J. Brad Stelfox, Ph.D.

Landscape and Wildlife Ecologist

Principal, ALCES Landscape and Land-Use Ltd.
Adjunct Professor (University of Alberta, University of Calgary)

Professional Expertise

Regional Planning, Sustainable Resource Management, Wildlife Ecologist, Watershed Dynamics, Food Production Dynamics, Herbivore/Grassland Dynamics, Life Cycle Dynamics, Protected Areas Design and Management, Cumulative Effects Analyses, Ecological Modeling, Carbon Pool Dynamics, Disturbance Regimes, Climate Change, Forest Ecosystem Management

Education

Ph.D. Agricultural Productivity. 1985. University of Alberta, Department of Animal Science, Faculty of Agriculture, Edmonton, Canada. Title: Mixed-species game ranching in Kenya, East Africa.

B.Sc. Zoology 1980 University of Alberta, Department of Zoology, Edmonton, Canada

Experience

2017-2018 Lead Developer of Population Dynamics Software for Alberta Fish and Wildlife Division, Alberta

Dr. Stelfox is leading the development of online wildlife conservation and management software for the Alberta Fish and Wildlife Division. This technology is being used to assess wildlife population status and assess alternative harvest and conservation strategies.

2013- 2017 Lead Landuse Analyst / Regional Planning Initiative of the Curtin University, International Institute of Agri-Food Security (IIAFS)

In collaboration with colleagues at the International Institute of Agri-Food Security, Dr. Stelfox is conducting projects from Canada to customize ALCES toolkit (Integrator, Mapper, Online) to assist regional governments with sustainable planning and development

2013-2014 Lead Landuse Analyst / Cumulative Effects of Overlapping Landuse on the DND Suffield Military Reserve

Lead analysts for conducting regional scale land use and cumulative effects assessment for the DND Suffield Base in southeast Alberta. Client: DND Suffield. Ms. Delaney Boyd.

2010-2014 Lead Landuse Analyst / Food Security and Upper Bow Basin Cumulative Effects Study.

Lead analysts for conducting regional scale land use and cumulative effects assessment for the Upper Bow Basin upstream of Calgary, Alberta, Canada. A major focus of this project was the quantification of change in food security and ecological goods and services. Client: Bow River Basin Council and Action for Agriculture. Mr. Harvey Buckley.

2010-2014 Lead Landuse Analyst / Food Production Systems, WOTR, Pune, India

Lead analysts for conducting regional scale land use and cumulative effects assessment for the Akole Region, India. A major focus of this project is exploring alternative land use trajectories on triple bottom line indicators with a focus on sustainable food production systems. Client: Watershed Organization Trust (WOTR). Lead client: Dr. Crispino Lobo, Pune.

2012-2014 **Lead Application Development / ALCES Online**

Lead development, in collaboration with Noah Purves-Smith, the development of a fast, interactive, online landuse simulator called ALCES Online.

2012-2014 **ALCES Lead Landuse Analyst / ALCES Model Component, West Kimberley Region, WAMSI II Science Project, Western Australia.**

Lead development, in collaboration with Dr. Michael Hughes, of a user-friendly version of ALCES Landscape Simulator and Mapper that could be used interactively by stakeholders of Kimberley Region of NW Australia. The Kimberley ALCES model is to be used in an integrated manner with other model tools being developed by colleagues Dr. Fabio Boschetti, Dr. Hector Lozano Montes, and Dr. Michael Hughes.

2011-2013 **Wildlife Habitat and Population Analyst /Fort McKay Cumulative Effects Study.**

Lead the wildlife and population dynamics component of the Moose Lake Buffer Project for the community of Fort McKay. Project examined the consequences of alternative protected areas options in the traditional territory of Fort McKay.

2011-2013 **Landuse Analyst /Province of Alberta Land Use Scan for the Alberta Land Use Framework.**

Provide broad oversight into the interpretation of historical, current and future land use trends in the Province of Alberta. Client: ALUF, Crystal Damer.

2011-2013 **Simulation Lead, Mine Reclamation, Syncrude Canada**

Responsible for simulation of historical, current and future landscape and ecological indicator changes to Syncrude's Mildred Lake Mine Site. Client: Integrated Ecology Group. Mr. Justin Straker.

2010-2012 **Lead Landuse Analyst / Ghost River Watershed Effects Study.**

Lead analysts for conducting regional scale land use and cumulative effects assessment for the Upper Bow Basin upstream of Calgary. Client: Ghost River Watershed Council. Marina Krainer

2012 **Lead Landuse Analyst / Cold Lake First Nations Cumulative Effects Study.**

Lead analysts for conducting regional scale land use and cumulative effects assessment for the Cold Lake First Nations. Client: Witten Law

2010-2012 **Lead Landuse Analyst / Alberta Land Use Management Framework. Lower Athabasca Regional Plan.**

Lead analysts for conducting regional scale land use and cumulative effects assessment for the Alberta Land Use Management Framework. Client: Alberta Land Use Framework. Crystal Damer.

2011-2012 **Lead Landuse Analyst / Watershed Organization Trust (WOTR), Pune, India.**

Lead analysts for conducting regional scale land use and cumulative effects assessment for pilot project for WOTR. Client: Watershed Organization Trust. Mr. Crispino Lobo

2010-2012 **Lead Landuse Analyst / Alberta Cumulative Landuse Effects Study for the Institute of Land Use Innovation (ILUI), University of Alberta.**

Lead analysts for conducting provincial scale land use and cumulative effects assessment for the ILUI. Client: Alberta Land Institute. Andre Tremblay.

2010 **Lead Landuse Analyst / West Kimberley Region, Western Australia, Cumulative Effects**

Assessment Pilot Project.

Lead analysts for conducting regional landuse effects assessment for the West Kimberley Pilot Project Region of Western Australia. Client: Australia Sustainable Development Institute. Dr. Charlie Thorn.

2010 **Lead Landuse Analyst / Blood Indian Reserve Water Supply and Demand Study**

Lead analysts for conducting regional scale water supply and demand assessment for the Blood Indian Reserve.

2009- 2010 **Lead Landuse Analyst / Northwest Saskatchewan Cumulative Effects Project**

Responsibilities include development of a landuse/landscape modeling approach for the client, and the modification of the ALCES model to incorporate relevant indicators, scenarios and response surfaces. Providing disciplinary leadership in water dynamics, plant community structure, forestry, energy, agriculture, and residential sectors.

2008- 2010 **Lead Landuse Analyst / Alberta Landuse Management Framework for Lower Athabasca Regional Plan**

Responsibilities include development of a landuse/landscape modeling approach for the client, and the modification of the ALCES model to incorporate relevant indicators, scenarios and response surfaces. Providing disciplinary leadership in water dynamics, plant community structure, forestry, energy, agriculture, and residential sectors.

2005- 2008 **Landscape / Landuse Systems Dynamics and Modeling (ALCES); Southern Foothills Study**

Responsibilities include development of a landuse/landscape modeling approach for the client, and the modification of the ALCES model to incorporate relevant indicators, scenarios and response surfaces. Providing disciplinary leadership in water dynamics, plant community structure, forestry, energy, agriculture, and residential sectors.

2004- 2008 **Landscape / Landuse Systems Dynamics and Modeling (ALCES); CEMA, Alberta**

Responsibilities include development of a landuse/landscape modeling approach for the client, and the modification of the ALCES model to incorporate relevant indicators, scenarios and response surfaces.

2004- 2006 **Landscape / Landuse Systems Dynamics and Modeling (ALCES); NEI North Yukon**

Responsibilities include development of a landuse/landscape modeling approach for the client, and the modification of the ALCES model to incorporate relevant indicators, scenarios and response surfaces.

2004- 2006 **Landscape / Landuse Systems Dynamics and Modeling (ALCES); Kenai, Alaska**

Responsibilities include development of a landuse/landscape modeling approach for the client, and the modification of the ALCES model to incorporate relevant indicators, scenarios and response surfaces.

2004- Current **Adjunct Professor, Department of Biological Sciences, University of Alberta**

Responsibilities include membership on graduate student committees and invited lecturer on issues of landuse management and wildlife biology.

2003 - Current **Advisor, Integrated Resource, Integrated Land Management Program,**

Alberta Research Council

Responsibilities include training ARC personnel in the use of the ALCES landscape model, and in guiding the development and implementation of ARC ILM Program.

2003 - Current **Adjunct Associate Professor, Faculty of Environmental Design, Univ. of Calgary**

Responsibilities include membership on graduate student committees and invited lecturer on issues of landuse management and wildlife biology.

2002 – Current **Southern Alberta Sustainability Strategy Cumulative Effects Initiative**

Responsible for the implementation of the ALCES model as a landscape simulator to assess the risks and opportunities associated with different landuse scenarios for the southern Alberta regional landscape.

2001 – 2003 **North-East Slopes Regional Cumulative Effects Initiative**

Responsible for the implementation of the ALCES model as a landscape simulator to assess the risks and opportunities associated with different landuse scenarios for the north-east slopes regional landscape.

1998 - Current **Developer of ALCES (A Landscape Cumulative Effects Simulator)**

Funded by WEPA (Western Economic Partnership Agreement), the Government of Alberta, and Alberta-Pacific Forest Industries, Stelfox has continued development of the ALCES model. This model is becoming widely adopted by government, industry and the environmental community as an effective tool for exploring issues of landscape and resource use sustainability.

Awards and Recognitions

2011	Recipient, **William Rowan Award**, The Wildlife Society; Alberta Chapter
2009	Recipient, **Outstanding Leadership – Individual**; Canadian Boreal Initiative
2004	Recipient, **Alberta Emerald Award** in the "Research and Innovation" Category
2002	Recipient, Al-Pac/**ASTech** Innovation in Integrated Landscape Management Prize
1997	**Distinguished Service Award**, The Wildlife Society, Alberta Chapter
1987	Stelfox Scholarship Fund, School for Field Studies, Beverly, Massachusetts
1985	Province of Alberta Graduate Scholarship.
1981-1983	National Sciences and Engineering Research Council Graduate Scholarship.

Publications (only current to 2015)

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.

Matthew Carlson, Brad Stelfox, Noah Purves-Smith, Justin Straker, Shanti Berryman, Tim Barker, Barry Wilson, 2014. ALCES Online: Web-delivered Scenario Analysis to Inform Sustainable Land-use Decisions. *International Environmental Modelling and Software Society (iEMSs), 7th Intl. Congress on Env. Modelling and Software, San Diego, CA, USA, Daniel P. Ames, Nigel W.T. Quinn and Andrea E. Rizzoli (Eds.),* http://www.iemss.org/society/index.php/iemss-2014-proceedings

Matthew Carlson, Terry Antoniuk, Dan Farr, Shawn Francis, Karen Manuel, John Nishi, Brad Stelfox, Mika Sutherland, Cornel Yarmoloy, Craig Aumann, Daiyuan Pan. 2010. Informing Regional Planning in Alberta's Oilsands Region with a Land-use Simulation Model. International Environmental Modelling and Software Society 2010 International Congress

Schneider, R.L, M.C. Arienti, B. Stelfox, D. Farr, and S. Boutin. 2010. Modeling the effects of a mountain pine beetle outbreak and potential management responses in Alberta's eastern slopes. Forest Ecology and Management, Volume 2010, 7 pages.

Jordaan, S. M., D. W. Keith, B. Stelfox. 2009. Quantifying land use of oil sands production: a life cycle perspective, Environmental Research Letters. 15 pages.

Stelfox, J.B. 2007. Alberta Economic Prosperity and Ecological Footprint: The Mining of Her Natural Capital. Pp 15-17. Dialogues. A Canada West Foundation Publication.

Gates, C. Brad Stelfox, Tyler Muhly, Tom Chowns, Robert J. Hudson. 2005. The ecology of bison movements and distribution in and beyond Yellowstone National Park. A critical review with implications for winter use and transboundary population management. Faculty of Environmental Design, University of Calgary Calgary, Alberta. Prepared for the U.S. National Park Service.

Stelfox, J.B., M. Sullivan, and M. Spafford. 2004. The role of integrated landscape management to assist with exploring the past, present, and future effects of landscape activities on Alberta's boreal fish communities. Pp: 9-10. In Proceedings of: Forest Land – Fish Conference II: Ecosystem Stewardship Through Collaboration. Edmonton, Alberta, Canada, April 26-28th, 2004.

Schneider, R.R., Stelfox, J.B., S. Boutin, and S. Wasel 2003. The management of cumulative impacts of landuses in the Western Canadian Sedimentary Basin. A Case Study. Conservation Ecology. **7**(1): 8. [online] URL: http://www.consecol.org/vol7/iss1/art8.

Lee, P.C., Crites, S., Nietfeld, M., Van Nguyen, H. and Stelfox, J.B. 1997. Characteristics and origins of deadwood material in aspen-dominated boreal forests. Ecological Applications, 7(2), 691-701.

Schieck, J., Nietfeld, M., and Stelfox, J.B. 1996. Differences in bird species richness and abundance among three successional stages of aspen-dominated boreal forests. Canadian Journal of Zoology, 73, 1417-1431.

Walker, D., Stelfox, J.B., Wasel, S. and Hebert, D. 1995. Natural disturbance regimes as templates for boreal forest harvest. Pp.. 3–18. In: Proceedings of Bats and Forests Symposium. October 19-21, 1995, Victoria, B.C. Edited by R. Barclay and M. Brigham.

Stelfox, J.B. and Lee, P. 1993. Old growth forests in the boreal mixedwoods of Alberta: patterns and processes. International Union of Game Biologists XXI. Halifax, Nova Scotia, August 15-20, 1993.

Stelfox, J.B. (editor) 1993. Alberta's Hoofed Mammals; their ecology, management and status. 250 pages. Lone Pine Press, Edmonton.

Stelfox, J.B. 1993. Boreal Forests, Biodiversity, and Logging. pp. 33-36. In: Forestry on the Hill. Special Issue #5.

Stelfox, J.B. 1989. Experimental systems. Section G. pp. 363-369. In: Wildlife production systems: economic utilization of wild ungulates. Cambridge University Press, Cambridge, UK. Edited by Hudson, R.J., Drew, K.R. and Baskin, L.M.

Stelfox, J.B. 1988. Game ranching in Kenya, East Africa. pp. 38-48. In: Proceedings of 3rd Annual Alberta Game Growers' Association Conference. Renecker, L.A. (ed.). Red Deer, Alberta. October 23-24, 1987.

Stelfox, J.B. 1987. A record of male homosexual behavior in giraffe. Swara, 10, 20.

Stelfox, J.B. 1986. Effects of livestock enclosures (bomas) on East African rangeland ecology. African Journal of Ecology, 24, 41-45.

Stelfox, J.B. and R.J. Hudson, 1986. Body condition of Thomson's and Grant's gazelles in relation to seasonal environments and resource use. African Journal of Ecology, 24, 111-120.

Stelfox, J.B. 1985. Mixed-species game ranching in Kenya. Ph.D. dissertation. University of Alberta, Edmonton, Canada. 159 pages.

Stelfox, J.B., R.J. Hudson, and N. Groer, 1984. Relationships among physical traits, age and social status in Thomson's and Grant's gazelles. Applied Animal Behavioural Science, 13, 347-357.

Stelfox, J.B. 1984. Game ranching in Kenya; success amidst controversy. Swara, 7, 15-19.

Hudson, R.J., J.B. Stelfox, and D. Hopcraft, 1982. Wildlife production systems and programmes in Kenya. Acta Zoologica Fennica, 172, 225-226.

Other relevant material

Stelfox, J.B. and Cornel Yarmoloy. 2013. Cumulative Effects of Overlapping Land Uses in the Ghost River Watershed. Ghost Watershed Alliance Society. Publication available on ALCES website: www.alces.ca.

Stelfox, J.B., Cornel Yarmoloy, and Matt Carlson. 2013. Cumulative Effects of Overlapping Land Uses in the Upper Bow River Basin. Submitted to Action for Agriculture. Publication available on ALCES website: www.alces.ca.

Stelfox, J.B. 2010. An Overview of Alberta's Landuses and a Critique of the Alberta Land-use Framework. (Tackling the Cumulative Effects Issue). A Green Paper prepared for the Annual Meeting of the Alberta Institute of Agrologists.

Carlson, M, Bayne, E., and Stelfox, B. 2008. Seeking a Balance: Future Conservation and Development in the Mackenzie Watershed. Canadian Boreal Initiative, Canadian Boreal Initiative. Ottawa, Ontario.

Carlson, M., and Stelfox, J.B. 2008. Integrated resource management and planning, in Animal and Plant Productivity, [Ed. Robert J. Hudson], in Encyclopedia of Life Support Systems (EOLSS), Developed under the Auspices of the UNESCO, EOLSS Publishers, Oxford, UK, [http://www.eolss.net.login.ezproxy.library.ualberta.ca] [Retrieved February 28, 2008].

Steven A. Kennett, Shelley Alexander, Danah Duke, Monique M. Passelac-Ross, Michael Quinn, Brad Stelfox, Mary-Ellen Tyler, Nickie Vlavianos 2006. Managing Alberta's Energy Futures at the Landscape Scale**.** Prepared for Alberta's Energy Futures Project, Institute for Sustainable Energy, Environment and Economy (ISEEE), University of Calgary

TeraWestland, 2005. Environmental assessment report for the Terasen Pipelines (Trans Mountain) Inc. TMX – Anchor Project. Prepared for Terasen Pipelines (Trans Mountain) Inc., Calgary, Alberta.

Farr, D., Kennett, S., Stelfox, B., Ross, M., Weber, M. 2004. Conserving Canada's Natural Capital. The Boreal Forest. Alpac FMA Case Study Report. Prepared for the National Round Table on the Economy and Environment.

Farr, D., and B. Stelfox. 2004. Conserving Canada's Natural Capital. The Boreal Forest. Alpac Case Study – Part 1. Management Objectives. Prepared for the National Round Table on the Economy and Environment.

Stelfox, J.B. 2004. Calgary's urban footprint: when does growth become sprawl. Page 12-16. Springbank Park Patter. Mid-March 2004.

Stelfox, J.B. 2004. Alberta's Boreal Forest – A landscape in transition: Implications for sustainable landscapes and landuse. Pp. 35-50. In The Human Ecological Footprint. The Kenneth Hammond Lectures on Environment, Energy and Resources 2002 Series. Faculty of Environmental Sciences, University of Guelph.

Stelfox, J.B., R.M. Levy, and H. Gariepy. A comparison of urban footprint associated with alternative growth strategies for the City of Edmonton (2000-2030). Prepared for the City of Edmonton Planning Department. April, 2004.

Stelfox, J.B. 2000. Technical Manual of the Alberta Landscape Cumulative Effects Simulator (ALCES). Published at the web address of www.foremtech.com. October 2000.

Stelfox, J.B., Wasel, S., and O'Neill, J. 2000. Linear Disturbances and transportation networks in Alberta's boreal forests. Where are we today? Where are we heading?. Proceedings of the Roads and Zones Workshop. Balancing human access in public lands. A land manager's workshop. Radium, British Columbia, Feb 16-18, 2000.