau, QC.
14. Natural regeneration of white spruce in aspen-dominated boreal mixedwoods following harvesting. (with V.J. Lieffers & David Greene). Sustainable Forest Management Network Conference: Envisioning Tomorrow's Forest. April 2009, Gatineau, QC.
15. Ecological impacts of changing the composition of mixedwood forests: Canadian Institute of Forestry / Sustainable Forest Management Network electronic lecture series: Three different one-hour long lectures, aimed at forestry professionals, each given in both English and French.
 - Macdonald, S. Ellen, T. Work, P. Drapeau, Y. Bergeron, S. Quideau, H. Chen, J. Spence, N. Lecomte: Biodiversity and tree composition in boreal mixedwoods: different roofs – different inhabitants? Nov. 26th, 2008. (80 different sites).
 - Macdonald, S. Ellen, T. Work, P. Drapeau, Y. Bergeron, S. Quideau, H. Chen, J. Spence, N. Lecomte: La composition des peuplements et la biodiversité en forêt boréal mixte : Différents toits – différents habitants ? Nov. 26th, 2008. (33 different sites). (lecture given by N. Lecomte).
 - Macdonald, S. Ellen, S. Brais, P. Comeau, N. Lecomte. Productivity and soil processes in mixed and pure boreal stands: does 1 plus 1 equal 2? Dec. 2, 2008. (88 different sites)

- Macdonald, S. Ellen, S. Brais, P. Comeau, N. Lecomte. La productivité et les processus édaphiques en forêt boréale mixte: Est-ce que 1 plus 1 égale 2 ? Dec. 2, 2008. (30 different sites) (lecture given by N. Lecomte).
 - Lecomte, Nicolas, S.E. Macdonald, H. Asselin. Mixing and unmixing of boreal mixedwoods: the past, present and the future. Dec. 10th, 2008. (90 different sites)
 - Lecomte, Nicolas, S.E. Macdonald, H. Asselin. La ségrégation et la déségrégation en forêt boréale mixte: l'étude du passé pour saisir l'avenir. Dec. 10th, 2008. (32 different sites) (lecture given by N. Lecomte).
16. Impacts of forest management on understory plant communities. *Oral presentation to* The Alberta Native Plant Council. April 2007, Calgary, AB.
 17. Growth and mortality of understory trees in the boreal mixedwood of Alberta. *Oral presentation to* the Mixedwood Management Association Workshop. December 13, 2006. Edmonton, AB.
 18. Effects of variable retention post-fire salvage logging on songbirds, woodpeckers, beetles and vegetation. *Oral presentation to* the Canadian Institute of Forestry (Rocky Mountain Section) Technical Session. February 24, 2006, Edmonton, AB.
 19. Effects of variable retention post-fire salvage logging on forest biodiversity. *Oral presentation to* the Alberta-Pacific Forest Industries Ltd. Public Advisory Task Force. February 16, 2006, Edmonton, AB.
 20. Managing riparian buffers as terrestrial reserves: Lessons from the TROLS research project. Canadian Institute of Forestry – Rocky Mountain Section, Fall Technical Session, Grande Prairie, Alberta, October 20, 2000.

Major unrefereed reports and papers: (supervised graduate students and postdocs in bold)

1. Spencer, S.A., K. Devito, S.E. Macdonald. 2016. Terrestrial and riparian organisms, lakes and streams (TROLS). *Forestry Chronicle* 92: 50-52. (Part of a Special Feature on long-term watershed research in Alberta)
2. Macdonald, S. Ellen. 2015. Chapter 6. Plot vegetation description. pp. 85-94. *In*. Assessing forest health in the Alberta Oil Sands Region. T.A. Clair & K.E. Percy (editors). Wood Buffalo Environmental Association Report #2015-03-01. 209 pp.
3. Macdonald, S. Ellen. 2015. Chapter 9. Responses of understory vegetation. pp. 134-144. *In*. Assessing forest health in the Alberta Oil Sands Region. T.A. Clair & K.E. Percy (editors). Wood Buffalo Environmental Association Report #2015-03-01. 209 pp.
4. **Lavoie**, N. M.E. Alexander, and S.E. Macdonald. 2010. Photo Guide for Quantitatively Assessing the Characteristics of Forest Fuels in a Jack Pine – Black Spruce Chronosequence in the Northwest Territories. Canadian Forest Service, Northern Forestry Centre. Information Report NOR-X419. 51 pp.
5. Macdonald, E., N. Lecomte, Y. Bergeron, S. Brais, H. Chen, P. Comeau, P. Drapeau, V. Lieffers, S. Guideau, J. Spence, and T. Work. 2010. Ecological implications of changing the composition of boreal mixedwood forests. Sustainable Forest Management Network: State of Knowledge Report. 52 pp.
6. Pyper, M. and E. Macdonald. 2010. The understory story: Variable retention impacts on vascular plants at EMEND. Sustainable Forest Management Network Research Note #65.
7. **Clason**, A. E. Macdonald and S. Haeussler. 2010. Ecosystem change at whitebark pine's northern limit. *Nutcracker Notes* (Spring/Summer 2010): 12-13.
8. **Chávez**, V., and E. Macdonald. 2010. Understory plant diversity and composition in boreal mixedwood forests. Sustainable Forest Management Network Research Note #
9. **Caners**, R., E. Macdonald, and R. Belland. 2010. Bryophyte conservation in the managed boreal mixed-wood mosaic. Sustainable Forest Management Network Research Note #63.
10. Lecomte, N., E. Macdonald, V. Lieffers and Y. Bergeron. 2010. Boreal mixedwood management: minimizing risk in a changing climate. Sustainable Forest Management Network Research Note #60. 6 pp.
11. Lecomte, N., E. Macdonald, V. Lieffers and Y. Bergeron. 2010. L'aménagement en forêt boréale mixte: pour minimiser les risques dans le cadre d'un climat en évolution. Sustainable Forest Management Network Research Note #60. 6 pp.

12. Macdonald, E., T. Work, P. Drapeau, Y. Bergeron, S. Quideau, H. Chen, J. Spence, N. Lecomte. 2010. Biodiversity and canopy composition in boreal mixedwoods: different roofs – different inhabitants? Sustainable Forest Management Network Research Note # 59. 6 pp.
13. Macdonald, E., T. Work, P. Drapeau, Y. Bergeron, S. Quideau, H. Chen, J. Spence, N. Lecomte. 2010. La composition des couverts et la biodiversité en forêt boréale mixte : différents toits – différents habitants? Sustainable Forest Management Network Research Note # 59. 6 pp.
14. **Chávez**, V., and E. Macdonald. 2009. The importance of mixed canopies for boreal understory communities. Tomorrow's Forests (Newsletter of the Sustainable Forest Management network) Fall 2009. pg 1-2
15. Lecomte, N., Macdonald, E., Brais, S. et Comeau, P. 2009. Les conditions de croissance et la productivité des peuplements en forêt boréale mixte : comment tirer profit des associations. Sustainable Forest Management Network Research Note # 46. 6 pp.
16. Lecomte, N., Macdonald, E., Brais, S. and Comeau, P. 2009. Growing conditions and tree productivity in boreal mixedwoods: hidden opportunities for forest managers. Sustainable Forest Management Network Research Note #46. 6 pp.
17. **Lavoie**, N. M.E. Alexander, and S.E. Macdonald. 2007. Fire weather, fire danger, and fire potential climatology of the Fort Providence area, Northwest Territories. Canadian Forest Service, Northern Forestry Centre. Information Report NOR-X412. 51 pp.
18. Haeussler, Sybille, Macdonald, S. Ellen, Gachet, Sophie and Bergeron, Yves. 2007. Understory and Epiphytic Vegetation as Indicators of the Ecological Integrity of Managed Forests: A synthesis of the Special Issue. *Forest Ecology and Management* 242: 1-4.
19. Bradbury, S., K. Hannah, M. Koivula, E. Macdonald, M. Norton, F. Schmiegelow, S. Song, and J. Spence. 2005. The House River fire salvage-logging project: a synthesis of study design, results and management recommendations. *Report for Alberta-Pacific Forest Industries*. 13 pp.
20. Thomas, B.R. and S. E. Macdonald. 2004. Early selection for enhanced CO₂ biofixation and growth in fast growing poplar plantations. Report for Partners: AOSTRA – Alberta Energy; Alberta-Pacific Forest Industries Inc.; Daishowa-Marubeni International Ltd.; Mobil Oil Canada; Suncor Energy Inc.; Syncrude Canada Ltd. March 16, 2004. *Project report* 17 pp.
21. Macdonald, S. Ellen. 2004. Foreward. 4th International Workshop on the Disturbance Dynamics in Boreal Forests: disturbance Processes and their ecological Effects. Canadian Journal of Forest Research 34(2). Two pages, unnumbered.
22. Macdonald, E. and C. **Mourelle**. 2004. Effects of thinning and understory retention harvest on forest structure and understory plant communities. Sustainable Forest Management Network *Final Project Report 2004*, 14 pp.
23. **Kurulok**, S. and E. Macdonald. 2004. Impacts of post-fire salvage logging on tree regeneration and plant communities in the mixedwood boreal forest of Alberta. Sustainable Forest Management Network *Final Project Report 2004*, 20 pp.
24. **Stuart-Smith**, J., B. Wilson, R. Walker, and E. Macdonald. 2002. Conserving whitebark pine in the Canadian Rockies. *Research Links (Parks Canada)* 10: 11, 14-15.
25. Harper, K. & S.E. Macdonald. 2002. The critical values program for assessing edge influence. "Technological Tools" section, Bulletin of the Ecological Society of America 83: 61-62.
26. **MacIsaac**, D., E. Macdonald, and P. Comeau. 2002. Spatial aspects of boreal mixedwood succession and stand dynamics. Proceedings of the Sustainable Forest Management Network Conference, Edmonton, AB, Nov. 13-15, 2002. pp. 83-88. *Oral presentation and published paper*.
27. **Mourelle**, C., E. Macdonald, B. Dankert and M. Major. 2002. Stand structure and plant diversity under two forest management practices: Salvage thinning and understory protection in the Canadian western boreal. Proceedings of the Sustainable Forest Management Network Conference, Edmonton, AB, Nov. 13-15, 2002. pp. 154-159. *Oral presentation and published paper*.
28. Macdonald, S.E., V. **Peters**, B.G. Purdy, and M.R.T. Dale. 2001. Natural regeneration of white spruce following natural disturbance in the western boreal forest. Sustainable Forest Management Network *Final Project Report 2001-13*. 12 pp.
29. Macdonald, S.E. L. **Cuthbertson**, B. Frey, T. **Fenniak**, L. **Lazaruk**, S. Kembell, S. **Mills**, V. Lieffers, M. Dale, K. Mallett, A. Munson, D. Vitt. 2001. Pattern and process in the boreal forest understory. Sustainable Forest Management Network *Final Project Report 2001-14*. 41 pp.
30. Hodgetts, R., A. Brown, C. Clark, E. Macdonald, M. Aleksuk, and D. Khasa. 1999. Development of microsatellite markers for white spruce (*Picea glauca*) and related species. Final Report to the Manning Diversified Forest Products Research Trust. 26 pp.

31. Macdonald, S.E., B.R. **Thomas**, and D. Cherniawsky. 1999. Impacts of forest management on genetic diversity of lodgepole pine. Final Report to the Manning Diversified Forest Products Research Trust. 37 pp.
32. Macdonald, S.E., B.R. **Thomas**, M. **Hicks**, D.L. Adams and R.B. Hodgetts. 1998. Impacts of forest management on genetic diversity of lodgepole pine: Assessment using DNA-based molecular markers. Final Report, Foothills Model Forest, Project 302-110. 19 pp.
33. Macdonald, S.E., B.R. **Thomas**, M. **Hicks**, D.L. Adams and R.B. Hodgetts. 1998. Impacts of forest management on genetic diversity of lodgepole pine: Assessment using DNA-based molecular markers. Final Report. Alberta Environmental Protection and Enhancement Fund. 17 pp.
34. **Stuart-Smith**, G.J. and S.E. Macdonald. 1996. Population genetics of whitebark pine in the Canadian Rockies. *Nutcracker Notes* 7: 11-12.
35. Macdonald, S.E., M.G. **Schmidt**, and R.L. Rothwell. 1995. Impacts of different methods of mechanical site preparation on foliar nutrients of planted white spruce seedlings. Canada-Alberta Partnership Agreement in Forestry. Report. Canadian Forest Service, Northern Forestry Centre, Edmonton, AB. 14 pp.
36. **Schmidt**, M., S. E. Macdonald and R. L. Rothwell. 1995. Impacts of harvesting and mechanical site preparation on soil chemical properties in the mixed-wood boreal forest. Report to Alberta Forest Development Research Trust Fund.
37. Macdonald, S.E. 1992. Seedling quality during the nursery to outplanting transition. Research Report to the Alberta Forest Service.
38. Purdy, B.G. and S.E. Macdonald. 1991. The status of *Stellaria arenicola* (sand stitchwort) a vulnerable species in Canada. Report to the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).
39. Macdonald, S.E. with M.D. Macdonald. 1991. Life in a northern desert. *Borealis Magazine*. Summer 1991. pp. 14-17.

SELECTED CONFERENCE PRESENTATIONS AND OTHER TALKS: (SINCE 2000)

1. Macdonald, Ellen, Asko Löhmus, Claes Bernes, Kaisa Junninen, Biljana Macura, Jörg Müller, Jennie Sandström, Bengt-Gunnar Jonsson. 2018. Can manipulation of ungulate herbivory facilitate biodiversity conservation for forest vegetation and invertebrates? European Congress of Conservation Biology, June 12 – 15, 2018, Jyväskylä, Finland. (I was also co-author on three other presentations in a Special Session: To manage or not to manage? Effects of active interventions on forest biodiversity.)
2. **Dias de Andrade Silva**, Raiany, Anne McIntosh, Ellen MacDonald, Kerri Widenmaier. 2018. Restoration and enhancement of degraded trail crossings of wet and riparian areas in Blue Rapids Provincial Recreation Area, Alberta. 7th Annual Alberta Parks Forum – Collaboration for Change. March 14 – 17, 2018. Canmore, AB.
3. Schroeder, L., Ellen Macdonald, Joyce Gould. 2018. Can wet areas mapping (WAM) be used to predict invasive species in Dry Mixed Grass prairie? 61st Annual Symposium of the International Association for Vegetation Science. July 22 -27, 2018, Bozeman, Montana.
4. Macdonald, E., L. Schroeder, J. Steinke, V. Lieffers. 2017. Beyond beetle: Natural regeneration after Mountain Pine Beetle outbreaks in Alberta. 11th North American Forest Ecology Workshop. June 19 – 22, 2017, Edmonton, AB.
5. Landhäusser, S.M., E. Macdonald, V.J. Lieffers. 2017. Drivers of spatial and temporal patterns in vegetation during spontaneous early colonization of boreal reclamation sites. 11th North American Forest Ecology Workshop. June 19 – 22, 2017, Edmonton, AB.
6. **Echiverri**, L., E. Macdonald, J. Stadt, B. White. 2017. The effect of harvesting on the relationship between Depth-to-Water values and understory vegetation. 11th North American Forest Ecology Workshop. June 19 – 22, 2017, Edmonton, AB.
7. **Steinke**, J., E. Macdonald, A. McIntosh, L. Schroeder. 2017. Effects of mountain pine beetle attacks on understory vegetation in lodgepole pine forests in Western Alberta. 11th North American Forest Ecology Workshop. June 19 – 22, 2017, Edmonton, AB.
8. **Bartels**, S.F., E. Macdonald. 2017. Changes in bryophyte diversity and composition along a soil wetness gradient in managed boreal forests assessed using topographic wetness index. 11th North American Forest Ecology Workshop. June 19 – 22, 2017, Edmonton, AB.

9. **Franklin**, C.M.A., S.E. Macdonald, S.E. Nielsen. 2017. Effects of prescribed burns and partial harvesting on understory vegetation in boreal mixedwood forests. 11th North American Forest Ecology Workshop. June 19 – 22, 2017, Edmonton, AB.
10. **Stockdale**, C., E. Macdonald, M. Flannigan. 2017. A century of landscape change in the southern Rocky Mountains and Foothills of Alberta. 11th North American Forest Ecology Workshop. June 19 – 22, 2017, Edmonton, AB.
11. **Stockdale**, C., N. McLoughlin, M. Flannigan, E. Macdonald. 2017. Using historic landscape vegetation structure for ecological restoration: effects on burn probability in the Bob Creek Wildland. 11th North American Forest Ecology Workshop. June 19 – 22, 2017, Edmonton, AB.
12. **Bergeron**, C., J. Pinzon, E. Macdonald, J. Spence. 2017. Using ecological memory to restore forest ecosystem resilience. IUFRO 3rd Restoring Forests Conference: Regeneration and ecosystem function for the future. Sept. 12 – 14th, 2017. Lund, Sweden.
13. **Steinke**, J., S. Ellen Macdonald, Anne McIntosh, Lori Schroeder. 2017. How do mountain pine beetle attacks impact understory vegetation in lodgepole pine forests in novel areas in west-central Alberta? Canadian Society for Ecology and Evolution, Victoria, BC, 7-11 May 2017
14. **Schroeder**, Lori, Ellen Macdonald and Joyce Gould. 2016. Can Wet Areas Mapping be used to predict invasive species in Dry Mixed Grass Prairie? 11th Prairie Conservation and Endangered Species Conference; February 16th to 18th, 2016; Saskatoon, Saskatchewan.
15. **Franklin**, Caroline and Ellen Macdonald. 2016. Responses of understory vegetation to green-tree retention harvesting in boreal forest. Canadian Society for Ecology and Evolution Annual Meeting; July 7 – 11, St. John's Nfld.
16. **Echiverri**, Laureen and Ellen Macdonald. 2016. Exploring the use of the Wet Areas Mapping Tool to predict vascular understory diversity. Canadian Society for Ecology and Evolution Annual Meeting; July 7 – 11, St. John's Nfld.
17. **Echiverri**, Laureen and Ellen Macdonald. 2016. Exploring the use of the Wet Areas Mapping Tool to predict vascular understory diversity. Ecological Society of America Annual General Meeting, August 7 – 12, 2016; Ft. Lauderdale, FL.
18. **Bartels**, Samuel, Ellen Macdonald and Scott Nielsen. 2016. Bryophyte abundance, diversity and composition following variable-retention harvesting in boreal mixedwood forest: Evidence from the EMEND study. Ecological Society of American Annual Meeting, Ft. Lauderdale, FL. Aug. 7 – 12, 2016.
19. Macdonald, S. Ellen, Phil Comeau. 2015. Managing canopy composition in boreal mixedwood forests: effects on understory plant communities. IUFRO Working group 1.01.08 (Ecology and Silviculture of Spruce) and Division 8 (Forest Environment) conference; August 11 – 13, 2015. Edmonton, AB. *Oral presentation*
20. **MacIsaac**, Dan, Phil Comeau, Ellen Macdonald. 2015. The effect of physical interactions and understory light conditions on long-term stand dynamics in white spruce and aspen boreal mixedwoods. IUFRO Working group 1.01.08 (Ecology and Silviculture of Spruce) and Division 8 (Forest Environment) conference; August 11 – 13, 2015. Edmonton, AB. *Oral presentation*
21. **Gärtner**, Stefanie, Phil Comeau*, Mike Bokalo, Ellen Macdonald. 2015. Natural regeneration of *Picea glauca* in the mixedwood boreal forest of western Canada. IUFRO Working group 1.01.08 (Ecology and Silviculture of Spruce) and Division 8 (Forest Environment) conference; August 11 – 13, 2015. Edmonton, AB. (*presenter). *Oral presentation*
22. Macdonald, S. Ellen, Mark Fenn, Mervyn Davies, Benoit Gendreau-Berthiaume. 2015. Forest vegetation responses to atmospheric deposition associated with oil sands mining operations. North American Forest Ecology Workshop. June 14 – 18, 2015. Veracruz, Mexico. *Oral presentation*
23. **Hoffman**, Elizabeth, Simon Landhäusser, Ellen Macdonald. 2015. Temporal and spatial development of vegetation community patterns on reclaimed boreal forest sites using salvaged forest floor material. North American Forest Ecology Workshop. June 14 – 18, 2015. Veracruz, Mexico. *Oral presentation*
24. Macdonald, S. Ellen, Mark Fenn, Mervyn Davies, Benoit Gendreau-Berthiaume. 2015. Forest vegetation responses to atmospheric deposition associated with oil sands mining operations. Botany 2015, July 25-29, 2015. Edmonton, AB. *Oral presentation*
25. **Hoffman**, Elizabeth, Simon Landhäusser*, Ellen Macdonald. 2015. Development over time of vegetation composition and spatial pattern on reclaimed mine sites using salvaged forest floor material. (*presenter). Society for Ecological Restoration – 6th World Conference on Ecological Restoration; August 23 – 27, 2015; Manchester, U.K. *Poster presentation*

26. **Bijman**, Alison, Simon Landhausser, Ellen Macdonald. 2015. Vegetation development on poor reclamation sites: Impact of tree seedling presence, biochar and fertilizer amendments. Botany 2015, July 25-29, 015. Edmonton, AB. *Oral presentation*
27. **Pedersen**, Jennine, Scott Nielsen, S. Ellen Macdonald. 2015. Assisted Migration to Mitigate the Effects of Climate Change for Rare and Range-Restricted Plants. Botany 2015, July 25-29, 015. Edmonton, AB. *Oral presentation*
28. **Stockdale**, Chris, Claudio Bozzini, Ellen Macdonald, Eric Higgs. 2014. Georeferencing oblique landscape photos to evaluate century-scale changes in the structure of Rocky Mountain and foothills landscapes. International Cartographic Association, Mountain Cartography Workshop. Banff AB, April 25, 2014. *Oral presentation*
29. **Stockdale**, Chris, Mike Flannigan, Ellen Macdonald, Eric Higgs. 2014. Using Historical Photographs to Model Changes in Burn Probability of the Landscape Since European Settlement of Southern Alberta Rocky Mountains and Foothills. International Association of Wildland Fire/ Association of Fire Ecology: Large Fire Conference. Missoula MT. May 19-23. *Oral presentation*
30. **Stockdale**, Chris, Claudio Bozzini, Ellen Macdonald, Eric Higgs. 2014. Digital Monoplotting to Extract Vector and Raster Data From Oblique-Angle Terrestrial Photographs. GeoAlberta GIS Users Conference. Calgary AB. October 27-29. *Oral presentation*
31. **Göhing**, Jeannine, E. Macdonald, E. Bork, Barb R. Thomas. 2014. Above- and belowground effects of four establishment systems on hybrid poplar tree performance, understory vegetation and resource availability. International Poplar Symposium, July 21 – 23, 2014; Vancouver, B.C. *Oral presentation*
32. **Gelderman**, M., S.E. Macdonald, J. Gould. 2013. Pattern and process of whitebark pine regeneration - restoring an endangered species. Alberta Recreation and Parks Association – 2013 Parks Forum: Parks, Landscapes & Open Spaces. March 14 – 16, 2013; Canmore, AB. *Poster presentation*
33. **Gelderman**, M., Macdonald, S.E., Gould, J. 2013. Biophysical drivers of whitebark pine regeneration – the key to restoring a species. Western International Forestry Disease Work Conference. Waterton, Alberta, Canada. October 8, 2013. *Poster presentation*
34. **Gendreau-Berthiaume**, B., S.E. Macdonald and John Stadt. 2013. Understory communities in mature lodgepole pine stands: Are they stable and what are the driving processes? Centre d'Etudes des Forêts. *Poster presentation*
35. Macdonald, S. Ellen, Yves Bergeron, H.Y.H. Chen, N.C. Kenkel, A.L. Leduc. 2013. Boreal mixedwoods stand dynamics: ecological processes underlying a diversity of expressions. North American Forest Ecology Workshop : Piecing Together the Fragments. June 16 – 20, 2013. Bloomington, Indiana. *oral presentation*
36. Macdonald, S.E., J. Pinzon, E. Bayne, F. Schmiegelow, J. Spence, T. Work. 2013. Do boreal mixedwood forests support higher biodiversity? North American Forest Ecology Workshop : Piecing Together the Fragments. June 16 – 20, 2013. Bloomington, Indiana. *oral presentation*
37. **Henkel-Johnson**, D., Macdonald, S.E., Bork, E.W. & Thomas, B.R. 2013. Influence of weed composition, abundance, and spatial proximity on hybrid poplar growth. North American Forest Ecology Workshop : Piecing Together the Fragments. June 16 – 20, 2013. Bloomington, Indiana. *oral presentation*
38. **Gendreau-Berthiaume**, Benoit, S.E. Macdonald and John Stadt. 2013. Stand dynamics of mature lodgepole pine stands of western Alberta, Canada in the absence of stand replacing fire: evidence from long-term permanent plots. North American Forest Ecology Workshop : Piecing Together the Fragments. June 16 – 20, 2013. Bloomington, Indiana. *oral presentation*
39. **Göhing**, J., Macdonald, S.E., Bork, E.W. & Thomas, B.R. 2013. What does it take to make plantation forestry successful? A comparison of four establishment systems. North American Forest Ecology Workshop : Piecing Together the Fragments. June 16 – 20, 2013. Bloomington, Indiana. *oral presentation*
40. Thomas, Barb, David Kamelchuk, S.E. Macdonald, Richard Krygier and Bobby Hu. 2013. Screening *Populus balsamifera* clones for use in reclamation on challenging sites. 13th North American Agroforestry Conference. June 19-21, 2013. Charlottetown, P.E.I. *oral presentation*
41. **Goehing**, Jeannine, S.E. Macdonald, Edward Bork, Barb Thomas. 2013. "What does it take to make plantation forestry successful? A comparison of alternative establishment systems on hybrid poplar performance." 13th North American Agroforestry Conference. June 19-21, 2013. Charlottetown, P.E.I. *oral presentation*
42. **McIntosh**, A.C. and S.E. Macdonald. 2013. The dynamics of understory and below-ground communities in lodgepole pine forests after simulated mountain pine beetle red attack in a novel

- landscape. Ecological Society of America 98th Annual Meeting. August 4-9, 2013; Minneapolis, MN. *Oral presentation*
43. Landhausser, S.L. and S.E. Macdonald. 2013. Rebuilding resilient boreal forest ecosystems after oil sands mining. 5th World Conference on Ecological Restoration; Society for Ecological Restoration. Oct. 6-11, 2013, Madison, Wisconsin. *Oral presentation*
 44. **McIntosh**, Anne C. and S.E. Macdonald. 2013. Potential for lodgepole pine regeneration after mountain pine beetle attack in novel habitat. 16th International Boreal Forest Research Association (IBFRA) Conference; Oct. 7-10, 2013; Edmonton, Alberta;
 45. **Bakker**, N., S.E. Macdonald & Jari Kouki. 2013. How do alternative forest management systems impact natural tree regeneration in the European northern boreal forest? 16th International Boreal Forest Research Association (IBFRA) Conference; Oct. 7-10, 2013; Edmonton, Alberta.
 46. MacIsaac, D., P. Comeau and E. Macdonald. 2013. Impacts of physical abrasion by aspen on long-term growth of understory white spruce in Boreal Mixedwoods. 16th International Boreal Forest Research Association (IBFRA) Conference; Oct. 7-10, 2013; Edmonton, Alberta.
 47. **Gendreau-Berthiaume**, Benoit, S. E. Macdonald and J. Stadt. 2013. *Stand dynamics of mature lodgepole pine stands of western Alberta, Canada in the absence of stand replacing fire: evidence from long-term permanent plots*. 16th International Boreal Forest Research Association (IBFRA) Conference; Oct. 7-10, 2013; Edmonton, Alberta. *Poster presentation*
 48. Harper, K. A., A.U. Mallik, S.E. Macdonald, K.J. Stewart, P.-A. Esseen, K. Hylander, B.-G. Jonsson, P. Drapeau, Y. Bergeron, D. Lesieur. 2012. Understanding Edge Influence on Vegetation in Boreal Forests. 4th International EcoSummit: Ecological Sustainability. Restoring the planet's ecosystem services. Sept. 30 – Oct. 5, 2012. Columbus, Ohio, USA. *Oral presentation*.
 49. Gould, J. and S.E. Macdonald 2012. Health and regeneration of whitebark pine in Alberta. Whitepark Pine Ecosystem Foundation meeting, Sept., 2012; Kimberley, B.C. *oral presentation*
 50. **Stockdale**, C., S.E. Macdonald, M. Flannigan. 2012. Historical Ecology and Changes in Burn Probability of the Southern Alberta Rocky Mountains, AD 1900-2010. Wildland Fire Canada Conference: Managing Fire in Changing Times. October 2-4, 2012. Kananaskis, Alberta
 51. **McIntosh**, A., Macdonald, E. Gundale, M. 2012. From native to non-native: The influence of species identity and regional factors on ecosystem processes and properties following the introduction of lodgepole pine to northern Sweden. Ecological Society of America 97th Annual Meeting; August 5-10, 2012; Portland, OR, USA *Oral presentation*
 52. **Gärtner**, S., Macdonald, E., Bokalo, M., Stadt, K., Comeau, P. 2012. Similarities and differences between natural post-fire and post-harvest regeneration on upland sites in Alberta: what does this mean for the future? Boreal Mixedwoods 2012: Ecology and Management for Multiple Values. June 17 – 20, 2012; Edmonton, AB. *Oral presentation*
 53. Liefers, V.J., Macdonald, E., Grover, G., Solarik, K., **Martin-DeMoor**, J., **Gärtner**, S. 2012. Natural (and inexpensive) means of regenerating boreal mixedwood forests. Boreal Mixedwoods 2012: Ecology and Management for Multiple Values. June 17 – 20, 2012; Edmonton, AB. *Oral presentation*
 54. **MacIsaac**, D., Comeau, P., Macdonald, E. 2012. The effect of physical interactions and understory light conditions on long-term stand dynamics in white spruce and aspen boreal mixedwoods. Boreal Mixedwoods 2012: Ecology and Management for Multiple Values. June 17 – 20, 2012; Edmonton, AB. *Oral presentation*
 55. **Liu**, J., MacKenzie, D., Macdonald, E. 2012. Effect of black carbon additions in land reclamation soils on aspen growth and soil microbial activities. Helmholtz-Alberta initiative, 3rd Annual Meeting, May 10, 2012; Edmonton, AB. *Poster presentation*
 56. **Gärtner**, S., Bokalo, M., Stadt, K., Macdonald, E., Comeau, P. 2011. Post-fire regeneration in western Canadian boreal mixedwoods. 41st Annual Conference of the Ecological Society of Germany, Austria and Switzerland (GfÖ) in Oldenburg, 5.-9. September 2011. *Oral presentation*
 57. Spence, J., Macdonald, E., Volney, J., Liefers, V. Quideau, S. 2011. The value of partial-harvesting experiments to inform natural disturbance-based management: From EMEND to EMIND. 7th International Workshop on Disturbance Dynamics in Boreal Forests. May 29 – June 3, 2011. Saguenay, Quebec. *Oral presentation*
 58. **McIntosh**, A.C.S. and Macdonald, E. 2011. Mountain pine beetle moves East: responses of vegetation and below-ground dynamics to simulated mountain pine beetle red attack in a novel landscape. 7th International Workshop on Disturbance Dynamics in Boreal Forests. May 29 – June 3, 2011. Saguenay, Quebec. *Oral presentation*

59. **McIntosh**, A.C.S. and Macdonald, E. 2011. Effects of simulated Mountain Pine Beetle on vegetation and below-ground communities in lodgepole pine forests of western Alberta, Canada. North America Forest Ecology Workshop June 19 – 23, 2011. Roanoke, Virginia. *Oral presentation*
60. Volney, J., John Spence, Jim Witiw, Ellen Macdonald, Victor Lieffers, Barbara Kishchuk, David Langor. 2011. EMEND: From Research to Practice. Seminar as part of a symposium on global perspective of variable retention cutting. Royal Swedish Academy of Agriculture and Forestry. *Oral presentation*
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Affiliations:

Canadian Institute of Forestry
 Canadian Botanical Association
 Canadian Society of Ecology and Evolution

Ecological Society of America
Society for Conservation Biology
Society for Ecological Restoration
Alberta Association of Forest Management Professionals (Associate member)