

Matthew Carlson

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QUALIFICATION HIGHLIGHTS

- Ecologist applying scenario analysis and statistics to explore resource management issues.
- Effective communicator of ecosystem management concepts to a variety of audiences.

POST SECONDARY EDUCATION

Master of Science - Conservation Biology (2001)

University of Alberta – Edmonton, Alberta

- Thesis: Cost Effective Sampling Design for Large-scale Avian Monitoring
- Recipient of National Science and Engineering Research Council (NSERC) Scholarship.

Bachelor of Science – Environmental Science – Honours (1997)

University of Guelph – Guelph, Ontario

- Major: Environmetrics
- Graduated with distinction.

RELEVANT EMPLOYMENT EXPERIENCES

Landscape Ecologist

January 2004 – present

ALCES Group – Ottawa, ON

- Develops and applies simulation models to explore the future consequences of land use in diverse ecosystems
- Synthesizes diverse information to develop conceptual ecosystem models and state of the ecosystem assessments

Ecologist

February 2004 – present

Canadian Boreal Initiative – Ottawa, ON

- Advises a national conservation organization on matters related to conservation biology.
- Articulates “state of the science” with respect to key boreal issues.

Research Coordinator

January 2001 – June 2003

Adaptive Management Experiment Team, University of Alberta – Edmonton, AB

- Coordinated and contributed to research investigating the effects of land use in northeastern Alberta.

Research Associate

May 1997 – December 1997

KBM Forestry Consultants – Thunder Bay, ON

- Audit Secretariat for Independent Forest Audits of Management Units in Ontario.

REFERENCES

- Available upon request

PUBLICATIONS AND REPORTS

i) Peer reviewed contributions

- 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/>.
- 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., 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., T. Antoniuk, D. Farr, S. Francis, K. Manuel, J. Nishi, B. Stelfox, M. Sutherland, C. Yarmoloy, C. Aumann, and D. Pan. 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 4th 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 UNESCP, Eolss Publishers, Oxford, UK. URL: www.eolss.net.
- Carlson, M. and W.A. Kurz. 2007. Approximating natural landscape pattern using aggregated harvest. *Canadian Journal of Forest Research* 37(10): 1846-1853.
- 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>

ii) Other contributions

- Badiou, P., S. Boutin, M. Carlson, M. Carveau, P. Drapeau, J. Jacobs, C. Johnson, J. Kerr, M. Manseau, P. McLoughlin, G. Orians, S. Pimm, P. Raven, D. Roberts, T. Root, N. Roulet, J. Schaefer, D. Schindler, M. St-Laurent, J. Stritholt, N. Turner, A. Weaver, and J. Wells. 2011. Keeping Woodland Caribou in the Boreal Forest: Big Challenge, Immense Opportunity. International Boreal Conservation Science Panel.
- Carlson, M. 2011. Cumulative Effects Assessment for Alberta Pacific Forest Industries. Report prepared for Alberta Pacific Forest Industries.
- Carlson, M. 2010. Applying a systems approach to inform society's search for sustainability. 2010 isee User Conference, Providence, Rhode Island.
- ALCES Group. 2010. Northwest Saskatchewan Sustainable Development Plan ALCES III Land-Use Scenario Modelling. Report prepared for Saskatchewan Ministry of Environment.
- Carlson, M. 2010. Simulated Response of Barred Owl Habitat to Forestry in the Alberta Pacific Forest Management Agreement Area. Report prepared for Alberta Pacific Forest Industries.

- Daniels, C., D. Russell, and M. Carlson. 2009. Modelling the Effects of Development on the Bathurst Caribou Herd. Report prepared for Department of Environmental and Natural Resources, Government of the Northwest Territories.
- Carlson, M., J. Wells, D. Roberts. 2009. The Carbon the World Forgot: Conserving the Capacity of Canada's Boreal Forest Region to Mitigate and Adapt to Climate Change. Canadian Boreal Initiative and Boreal Songbird Initiative.
- Carlson, M. and D. Farr. 2009. Ecological Representation Strategy for Conservation Areas in the Northeast Regional Plan. Report prepared for Alberta Ministry of Environment.
- Carlson, M. 2008. Baptiste Lake State of the Watershed Report. Report prepared for the Baptiste Lake Watershed Stewardship Group.
- Carlson, M. 2008. The Boreal Conservation Framework: A balanced conservation vision for Canada's Boreal region (presentation). Workshop to Explore Relationships between Protected Areas and Sustainable Forest Management, January 22-23 2008, Ottawa ON. Sustainable Forest Management Network.
- Carlson, M., E. Bayne, and B. Stelfox. 2007. Seeking a Balance: Assessing the Future Impacts of Conservation and Development in the Mackenzie Watershed. Canadian Boreal Initiative, Ottawa, ON.
- Carlson, M., E. Bayne, and B. Stelfox. 2007. Future conservation and development in the Mackenzie Watershed. Presentation to the Joint Review Panel for the Mackenzie Gas Project, September 28 2007, Yellowknife, NT.
- Carlson, M., and D. Farr. 2007. Conceptual Ecosystem Models for Monitoring the State of Ecological Integrity in Pukaskwa National Park. Report prepared for Parks Canada.
- Carlson, M. and B. Stelfox. 2007. The Triad Approach: A Strategy for Sustainability in the Regional Municipality of Wood Buffalo. Report prepared for the Cumulative Environmental Management Association.
- Carlson, M. 2007. A Comparison of Land Use Options for the Mbaracayu Biosphere Reserve, Paraguay. Report prepared for the Alberta Research Council.
- Dobbie, T., T. McFadyen, P. Zorn, J. Keitel, M. Carlson. 2007. Point Pelee National Park of Canada State of the Park Report. Parks Canada.
- Carlson, M., and D. Farr. 2006. Conceptual Ecosystem Models for Monitoring the State of Ecological Integrity in St. Lawrence National Park. Report prepared for Parks Canada.
- Carlson, M., D. Farr, and B. Stelfox. 2006. Potential Measures of Ecological Integrity in Canada's Mountain Parks. Report prepared for Parks Canada.
- Carlson, M. 2006. Developing and applying knowledge to support conservation of Canada's boreal region (presentation). Midi de la Foresterie Series. October 17, Universite du Quebec en Abitibi-Temiscamingue.
- Carlson, M. 2006. Computer simulation teaches sustainable development. ATA Magazine 87(3).
- Carlson, M. 2006. A computer simulation game to teach sustainable development (presentation). ForestEDWest: Western Canada's Second Bi-annual Forest Education Conference. January 26-29, Banff, AB.
- Carlson, M., D. Farr, B. Hudson, and B. Stelfox. 2005. Conceptual Ecosystem Models for Ecological Integrity Monitoring in Point Pelee National Park. Report prepared for Parks Canada.

- Carlson, M., B. Stelfox, D. Farr, J. Nishi, and L. Roy. Integrated landscape modeling strategies and challenges: an ALCES perspective (presentation). Toward the Development of an Integrated Landscape Management Modeling Capacity in Canada. February 28 – March 1, Environment Canada and Policy Research Initiative, Ottawa, ON.
- Canadian Boreal Initiative. 2005. Boreal Conservation Planning Principles. Unpublished Canadian Boreal Initiative report.
- Carlson, M., S. Boutin, M. Boyce, S. Cumming, E. Dzus, D. Farr, L. Foote, W. Kurz, F. Schmiegelow, R. Schneider, B. Stelfox, M. Sullivan, S. Wasel. Implementing active adaptive management in Alberta's boreal forest. XII World Forestry Congress (Abstract). September 21-28, 2003, Quebec, Canada.
- Boutin, S., E. Dzus, M. Carlson, M. Boyce, R. Creasey, S. Cumming, D. Farr, L. Foote, W. Kurz, F. Schmiegelow, R. Schneider, B. Stelfox, M. Sullivan, S. Wasel. 2002. The Adaptive Management Experiment Team: a collaborative approach to sustainable forest management. Pages 11-16 in T.S. Veeman, P.N. Duinker, B.J. Macnab, A.G. Coyne, K.M. Veeman, G.A. Binstead, and D. Korber (editors). Proceedings of the 2002 Sustainable Forest Management Network Conference: Advances in Forest Management: From Knowledge to Practice. November 13-15, 2002, Edmonton, Alberta. Sustainable Forest Management Network, Edmonton, Alberta.
- Carlson, M., F. Schmiegelow, S. Boutin, L. Foote, M. Boyce, and M. Sullivan. 2001. Impact Hypothesis Diagrams: Linking Human Action to Ecological Response. Adaptive Management Experiment Team Report.
- Carlson, M. 2000. Cost-effective Sampling Design for Large-scale Avian Monitoring. M. Sc. Thesis, Department of Renewable Resources, University of Alberta, Edmonton. [online] URL: <http://www.rr.ualberta.ca/Staff/fschmiegeg/grads.htm>
- Carlson, M. and R. Naidoo. 2000. A cumulative effects assessment of the eastern slopes of the Rocky Mountains near Hinton, Alberta (presentation). Biology 631 Seminar Series. January 21, Department of Biological Sciences, University of Alberta.
- Van Damme, L., C. Wedeles, H. Bax, and M. Carlson. 1997. Mississagi Management Unit Independent Forest Audit. Prepared for the Ministry of Natural Resources Corporate Affairs Branch Audit and Evaluation Section.
- Bax, H., C. Wedeles, J. Williams and M. Carlson. 1997. Algonquin Park Management Unit Independent Forest Audit. Prepared for the Ministry of Natural Resources Corporate Affairs Branch Audit and Evaluation Section.
- Bax, H., C. Wedeles, and M. Carlson. 1997. Romeo-Malette Forest Management Unit Independent Forest Audit. Prepared for the Ministry of Natural Resources Corporate Affairs Branch Audit and Evaluation Section.
- Gooding, T., L. Van Damme, and M. Carlson. 1997. Computer simulation and economic implications of traditional clearcut and alternative silviculture forest management in Northwestern Ontario's Boreal Forest. Nat. Resource. Can., Can. For. Serv. Sault Ste. Marie, NODA Final Report.