

# Matthew Carlson, M.Sc.

ALCES Group  
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## Qualification Highlights

- Ecologist with 15 years of experience applying conservation biology, statistics, and scenario analysis to inform land-use planning and ecosystem management.

## Education

- Master of Science - Conservation Biology (2001), University of Alberta – Edmonton, Alberta
- Bachelor of Science – Environmental Science – Honours (1997), University of Guelph – Guelph, Ontario

## Employment

- Ecologist, Integral Ecology Group, 2018
- Ecologist, ALCES Group, 2004-present
- Ecologist, Canadian Boreal Initiative, 2004-2013
- Research Coordinator, University of Alberta, 2001-2003

## Panels and Boards

- Expert Panel on Integrate Natural Resource Management (Council of Canadian Academies)
- Vice President of the Alberta Tomorrow Foundation Board of Directors

## Selected Publications, Reports, and Conferences

Carlson, M., R.J. MacDonald, and M. Chernos. 2018. Watershed Simulation Tool – Methods and Outcomes for the Bow River Basin. Submitted to the Bow River Basin Council.

Stralberg, D., A. Camfield, M. Carlson, C. Lauzon, A. Westwood, N. Barker, S. Song, and F. Schmiegelow. In review. Strategies for identifying priority areas for passerine conservation in Canada's boreal forest. *Avian Conservation and Ecology*.

Rowland, E.L., and Carlson, M. 2018. Assessing and Projecting Change. In: *Drivers of Landscape Change in the Northwest Boreal Region of North America: Impacts on Natural Resources, Ecosystems and Communities*. Northwest Boreal Landscape Conservation Cooperative. In Press.

Chetkiewicz, C-L B., M. Carlson, C.M. O'Connor, B. Edwards, F.M. Southee, and M. Sullivan. 2017. Assessing the Potential Cumulative Impacts of Land Use and Climate Change on Freshwater Fish in Northern Ontario. *Wildlife Conservation Society Canada Conservation Report No. 11*.

Carlson, M. 2016. Greater Capital Region Scenario Analysis. In: *Be Ready, or Be Left Behind*. Report of the Advisory Panel on Metro Edmonton's Future. Prepared for the Metro Mayors Alliance. Available online: [https://edmontonmetropanel.ca/wp-content/uploads/2016/06/Advisory\\_Panel\\_Metro\\_REPORT.pdf](https://edmontonmetropanel.ca/wp-content/uploads/2016/06/Advisory_Panel_Metro_REPORT.pdf).

Carlson, M., J. Quinn, and B. Stelfox. 2015. Exploring Cumulative Effects of Regional Urban Growth Strategies: A Planning Scenario Case Study from the Calgary Region of Western Canada. *International Society of City and Regional Planners (ISOCARP) Review* 11.

- Carlson, M., and D. Browne. 2015. The Future of Wildlife Conservation and Resource Development in the Western Boreal Forest. Canadian Wildlife Federation, Kanata, ON.
- Carlson, M., J. Wells and M. Jacobson. 2015. Balancing the relationship between protection and sustainable management in Canada's boreal forest. *Conservation and Society* 13(1): 13-22.
- Quinn, M.S., M.E. Tyler, E. Ajaero, J. Arvai, M. Carlson, et al. 2015. Landscape Impacts of Hydraulic Fracturing Development and Operations on Surface Water and Watersheds. Prepared for the Canadian Water Network. Institute for Environmental Sustainability, Mount Royal University, Calgary, AB.
- Carlson, M., et al. 2014. ALCES Online: Web-delivered scenario analysis to inform sustainable land-use decisions. In: D.P. Ames, N.W.T. Quinn and A.E. Rizzoli (Eds.). *Proceedings of the 7th International Congress on Environmental Modelling and Software*. June 2014, San Diego, California.
- Carlson, M. and B. Stelfox. 2014. Alberta oil sands development and risk management of Canadian boreal ecosystems. In: J.E. Gates, D.L. Trauger and B. Czech (Eds.) *Peak Oil, Economic Growth, and Wildlife Conservation*. Springer, New York, New York.
- Mahon, C.L., E.M. Bayne, P. Solymos, S.M. Matsuoka, M. Carlson, E. Dzus, F.K.A. Schmiegelow, and S.J. Song. 2014. Does expected future landscape condition support proposed population objectives for boreal birds? *Forest Ecology and Management* 312: 28-39.
- Chetkiewicz, C. and M. Carlson. 2014. Addressing the Cumulative Effects of Development in Ontario's Far North, Canada. 27th International Congress for Conservation Biology, July 13-16, 2014, Bozeman, Montana.
- Browne, D.R., and M. Carlson. Conservation Planning in Canada's Western Boreal Forest: Modeling and Communicating Cumulative Effects of Large Scale Resource Development. 26th International Congress for Conservation Biology, July 21-25, 2013, Baltimore, Maryland.
- Gunn, A., Johnson, C. J., J. S. Nishi, C. J. Daniel, D. E. Russell, M. Carlson, and J. Z. Adamczewski. 2011. Understanding the cumulative effects of human activities on barren-ground caribou. In: P. R. Krausman, L. K. Harris (eds.). *Cumulative Effects in Wildlife Management: Impact Mitigation*. CRC Press.
- Carlson, M., R. Mitchell, and L. Rodriguez. 2011. Scenario analysis to identify viable conservation strategies in Paraguay's imperiled Atlantic Forest. *Ecology and Society* 16(3).  
<http://www.ecologyandsociety.org/vol16/iss3/art8/>.
- Carlson, M., J. Chen, S. Elgie, C. Henschel, A. Montenegro, N. Roulet, N. Scott, C. Tarnocai, and J. Wells. 2010. Maintaining the role of Canada's forests and peatlands in climate regulation. *Forestry Chronicle* 86(4).
- Carlson, M., et al. 2010. Informing regional planning in Alberta's oilsands region with a land-use simulation model. In: D.A. Swayne, W. Yang, A.A. Voinov, A. Rizzoli and T. Filatova (Eds.). *Proceedings of the 2010 International Congress on Environmental Modelling and Software*. July 2010, Ottawa, Ontario.
- Carlson, M., E. Bayne, and B. Stelfox. 2009. Assessing the future wildlife impacts of conservation and development in the Mackenzie Watershed. In: T.D. Rich, C. Arizmendi, D.W. Demarest and C. Thompson (Eds.). *Proceedings of the 4<sup>th</sup> International Partners in Flight Conference*. February 13-16 2008, McAllan, Texas. Partners in Flight.
- Carlson, M. and B. Stelfox. 2009. Integrated Resource Management and Planning. In: R.J. Hudson (Ed.), *Animal and Plant Productivity, in Encyclopedia of Life Support Systems (EOLSS)*. Developed under the Auspices of the UNESCO, Eolss Publishers, Oxford, UK. URL: [www.eolss.net](http://www.eolss.net).
- Carlson, M. and F. Schmiegelow. 2002. Cost-effective sampling design applied to large-scale monitoring of boreal birds. *Conservation Ecology* 6(2): 11. [online] URL: <http://www.consecol.org/vol6/iss2/art11>