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EDUCATION

1977 Ph.D., Yale University, New Haven, Connecticut.
1975 M.Phil., Yale University, New Haven, Connecticut.
1974 M.S., University of Alaska, Fairbanks.
1972 B.S., Iowa State University, Ames.

ACADEMIC POSITIONS

Professor of Ecology, and Alberta Conservation Association Chair in Fisheries and Wildlife, 1999-present (Endowed Chair renewed 2012 July 1), Department of Biological Sciences, University of Alberta, Edmonton.

Vallier Chair of Ecology, and Wisconsin Distinguished Professor (UW-System), 1993-1999, College of Natural Resources, University of Wisconsin, Stevens Point.

Professor, 1987-1993, Department of Zoology and Physiology, University of Wyoming, Laramie.

Associate Professor, 1981-1987, Department of Zoology and Physiology, University of Wyoming.

Visiting Professor, 1984-1985, Department of Mathematics, University of Wyoming.

Postdoctoral Research Fellow, 1982-1983, Animal Ecology Research Group, Department of Zoology, University of Oxford.

Assistant Professor, 1977-1981, Department of Zoology and Physiology, University of Wyoming.

Instructor, 1976-77, Department of Zoology and Physiology, University of Wyoming.

SABBATICALS

2010-11, University of Queensland, Brisbane, AUSTRALIA;
Imperial College London, Silwood Park, U.K.

2003-04, University of British Columbia, Vancouver, CANADA.

1991-92, Fulbright Fellow/American Institute of Indian Studies, Centre for Ecological Sciences
and Centre for Theoretical Studies, Indian Institute of Science, Bangalore, INDIA.

1982-83, NATO Postdoctoral Fellowship, Department of Zoology, University of Oxford, U.K.

OTHER POSITIONS

1989-1993, Director, UW-National Park Service Research Center, University of Wyoming.

PUBLICATIONS

Books:

- Boyce, M. S., and A. Haney. 1997. *Ecosystem Management: Applications for Sustainable Forest and Wildlife Resources*. Yale University Press, New Haven, Conn. 361pp.
- Thorne, E. T., M. S. Boyce, P. Nicoletti, and T. J. Kreeger (eds.). 1997. *Brucellosis, Bison, elk, and Cattle in the Greater Yellowstone Area: Defining the Problem, Exploring the Solutions*. Wyoming Game and Fish Department, Cheyenne, Wyo. 219pp.
- Keiter, R. B., and M. S. Boyce. 1991. *The Greater Yellowstone Ecosystem: Redefining America's Wilderness Heritage*. Yale University Press, New Haven, Conn. 425pp.
- Boyce, M. S. 1989. *The Jackson Elk Herd: Intensive Wildlife Management in North America*. Cambridge University Press, Cambridge, U.K., 305 pp.
- Boyce, M. S., ed. 1988. *Evolution of Life Histories of Mammals*. Yale Univ. Press, New Haven, Conn., 373 pp.
- Boyce, M. S., and L. D. Hayden-Wing. 1979. *North American Elk: Ecology, Behavior and Management*. Univ. Wyoming, Laramie, 294pp.

Scientific Articles:

- Lele, S. R., E. H. Merrill, J. Keim, and M. S. Boyce. 2013. Selection, choice, use, and occurrence: clarifying concepts in resource selection studies. *J. Anim. Ecol.* (early on-line).
- Knopff, K. H., N. Webb, and M. S. Boyce. 2013. Cougar population status and range expansion in Alberta during 1991-2010. *Wildl. Soc. Bull.* (in press).
- Cristescu, B., and M. S. Boyce. 2013. Focusing ecological research for conservation. *Ambio* 42:805–815.
- Latham, A. D. M., M. C. Latham, M. S. Boyce, and S. Boutin. 2013. Spatial relationships of sympatric wolves (*Canis lupus*) and coyotes (*C. latrans*) with woodland caribou

- (*Rangifer tarandus caribou*) during the calving season in a human-modified boreal landscape. *Wildl. Res.* **40**:250–260. (doi: 10.1071/WR12184).
- Muhly, T., M. Hebblewhite, M. S. Boyce, D. Paton, J. A. Pitt, and M. Musiani. 2013. Humans strengthen bottom-up effects and weaken trophic cascades in a terrestrial food web. *PLoS ONE* **8**(5): e64311 (doi:10.1371/journal.pone.0064311).
- Morehouse, A. T., and M. S. Boyce. 2013. Deviance from truth: telemetry location errors erode both precision and accuracy of habitat-selection models. *Wildl. Soc. Bull.* (doi: 10.1002/wsb.292).
- Nielsen, S., A. Shafer, M. S. Boyce, and G. B. Stenhouse. 2013. Does learning or instinct shape habitat selection? *PLoS ONE* **8**(1): e53721. doi:10.1371/journal.pone.0053721.
- Bird, K. L., C. L. Aldridge, J. E. Carpenter, C. A. Paszkowski, M. S. Boyce, and D. W. Coltman. 2013. The secret sex lives of sage-grouse: multiple paternity and intraspecific nest parasitism revealed through genetic analysis. *Behav. Ecol.* **24**:29-38 (doi:10.1093/beheco/ars132).
- Boyce, M. S., K. H. Knopff, J. Northrup, J. Pitt, and L. S. Vors. 2013. Harvest models and climate change. Pages 293-306 *In* *Conserving wildlife populations in a changing climate*. Editors: J. Brodie, E. Post, and D. Doak. University of Chicago Press, Chicago, Ill.
- Ciuti, S., J. M. Northrup, T. B. Muhly, S. Simi, M. Musiani, J. A. Pitt, and M. S. Boyce. 2012. Effects of humans on behaviour of wildlife exceed those of natural predators in a landscape of fear. *PLoS ONE* **7**(11): e50611 (doi:10.1371/journal.pone.0050611).
- Ciuti, S., T. B. Muhly, D. G. Paton, A. D. McDevitt, M. Musiani, and M. S. Boyce. 2012. Human selection of elk behavioural traits in a landscape of fear. *Proc. R. Soc. B* **279**: 4407–4416. (doi:10.1098/rspb.2012.1483).
- Yates, G., and M. S. Boyce. 2012. Animal dispersal. Pages 188-192 *in* A. Hastings and L. J. Gross, eds., *Encyclopedia of Theoretical Ecology*. University of California Press, Berkeley.
- Northrup, J. M., J. Pitt, T. B. Muhly, G. B. Stenhouse, M. Musiani, and M. S. Boyce. 2012. Vehicle traffic shapes grizzly bear behaviour on a multiple-use landscape. *J. Appl. Ecol.* **49**: 1159–1167 (doi: 10.1111/j.1365-2664.2012.02180.x).
- Shafer, A. B. A., J. M. Northrup, K. S. White, M. S. Boyce, S. D. Côté, and D. W. Coltman. 2012. Habitat selection predicts genetic relatedness in an alpine ungulate. *Ecology* **93**(6): 1317–1329.
- Northrup, J. M., and M. S. Boyce. 2012. Mad cow policy and management of grizzly bear incidents. *Wildl. Soc. Bull.* **36**(3):499–505 (DOI: 10.1002/wsb.167).
- Boyce, M. S. 2012. Book Review: Dynamics of large herbivore populations in changing environments. *J. Wildl. Manage.* **76**(7):1523(DOI: 10.1002/jwmg.431).
- Northrup, J. M., G. B. Stenhouse, and M. S. Boyce. 2012. Agricultural lands as ecological traps for grizzly bears. *Anim. Conserv.* **15**: 369–377 (doi:10.1111/j.1469-1795.2012.00525.x).
- Boyce, M. S., P. Baxter, and H. Possingham. 2012. Managing moose harvests by the seat of your pants. *Theor. Popul. Biol.* **82**:340-347. (doi: 10.1016/j.tpb.2012.03.002)
- Boutin, S., M. S. Boyce, D. Seip, D. Latham, J. Nagy, and D. Hervieux. 2012. Why are caribou declining in the Oil Sands? *Frontiers Ecol. Environ.* **10**:65–67.
- Boyce, M. S. 2012. Wildlife ecology. *Oxford Bibliographies in Ecology*. Ed. D. Gibson. Oxford University Press, New York. (www.oxfordbibliographies.com/view/document/obo-9780199830060/obo-9780199830060-0002.xml)

- Proctor, M., D. Paetkau, B. McLellan, G. Stenhouse, K. Kendall, R. Mace, W. Kasworm, C. Servheen, C. Lausen, M. Gibeau, W. Wakkinen, M. Haroldson, G. Mowat, C. Apps, L. Ciarniello, R. Barclay, M. S. Boyce, C. C. Schwartz, and C. Strobeck. 2012. Population fragmentation and inter-ecosystem movements of grizzly bears in western Canada and the northern USA. *Wildl. Monogr.* **180**.
- Cristescu, B., G. Stenhouse, M. Symbaluk, and M. S. Boyce. 2012. Ecological effects of mine reclamation on grizzly bears. Proceedings of the 36th annual British Columbia mine reclamation symposium, Kamloops BC, September 17-20, 2012. British Columbia Technical and Research Committee on Reclamation. Bitech Publishers Ltd., Richmond, BC.
- McDonald, L. L., W. P. Erickson, M. S. Boyce, and J. R. Alldredge. 2012. Modelling vertebrate use of terrestrial resources. Chapter 17, Pages 410-428 in N. J. Silvy, editor. *The Wildlife Techniques Manual: Volume 1: Research*, 7th edition. Johns Hopkins University Press, Baltimore, Maryland, USA.
- Gates, C. C., P. Jones, M. Sutor, A. Jakes, M. S. Boyce, and K. Kunkel. 2012. The influence of land use and fences on habitat effectiveness, movements and distribution of pronghorn in grasslands of North America. Pages 277–294 in M. J. Somers and M. W. Hayward, editors. *Fencing for conservation: restriction of evolutionary potential or a riposte to threatening processes?* Springer, New York, 320pp.
- Bacon, M. M., G. M. Becic, M. T. Epp, and M. S. Boyce. 2011. Do GPS clusters really work? Carnivore diet from scat analysis and GPS telemetry methods. *Wildl. Soc. Bull.* **35**:409–415.
- Latham, A. D. M., M. C. Latham, M. S. Boyce, and S. A. Boutin. 2011. Movement responses by wolves to industrial linear features and its effect on woodland caribou in northeastern Alberta. *Ecol. Appl.* **21**: 2854–2865.
- Latham, A. D. M., M. C. Latham, and M. S. Boyce. 2011. Black bear habitat selection and spatial relationships with woodland caribou in northeastern Alberta. *Can. J. Zool.* **89**: 267–277.
- Cristescu, B., G. B. Stenhouse, M. Symbaluk, and M. S. Boyce. 2011. Land-use planning following resource extraction—lessons from grizzly bears at reclaimed and active open pit mines. Pages 207–217 In A. B. Fourie, M. Tibbett and A. Beersing (eds.). *Mine Closure 2011*. Australian Centre for Geomechanics, Perth.
- Morehouse, A. T., and M. S. Boyce. 2011. From venison to beef: seasonal changes in wolf diet composition in a livestock grazing landscape. *Frontiers Ecol. Environ.* **9**:440–445.
- Romme, W. H., M. S. Boyce, B. Gresswell, E. H. Merrill, W. Minshall, C. Whitlock, and M. G. Turner. 2011. Twenty years after the 1988 Yellowstone fires: Lessons about disturbance and ecosystems. *Ecosystems* **14**:1196–1215 (doi: 10.1007/s10021-011-9470-6).
- Estay, S. A., A. A. Albornoz, M. Lima, M. S. Boyce, and N. C. Stenseth. 2011. A simultaneous test of synchrony causal factors in muskrat and mink fur returns at different scales across Canada. *PLoS One* **6**(11): e27766. (doi:10.1371/journal.pone.0027766).
- Found, R., and M. S. Boyce. 2011. Warning signs mitigate deer-vehicle collisions in an urban area. *Wildl. Soc. Bull.* **35**:291–295.
- Found, R., and M. S. Boyce. 2011. Predicting deer-vehicle collisions in an urban area. *J. Environ. Manage.* **92**: 2486–2493.
- Bush, K. L., C. K. Dyte, B. J. Moynahan, C. L. Aldridge, H. S. Sauls, A. M. Battazzo, B. L. Walker, K. E. Doherty, J. Tack, J. Carlson, D. Eslinger, J. Nicholson, M. S. Boyce, D. E.

- Naugle, C. A. Paszkowski, D. W. Coltman. 2010. Population structure and genetic diversity of greater sage-grouse (*Centrocercus urophasianus*) in fragmented landscapes at the northern edge of their range. *Conserv.Genet.* **12**:527–542.
- Bacon, M. M., and M. S. Boyce. 2010. Scavenging of an elk, *Cervus elaphus*, carcass by multiple cougars, *Puma concolor*, in Southeastern Alberta. *Can. Field-Natur.* **124**(3): 242–245.
- Cristescu, B., and M. S. Boyce. 2011. Can grizzly bears persist on a landscape shared with mining? *BIOS* **26**(2):7.
- Carpenter, J., C. L. Aldridge, and M. S. Boyce. 2010. Sage-grouse habitat selection during winter in Alberta. *J. Wildl. Manage.* **74**(8):1806–1814.
- Boyce, M. S. 2010. Presence-only data, pseudo-absences, and other lies about habitat selection. *Ideas in Ecol. & Evol.* **3**:26–27.
- Cristescu, B., and M. S. Boyce. 2010. Grizzly bears and mining: rationale and objectives of a study on the effects of industry on bears. *Intern. Bear News* **19**(2):20–22.
- Roever, C., M. S. Boyce, and G. B. Stenhouse. 2010. Grizzly bear movements relative to roads: application of step selection functions. *Ecography* **33**: 1113–1122 (doi: 10.1111/j.1600-0587.2010.06077.x).
- Cagnacci, F., L. Boitani, R. A. Powell, and M. S. Boyce. 2010. Animal ecology meets GPS-based radiotelemetry: a perfect storm of opportunities and challenges. *Phil. Trans. R. Soc. B* **365**(1550): 2157–2162.
- Fieberg, J., J. Matthiopoulos, M. Hebblewhite, M. S. Boyce, and J. L. Frair. 2010. Correlation and studies of habitat selection: problem, red herring, or opportunity? *Phil. Trans. R. Soc. B* **365**(1550): 2233–2244.
- Boyce, M. S., J. A. Pitt, J. M. Northrup, A. Morehouse, K. H. Knopff, B. Cristescu, and G. B. Stenhouse. 2010. Temporal autocorrelation functions for movement rates from global positioning system radiotelemetry data. *Phil. Trans. R. Soc. B* **365**(1550):2213–2219.
- Knopff, K. H., A. A. Knopff, and M. S. Boyce. 2010. Cougar kill rate and prey composition in a multi-prey system. *J. Wildl. Manage.* **74**: 1435–1447 (doi: 10.2193/2009-314).
- Avila-Flores, R., S. Boutin, and M. S. Boyce. 2010. Habitat selection by black-tailed prairie dogs in a disturbed landscape at the edge of their geographic range. *J. Wildl. Manage.* **74**(5):945–953 (doi: 10.2193/2008-503).
- Nielsen, S. E., G. McDermid, G. B. Stenhouse, and M. S. Boyce. 2010. Dynamic wildlife habitat models: seasonal foods and mortality risk predict occupancy-abundance and habitat selection in grizzly bears. *Biol. Conserv.* **143**:1623–1634.
- Knopff, K. H., A. A. Knopff, and M. S. Boyce. 2010. Scavenging makes cougars susceptible to snaring at wolf bait stations. *J. Wildl. Manage.* **74**:644–653.
- Merrill, E. H., and M. S. Boyce. 2010. Tri-trophic interactions: Is the northern range elk less variable with wolves and fire? In *The Yellowstone Fires and Beyond. Tall Timbers Research Misc. Publications* **2010**:154.
- Robichaud, C. B., and M. S. Boyce. 2010. Spatial and temporal patterns of wolf harvest on registered traplines in Alberta, Canada. *J. Wildl. Manage.* **74**:635–643.
- Bush, K. L., C. L. Aldridge, J. E. Carpenter, C. A. Paszkowski, M. S. Boyce, and D. W. Coltman. 2010. Birds of a feather do not always lek together: genetic diversity and kinship structure of Greater Sage-Grouse (*Centrocercus urophasianus*) in Alberta. *Auk* **127**:343–353.

- Muhly, T. B., M. Alexander, M. S. Boyce, R. Creasey, M. Hebblewhite, D. Paton, J. A. Pitt, and M. Musiani. 2010. Differential risk effects of wolves on wild versus domestic prey have consequences for conservation. *Oikos* **119**:1243–1254 (doi: 10.1111/j.1600-0706.2009.18350.x)
- Anderson, C. R., Jr., F. Lindzey, K. H. Knopff, M. G. Jalkotzy, and M. S. Boyce. 2010. Cougar management in North America. Pages 41-54 In M. Hornocker, S. Negri and A. Rabinowitz (eds.) *Cougar: ecology and conservation*. University of Chicago Press, Chicago, Ill.
- Boyce, M. S. 2010. Carnivore conservation. Page 45–72 In N. S. Sodhi and P. R. Ehrlich (eds.) *Conservation biology for all*. Oxford University Press, Oxford, UK.
- Xu, C. L., and M. S. Boyce. 2010. Optimal harvesting of moose in Alberta. *Alces* **46**: 15–35.
- Schwab, C., B. Cristescu, M. S. Boyce, G. Stenhouse, and M. Gänzle. 2009. Bacterial populations and metabolites in the scat of free roaming and captive grizzly bears. *Can. J. Microbiol.* **55**:1335–1346.
- Ciarniello, L., M. S. Boyce, D. R. Seip, and D. C. Heard. 2009. Grizzly bear population ecology: comparison of a wilderness versus heavily roaded landscape. *Wildl. Biol.* **15**:247–265.
- Vors, L. S., and M. S. Boyce. 2009. Global declines of caribou and reindeer. *Global Change Biol.* **15**:2626–2633.
- Chetkiewicz, C.-L. B., and M. S. Boyce. 2009. Use of resource selection functions to identify conservation corridors. *J. Appl. Ecol.* **46**:1036–1047.
- Boyce, M. S., E. H. Merrill, and A. R. E. Sinclair. 2009. Managing the biosphere: Wildlife management. Pages 695–700 In: *The Princeton Guide to Ecology*. Edited by S. A. Levin. Princeton University Press, Princeton, New Jersey, USA.
- Shier, C., and M. S. Boyce. 2009. Mink prey diversity correlates with mink-muskrat dynamics. *J. Mammal.* **90**:897–905.
- Webb, S. M., and M. S. Boyce. 2009. Marten fur harvests and landscape change in west-central Alberta. *J. Wildl. Manage.* **73**:894–903.
- Van Moorter, B., D. Visscher, S. Benhamou, L. Börger, M. S. Boyce, and J. M. Gaillard. 2009. Memory keeps you at home: a mechanistic model for home range emergence. *Oikos* **118**: 641–652.
- Boyce, M. S. 2009. Managing bison in Yellowstone: Preserving the final remnant of the Great Plains herds. Pages 762–763 in D. W. Macdonald, ed. *The Princeton Encyclopedia of Mammals*. Princeton University Press, Princeton, NJ.
- Holmengen, N., K. L. Seip, M. S. Boyce, and N. Chr. Stenseth. 2009. Predator-prey coupling: interaction between mink *Mustela vison* and muskrat *Ondatra zibethicus* across Canada. *Oikos* **118**: 440–448.
- Knopff, K. H., A. A. Knopff, M. B. Warren, and M. S. Boyce. 2009. Evaluating Global Positioning System telemetry techniques for estimating cougar predation parameters. *J. Wildl. Manage.* **73**:586–597.
- Millsbaugh, J. J., J. R. Skalski, R. L. Townsend, D. R. Diefenbach, M. S. Boyce, L. P. Hansen, and K. Kammermeyer. 2009. An evaluation of sex-age-kill (SAK) model performance. *J. Wildl. Manage.* **73**: 442–451.
- St. Clair, C. C., and M. S. Boyce. 2009. Icy insights from emperor penguins. *Proc. Natl. Acad. Sci.* **106**:1691–1692.

- Van Moorter, B., J. M. Gaillard, P. McLoughlin, D. Delorme, F. Klein, and M. S. Boyce. 2009. Maternal and individual effects in selection of bed sites on fawn survival. *Oecologia* **159**:669–678.
- Xu, C., and M. S. Boyce. 2009. Oil sardine (*Sardinella longiceps*) off the Malabar Coast: density dependence and environmental effects. *Fish. Oceanogr.* **18**:359–370.
- Aldridge, C. L., and M. S. Boyce. 2008. Assessing occurrence and fitness for persistence: a case study of greater sage-grouse brood habitat. *Israel J. Ecol. Evol.* **54**: 389–419.
- Aldridge, C. L., S. E. Nielsen, H. L. Beyer, M. S. Boyce, J. W. Connelly, S. T. Knick, and M. A. Schroeder. 2008. Range-wide patterns of greater sage-grouse persistence. *Div. & Distr.* **19**:983–994.
- Allen, J. R., L. McInenly, E. H. Merrill, and M. S. Boyce. 2008. Using resource selection functions to improve estimation of elk population numbers. *J. Wildl. Manage.* **72**:1798–1804.
- Found, C., S. M. Webb, and M. S. Boyce. 2008. Selection of lake habitats by waterbirds in the boreal transition zone of northeastern Alberta. *Can. J. Zool.* **86**:277–286.
- Lingle, S., A. Feldman, M. S. Boyce, and W. F. Wilson. 2008. Prey behavior, age-dependent vulnerability and predation rates. *Am. Nat.* **172**: 712–725.
- Morris, D. W., R. Clark, and M. S. Boyce. 2008. Habitat and habitat selection: theory, tests, and implications. *Israel J. Ecol. Evol.* **54**: 287–294.
- Morris, W. F., C. A. Pfister, S. D. Tuljapurkar, C. V. Haridas, C. Boggs, M. S. Boyce, E. Bruna, D. R. Church, T. Coulson, D. F. Doak, S. Forsyth, J.-M. Gaillard, C. Horvitz, S. Kalisz, B. Kendall, T. Knight, C. Lee, and E. Menges. 2008. Longevity can buffer plant and animal populations against changing climatic variability. *Ecology* **89**:19–25.
- Nielsen, S. E., G. B. Stenhouse, H. L. Beyer, F. Huettmann, and M. S. Boyce. 2008. Can natural disturbance-based forestry rescue a declining population of grizzly bears? *Biol. Conserv.* **141**:2193–2207.
- Roever, C., M. S. Boyce, and G. B. Stenhouse. 2008. Grizzly bears and forestry I: Road vegetation and placement as an attractant to grizzly bears. *For. Ecol. Manage.* **256**:1253–1261.
- Roever, C., M. S. Boyce, and G. B. Stenhouse. 2008. Grizzly bears and forestry II: Grizzly bear habitat selection and conflicts with road placement. *For. Ecol. Manage.* **256**:1262–1269.
- Webb, S. M., D. J. Davidson, and M. S. Boyce. 2008. Trapper attitudes and industrial development on registered traplines in west-central Alberta. *Human Dimen. Wildl.* **13**:115–126.
- Wiens, T., B. Dale, M. S. Boyce, and P. Kershaw. 2008. Three way *k*-fold cross-validation of logistic regression models. *Ecol. Modelling* **212**:244–255.
- Beyer, H. L., E. H. Merrill, N. Varley, and M. S. Boyce. 2007. Willow on Yellowstone's northern range: evidence for a trophic cascade? *Ecol. Appl.* **17**: 1563–1571.
- Boyce, M. S., S. P. Rushton, and T. Lynam. 2007. Does modelling have a role in conservation? Pages 134-144 in D. W. Macdonald and K. Service (editors), *Key Topics in Conservation Biology*. Oxford University Press, Oxford, U.K.
- Ciarniello, L., M. S. Boyce, D. R. Seip, and D. C. Heard. 2007. Grizzly-bear habitat selection is scale dependent. *Ecol. Appl.* **17**:1424–1440.
- Ciarniello, L., M. S. Boyce, D. Heard, and D. Seip. 2007. Components of grizzly bear habitat selection: density, habitats, roads, and mortality risk. *J. Wildl. Manage.* **71**:1446–1457.

- Czetwertynski, S. M., M. S. Boyce, and F. Schmiegelow. 2007. Effects of hunting on demographic parameters of American black bears. *Ursus* **18**:1–18.
- Forester, J. D., A. R. Ives, M. G. Turner, D. P. Anderson, D. Fortin, H.L. Beyer, D. W. Smith, and M. S. Boyce. 2007. State-space models link elk movement to landscape characteristics in Yellowstone National Park. *Ecol. Monogr.* **77**:285–299.
- Frair, J. L., E. H. Merrill, J. R. Allen, and M. S. Boyce. 2007. Know thy enemy: experience affects translocation success in risky landscapes. *J. Wildl. Manage.* **71**:541–554.
- Kauffman, M. J., N. Varley, D. W. Smith, D. R. Stahler, D. R. MacNulty, and M. S. Boyce. 2007. Landscape heterogeneity shapes predation in a newly restored predator–prey system. *Ecol. Lett.* **10**:690–700.
- Knopff, K., and M. S. Boyce. 2007. Prey specialization by individual cougars (*Puma concolor*) in multi-prey systems. *Trans. N. Amer. Wildl. Nat. Resour. Conf.* **72**:194–210.
- McLoughlin, P.D., J.-M. Gaillard, M. S. Boyce, C. Bonenfant, F. Messier, P. Duncan, D. Delorme, B. Van Moorter, S. Saïd, and F. Klein. 2007. Lifetime reproductive success and composition of the home range in a large herbivore. *Ecology* **88**: 3192–3201.
- Aldridge, C. L., and M. S. Boyce. 2007. Linking occurrence and fitness to persistence: a habitat-based approach for endangered greater sage-grouse. *Ecol. Appl.* **17**:508–526.
- Boyce, M. S. 2006. Scale and resource selection functions. *Div. & Distr.* **12**:269–276.
- Boyce, M. S., C. V. Haridas, and C. Lee. 2006. Demography in an increasingly variable world. *Trends Ecol. Evol.* **21**:141–148.
- Chetkiewicz, C.-L., C. C. St. Clair, and M. S. Boyce. 2006. Corridors for conservation: structure versus function. *Ann. Rev. Ecol. Evol. Syst.* **37**:317–42.
- Johnson, C. J., S. E. Nielsen, E. H. Merrill, T. L., and M. S. Boyce. 2006. Resource selection functions based on use-availability data: theoretical motivation and evaluation methods. *J. Wildl. Manage.* **70**:347–357.
- Munro, R. H. M., S. E. Nielsen, M. H. Price, G. B. Stenhouse, and M. S. Boyce. 2006. Seasonal and diel patterns of grizzly bear diet and activity in west-central Alberta. *J. Mammal.* **87**:1112–1121.
- Pearce, J. L., and M. S. Boyce. 2006. Modelling distribution and abundance with presence-only data. *J. Appl. Ecol.* **43**:405–412.
- McLoughlin, P., M. S. Boyce, T. Coulson, and T. Clutton-Brock. 2006. Lifetime reproductive success and density-dependent, multi-variable resource selection. *Proc. Royal Soc. B* **273**:1449–1454.
- Nielsen, S. E., M. S. Boyce, and G. Stenhouse. 2006. A habitat-based framework for grizzly bear conservation in Alberta. *Biol. Conserv.* **130**:217–229.
- Varley, N., and M. S. Boyce. 2006. Adaptive management for reintroductions: updating a wolf recovery model for Yellowstone National Park. *Ecol. Modelling* **193**:315–339.
- Boyce, M. S. 2005. Wolves are consummate predators. *Q. Rev. Biol.* **80**:87–92.
- Boyce, M. S., S. Lele, and B. W. Johns. 2005. Whooping crane recruitment enhanced by egg removal. *Biol. Conserv.* **126**:395–401.
- Boyce, M. S., L. L. Irwin, and R. Barker. 2005. Demographic meta-analysis: synthesizing vital rates for spotted owls. *J. Appl. Ecol.* **42**: 38–49.
- Mao, J. S., M. S. Boyce, D. W. Smith, F. J. Singer, D. J. Vales, J. M. Vore, and E. H. Merrill. 2005. Habitat selection by elk before and after wolf reintroduction in Yellowstone National Park. *J. Wildl. Manage.* **69**:1691–1707.

- Johnson, C. J., M. S. Boyce, R. L. Case, H. D. Cluff, R. J. Gau, A. Gunn, and R. Mulders. 2005. Cumulative effects of human developments on Arctic wildlife. *Wildl. Monogr.* **160**:1–36.
- Ripley, T., G. Scrimgeour, and M. S. Boyce. 2005. Bull trout (*Salvelinus confluentus*) distribution and abundance influenced by cumulative industrial developments in a Canadian boreal forest watershed. *Can. J. Fish. Aquat. Sci.* **62**:2431–2442.
- Fortin, D., J. M. Morales, and M. S. Boyce. 2005. Elk winter foraging at fine scales in Yellowstone National Park. *Oecologia* **145**:335–343.
- Naugle, D. E., C. L. Aldridge, B. L. Walker, K. E. Doherty, M. R. Matchett, J. McIntosh, T. E. Cornish, and M. S. Boyce. 2005. West Nile virus and sage-grouse: What more have we learned? *Wildl. Soc. Bull.* **33**:616–623.
- McDonald, L. L., J. R. Alldredge, M. S. Boyce, and W. P. Erickson. 2005. Measuring availability and vertebrate use of terrestrial habitats and foods. Pages 465–488 in C. Braun, editor. *Techniques for Wildlife Investigations and Management*, 6th edition. The Wildlife Society, Washington, D.C.
- Xu, C., M. S. Boyce, and D. J. Daley. 2005. Harvesting in seasonal environments. *J. Math. Biol.* **50**: 663–682.
- Anderson, D. P., J. D. Forester, M. G. Turner, J. L. Frair, E. H. Merrill, D. Fortin, J. S. Mao, and M. S. Boyce. 2005. Factors influencing seasonal home-range sizes in elk (*Cervus elaphus*) in North American landscapes. *Landsc. Ecol.* **20**:257–271.
- Anderson, D. P., M. G. Turner, J. D. Forester, J. Zhu, M. S. Boyce, H. Beyer, and L. Stowell. 2005. Scale-dependent summer resource selection by reintroduced elk in Wisconsin, USA. *J. Wildl. Manage.* **69**:298–310.
- Ciarniello, L., M. S. Boyce, D. Seip, and D. C. Heard. 2005. Denning behaviour and den site selection of grizzly bears along the Parsnip River, British Columbia, Canada. *Ursus* **16**:47–58.
- Johnson, C. J., and M. S. Boyce. 2005. A quantitative approach for regional environmental assessment: application of a habitat-based population viability analysis to wildlife of the Canadian central Arctic. *Can. Envir. Assess. Agency, Res. & Develop. Monogr. Ser.* Electronic publication: http://www.ceaa-acee.gc.ca/015/001/028/index_e.htm
- Fortin, D., H. Beyer, M. S. Boyce, D. W. Smith, and J. S. Mao. 2005. Wolves influence elk movements: behavior shapes a trophic cascade in Yellowstone National Park. *Ecology* **86**:1320–1330.
- Nielsen, S. E., C. J. Johnson, D. C. Heard, and M. S. Boyce. 2005. Can models of presence-absence be used to scale abundance? Two case studies considering extremes in life history. *Ecography* **28**:197–208.
- Xu, C., M. S. Boyce, M. Gadgil, and V. Nanjundiah. 2005. Forecasting spatially structured populations: the role of dispersal and scale. *J. Theor. Biol.* **233**:177–189.
- Xu, C., and M. S. Boyce. 2005. Dynamic complexities in a mutual interference host-parasitoid model. *Chaos, Solitons & Fractals* **24**:175–182.
- Johnson, C. J., M. S. Boyce, C. C. Schwartz, and M. A. Haroldson. 2004. Modeling survival: application of the multiplicative hazards model to Yellowstone grizzly bear. *J. Wildl. Manage.* **68**:966–978.
- Johnson, C. J., M. S. Boyce, R. Mulders, A. Gunn, R. J. Gau, H. D. Cluff, and R. L. Case. 2004. Quantifying patch distribution at multiple spatial scales: applications to habitat models. *Landsc. Ecol.* **19**:869–882.

- Nielsen, S. E., M. S. Boyce, and G. B. Stenhouse. 2004. Grizzly bears and forestry I.: Selection of clearcuts by grizzly bears in west-central Alberta, Canada. *Forest Ecol. and Manage.* **199**:51–65.
- Nielsen, S. E., R. H. M. Munro, E. Bainbridge, M. S. Boyce, and G. B. Stenhouse. 2004. Grizzly bears and forestry II: Distribution of grizzly bear foods in clearcuts in west-central Alberta, Canada. *Forest Ecol. and Manage.* **199**:67–82.
- Fortin, D., M. S. Boyce, E. H. Merrill, and J. Fryxell. 2004. Foraging costs of vigilance in large mammalian herbivores. *Oikos* **107**:172–180.
- Nielsen, S. E., S. Herrero, M. S. Boyce, B. Benn, R. D. Mace, M. L. Gibeau, and S. Jevons. 2004. Modelling the spatial distribution of human-caused grizzly bear mortalities in the Central Rockies Ecosystem of Canada. *Biol. Conserv.* **120**:101–113.
- Niemuth, N., and M. S. Boyce. 2004. Influence of landscape composition on sharp-tailed grouse lek location and attendance in Wisconsin pine barrens. *Écoscience* **11**:209–217.
- Naugle, D.E., C.L. Aldridge, B.L. Walker, T.E. Cornish, B.J. Moynahan, M.J. Holloran, K.Brown, G.D. Johnson, E.T. Schmidtman, R.T. Mayer, C.Y. Kato, M.R. Matchett, T.J. Christiansen, W.E. Cook, T. Creekmore, R.D. Falise, E.T. Rinkes, and M.S. Boyce. 2004. West Nile virus: pending crisis for Greater Sage-Grouse. *Ecol. Lett.* **7**:704–713.
- Fortin, D., M. S. Boyce, and E. H. Merrill. 2004. Multi-tasking by mammalian herbivores: overlapping processes during foraging. *Ecology* **85**:2312–2322.
- Frair, J. L., S. E. Nielsen, E. H. Merrill, S. Lele, M. S. Boyce, R. H.M. Munro, G. B. Stenhouse, and H. L. Beyer. 2004. Removing habitat-induced, GPS-collar bias from inferences of habitat selection. *J. Appl. Ecol.* **41**:201–212.
- Johnson, C. J., D. R. Seip, and M. S. Boyce. 2004. A quantitative approach to conservation planning: Using resource selection functions to map the distribution of mountain caribou at multiple spatial scales. *J. Appl. Ecol.* **41**:238–251.
- Radeloff, V. C., D. J. Mladenoff, R. P. Guries, and M. S. Boyce. 2004. Spatial patterns of cone serotiny in *Pinus banksianain* relation to fire disturbance. *For. Ecol. & Manage.* **189**:133–141.
- Aldridge, C. L., M. S. Boyce, and R. K. Baydack. 2004. Adaptive management of prairie grouse: how do we get there? *Wildl. Soc. Bull.* **32**: 92–103.
- Boyce, M. S., J. S. Mao, E. H. Merrill, D. Fortin, M. G. Turner, J. Fryxell, and P. Turchin. 2003. Scale and heterogeneity in habitat selection by elk in Yellowstone National Park. *Écoscience* **10**: 421–431.
- Boyce, M. S., and J. S. Waller. 2003. Grizzly bears for the Bitterroots: predicting potential abundance and distribution. *Wildl. Soc. Bull.* **31**:670–683.
- Nielsen, S. E., M. S. Boyce, G. B. Stenhouse, and R. H. M. Munro. 2003. Development and testing of phenologically driven grizzly bear habitat models. *EcoScience* **10**:1–10.
- Nielsen, S. E., M. S. Boyce, G. B. Stenhouse, and R. H. M. Munro. 2002. Modeling grizzly bear habitats in the Yellowhead ecosystem of Alberta: taking autocorrelation seriously. *Ursus* **13**:45–56.
- Boyce, M. S., P. R. Vernier, S. E. Nielsen, and F. K. A. Schmiegelow. 2002. Evaluating resource selection functions. *Ecol. Modelling* **157**:281–300.
- Boyce, M. S. 2002. Wolves and human communities (book review). *Q. Rev. Biol.* **77**:216.
- Boyce, M. S., E. M. Kirsch, and C. Servheen. 2002. Bet-hedging applications for conservation. *J. Biosci.* **27**:385–392.

- Boyce, M. S. 2002. Population cycles in ecosystem context (book review). *Ecology* **83**:2064–2065.
- Boyce, M. S. 2002. Reconciling the small population and declining population paradigms. Pages 41–49 In: *Population Viability Analysis*, (S. Beissinger and D. R. McCullough, eds.). University of Chicago Press, Chicago.
- Boyce, M. S. 2002. Statistics as viewed by biologists. *J. Agr. Biol. Environ. Stat.* **7**:306–312.
- Brown, J. A., and M. S. Boyce. 2001. A survey design for monitoring butterflies. *Statistica* **61**:291–299.
- Haydon, D.T., N. C. Stenseth, M. S. Boyce, and P. C. Greenwood. 2001. Phase coupling and synchrony in the spatio-temporal dynamics of muskrat and mink populations across Canada. *Proc. National Academy of Sciences, USA* **98**(23):13149–13154.
- Viljugrein, H., O. Chr. Lingjærde, N. Chr. Stenseth, and M. S. Boyce. 2001. Spatio-temporal patterns of mink and muskrat in Canada during a quarter century. *J. Anim. Ecol.* **70**:671–682.
- Erb, J. D., M. S. Boyce, and N. Chr. Stenseth. 2001. Spatial variation in mink and muskrat interactions in Canada. *Oikos* **93**:365–375.
- MacKenzie, D. I., and M. S. Boyce. 2001. Estimating closed population size using negative binomial models. *Western Black Bear Workshop* **7**:21–23.
- Boyce, M. S., D. I. MacKenzie, B. F. J. Manly, M. Haroldson, and D. Moody. 2001. Negative binomial models for abundance estimation of multiple closed populations. *J. Wildl. Manage.* **65**:498–509.
- Erb, J. D., M. S. Boyce, and N. Chr. Stenseth. 2001. Population dynamics of large and small mammals. *Oikos* **92**:3–12.
- Boyce, M. S. 2001. Greater Yellowstone predators: a summary. Pages 37–40 In: *Greater Yellowstone Predators: Ecology and Conservation in a Changing Landscape*, (A. P. Curlee, A. M. Gillesberg, and D. Casey, eds.). Northern Rockies Conservation Cooperative, Jackson, Wyoming.
- Boyce, M. S. 2001. Population viability analysis: development, interpretation, and application. Pages 123–136 In: *Modeling in natural resource management: development, interpretation and application*, (T. M. Shenk and A. B. Franklin, eds.). Island Press, Washington, D. C.
- Boyce, M. S., B. M. Blanchard, R. R. Knight, and C. Servheen. 2001. Population viability for grizzly bears: a critical review. *Internat. Assoc. for Bear Res. and Manage., Monogr. Ser.* No. 4.
- Niemuth, N. D., and M. S. Boyce. 2000. Enhanced avian diversity in Wisconsin pine barrens through aggregated timber harvest. *Trans. N. Am. Wildl. Nat. Resour. Conf.* **65**:184–199.
- Radeloff, V. C., D. J. Mladenoff, and M. S. Boyce. 2000. The changing relation of landscape pattern to jack pine budworm populations during an outbreak. *Oikos* **90**:417–430.
- Radeloff, V. C., D. J. Mladenoff, and M. S. Boyce. 2000. A historical perspective and future outlook on landscape scale restoration in the northwest Wisconsin pine barrens. *Restoration Ecology* **8**:119–126.
- Boyce, M. S. 2000. Whaling models for conservation. Pages 109–126 In: *Quantitative Methods for Conservation Biology*, ch. 8 (S. Ferson and M. Burgman, eds.). Springer-Verlag, New York.

- Boyce, M. S. 2000. Modeling predator-prey dynamics. Pages 253–287 In: *Research Techniques in Animal Ecology: Controversies and Consequences*. (L. Boitani and T. K. Fuller, eds.). Columbia Univ. Press, New York, N.Y.
- Radeloff, V. C., D. J. Mladenoff, and M. S. Boyce. 2000. Effects of interacting disturbances on landscape patterns: budworm defoliation and salvage logging. *Ecol. Appl.* **10**:233–247.
- Erb, J. D., M. S. Boyce, and N. C. Stenseth. 2000. Geographic variation in the dynamics of muskrat populations in Canada. *Can. J. Zool.* **78**:1009–1016.
- Boyce, M. S., A. R. E Sinclair, and G. C. White. 1999. Seasonal compensation of predation and harvesting. *Oikos* **87**:419–426.
- Boyce, M. S., and E. M. Anderson. 1999. Evaluating the role of carnivores in the Greater Yellowstone Ecosystem. Pages 265–283 In: *Carnivores in Ecosystems*, (T. W. Clark, C. P. Curlee, S. C. Minta, and P. M. Kareiva, eds.). Yale Univ. Press, New Haven, Conn.
- Radeloff, V. C., D. J. Mladenoff, H. S. He, and M. S. Boyce. 1999. Forest landscape change: The northwest Wisconsin Pine Barrens before European settlement and today. *Can. J. For. Res.* **29**:1649–1659.
- Noon, B. R., R. H. Lamberson, M. S. Boyce, and L. L. Irwin. 1999. Population viability analysis: a primer on its principal technical concepts. Pages 87–134 in N. C. Johnson, A. J. Malk, W. T. Sexton, and R. C. Szaro, eds. *Ecological Stewardship: A Common Reference for Ecosystem Management*. Vol. 2. Elsevier Science, New York.
- Boyce, M. S., and L. L. McDonald. 1999. Relating populations to habitats using resource selection functions. *Trends Ecol. Evol.* **14**:268–272.
- Radeloff, V. C., D. J. Mladenoff, and M. S. Boyce. 1999. Detecting jack pine budworm defoliation using spectral mixture analysis: separating effects from determinants. *Remote Sensing of Environment* **69**:156–169.
- Erb, J. D., and M. S. Boyce. 1999. Distribution of population declines in large mammals. *Conserv. Biol.* **13**:199–201.
- Niemuth, N. D., and M. S. Boyce. 1998. Disturbance in Wisconsin pine barrens: implications for management. *Trans. Wisc. Acad. Sci. Arts & Letters* **86**:167–176.
- Boyce, M. S. 1998. Ecological-process management and ungulates: Yellowstone's conservation paradigm. *Wildl. Soc. Bull.* **26**:391–398.
- Meyer, J. S., L. L. Irwin, and M. S. Boyce. 1998. Influence of habitat abundance and fragmentation on spotted owls in western Oregon. *Wildl. Monogr.* No. 139.
- Brown, J. A., and M. S. Boyce. 1998. Line transect sampling of Karner blue butterflies. *Environ. Ecol. Statistics* **5**(1):81–91.
- Niemuth, N., and M. S. Boyce. 1997. Edge-related nest losses in Wisconsin pine barrens. *J. Wildl. Manage.* **61**:1234–1238.
- Nations, C., and M. S. Boyce. 1997. Stochastic demography for conservation biology. Pages 451–469 In: *Structured Population Models in Marine, Terrestrial, and Freshwater Systems*, (S. Tuljapurkar and H. Caswell, eds.), Chapman and Hall, New York, N.Y.
- Niemuth, N., and M. S. Boyce. 1995. Spatial and temporal patterns of predation of simulated sage grouse nests at high and low nest densities: An experimental study. *Can. J. Zool.* **73**:819–825.
- Boyce, M. S. 1995. Anticipating consequences of wolves in Yellowstone: Model validation. Pages 199–209 In: *Ecology and Conservation of Wolves in a Changing World*, (L. Carbyn, S. Fritts, and D. Seip, eds.). Canadian Circumpolar Institute, Edmonton, Alberta, Canada.

- Spurrier, M. S., M. S. Boyce, and B. F. J. Manly. 1994. Lekking behavior in captive Sage Grouse *Centrocercus urophasianus*. *Anim. Behav.***47**:303–310.
- Boyce, M. S. 1994. Brucellosis and the future of Greater Yellowstone. *Yellowstone Science* 3(1):15–16.
- Meyer, J. S., and M. S. Boyce. 1994. Life historical consequences of pesticides and other insults to vital rates. Pages 349–363 In: *Wildlife Toxicology and Population Modeling: Integrated Studies of Agroecosystems*. (R. J. Kendall and T. E. Lacher, eds.) Lewis Publishers, Washington, D.C.
- Boyce, M. S. 1994. Biodiversity at risk: Deforestation. Pages 151–161 In: *Biological Diversity: Problems and Challenges* (S. K. Majumdar, F. J. Brenner, J. E. Lovich, J. F. Schalles, and E. W. Miller, eds.), Ch.13. Pennsylvania Academy of Science, Easton, Penn.
- Boyce, M. S. 1994. Population viability analysis exemplified by models for the northern spotted owl. Pages 3–18 In: *Statistics in Ecology and Environmental Monitoring*, (D. J. Fletcher and B. F. J. Manly, eds.). Otago Conference Series No. 2, Univ. Otago Press, Dunedin, New Zealand.
- Boyce, M. S., J. S. Meyer, and L. L. Irwin. 1994. Habitat-based PVA for the northern spotted owl. Pages 63–85 In: *Statistics in Ecology and Environmental Monitoring*, (D. J. Fletcher and B. F. J. Manly, eds.). Otago Conference Series No. 2, Univ. Otago Press, Dunedin, New Zealand.
- Liou, L., T. Price, M. S. Boyce, and C. M. Perrins. 1993. Fluctuating environments and clutch size evolution in Great Tits. *Am. Nat.***141**:507–516.
- Boyce, M. S. 1993. Population viability analysis: Adaptive management for threatened and endangered species. *Trans. N. Am. Wildl. Nat. Res. Conf.***58**:520–527.
- Boyce, M. S. 1993. Predicting the consequences of wolf recovery to ungulates in Yellowstone National Park. Pages 234–269 In: *Ecological Issues on Reintroducing Wolves into Yellowstone National Park*, (R. S. Cook, ed.). Scientific Monograph NPS/NRYELL/NRSM-93/22, U.S. Department of the Interior, National Park Service, U.S. Government Printing Office.
- Menkens, G. E., Jr., and M. S. Boyce. 1993. Comments on the use of time-specific and cohort life tables. *Ecology***74**:2164–2168.
- Merrill, E. H., M. K. Bramble-Brodahl, R. W. Marris, and M. S. Boyce. 1993. Estimation of green herbaceous phytomass from Landsat MSS data in Yellowstone National Park. *J. Range Manage.***46**:151–156.
- Boyce, M. S. 1992. Population viability analysis. *Ann. Rev. Ecol. Syst.***23**:481–506.
- Boyce, M. S., L. H. Metzgar, and J. T. Peters. 1992. Bighorn sheep and horses on the Bighorn Canyon National Recreation Area: Wilderness or pasture? Pages 51–67 In: *Wilderness Issues in the Arid Lands of the Western United States*, (S. I. Zeweloff, and C. M. McKell, eds.) Univ. New Mexico Press, Albuquerque, 145pp.
- Boyce, M. S. 1991. Migratory behavior and management of elk (*Cervus elaphus*). *Appl. Anim. Behav. Sci.***29**:239–250.
- Boyce, M. S., and E. H. Merrill. 1991. Effects of the 1988 fires on ungulates in Yellowstone National Park. *Proc. Tall Timbers Fire Ecol. Conf.***17**:121–132.
- Johnson, G. D., and M. S. Boyce. 1991. Survival, growth, and reproduction of captive-reared Sage Grouse. *Wildl. Soc. Bull.***19**:88–93.

- Johnson, L. L., and M. S. Boyce. 1991. Female choice of males with low parasite loads in Sage Grouse. Pages 377-388 In: *Bird-Parasite Interactions: Ecology, Evolution and Behavior*, (J. E. Loye and M. Zuk, eds.), Oxford University Press, Oxford, U.K.
- Spurrier, M. F., M. S. Boyce, and B. F. J. Manly. 1991. Effects of parasites on mate choice by captive Sage Grouse, *Centrocercus urophasianus*. Pages 389-398 In: *Bird-Parasite Interactions: Ecology, Evolution and Behavior*, (J. E. Loye, and M. Zuk, eds.), Oxford University Press, Oxford, U.K.
- Boyce, M. S. 1990. The Red Queen visits sage grouse leks. *Amer. Zool.* 30:263-270.
- Johnson, G. D., and M. S. Boyce. 1990. Feeding trials with insects in the diet of Sage Grouse chicks. *J. Wildl. Manage.* 54:89-91.
- Boyce, M. S. 1989. Bet hedging of avian life histories. *Acta Congressus Internationalis Ornithologici* 19(2):2131-2139.
- Boyce, M. S., and C. M. Perrins. 1987. Optimizing Great Tit clutch size in a fluctuating environment. *Ecology* 68:142-153.
- Boyce, M. S. 1987. Time-series analysis and forecasting of the Aransas/Wood Buffalo Whooping Crane population. *Proc. Int. Crane Workshop* 4:1-9.
- Meyer, J. S., C. G. Ingersoll, L. L. McDonald, and M. S. Boyce. 1986. Estimating uncertainty in population growth rates: Jackknife vs. bootstrap techniques. *Ecology* 67:1156-1166.
- Stromberg, M. R., and M. S. Boyce. 1986. Systematics and conservation of the swift fox. *Biol. Conserv.* 35:97-110.
- Zeveloff, S. I., and M. S. Boyce. 1986. Maternal investment in mammals. *Nature* 321:537-538.
- Boyce, M. S., and R. S. Miller. 1985. Ten-year periodicity in Whooping Crane census. *Auk* 102:658-660.
- Lindstedt, S. L., and M. S. Boyce. 1985. Seasonality, fasting endurance and body size in mammals. *Am. Nat.* 125:873-878.
- Bobek, B., M. S. Boyce, and M. Kosobucka. 1984. Factors affecting red deer (*Cervuselaphus*) population density in Southeastern Poland. *J. Applied Ecol.* 21:881-890.
- Boyce, M. S. 1984. Restitution of *r*- and *K*-selection as a model of density-dependent natural selection. *Ann. Rev. Ecol. Syst.* 15:427-47.
- Sauer, J. R., and M. S. Boyce. 1983. Density-dependence and survival of elk in Northwestern Wyoming. *J. Wildl. Manage.* 47:31-37.
- Zeveloff, S. I., and M. S. Boyce. 1982. Why human neonates are so altricial. *Am. Nat.* 120:537-542.
- Boyce, M. S., and J. Tate, Jr. 1982. Pronghorn (*Antilocapra americana*) demography and hunting quotas in the PowderRiver Basin, Wyoming. *Proc. Int. Congr. Game Biol.* 14:101-106.
- Boyce, M. S. 1981. Beaver life history responses to exploitation. *J. Appl. Ecol.* 18:749-753.
- Boyce, M. S. 1981. Robust canonical correlation of sage grouse habitat, Pages 152-159 In: *The Use of Multivariate Statistics in Studies of Wildlife Habitat*, (D. Capen, ed.), Rocky Mtn. Forest and Range Exp. Sta., Fort Collins, CO., 249pp.
- Zeveloff, S. I., and M. S. Boyce. 1980. Parental investment and mating systems in mammals. *Evolution* 34:973-982.
- Meinke, D. K., K. Padian, J. Kappelman, M. S. Boyce, J. R. Bolt, R. E. DeMar, and P. A. Johnston. 1980. Growth rings in dinosaur teeth. *Nature* 288:193-195.
- Boyce, M. S., and D. J. Daley. 1980. Population tracking of fluctuating environments and natural selection for tracking ability. *Am. Nat.* 115:480-491.

- Boyce, M. S. 1979. Seasonality and patterns of natural selection for life histories. *Am. Nat.* **14**:569–583.
- Boyce, M. S. 1978. Climatic variability and body size variation in the muskrats (*Ondatra zibethicus*) of North America. *Oecologia* **36**:1–19.
- Boyce, M. S. 1977. Population growth with stochastic fluctuations in the life table. *Theor. Popul. Biol.* **12**:366–373.
- Boyce, M. S., and J. J. Boyce. 1976. Pleistocene extinctions. *Science* **191**:102.
- Menzel, B., and M. S. Boyce. 1973. First record of the pearl dace, *Semotilus margarita* (Cope), from Iowa. *Iowa State J. Res.* **47**(4):245–248.

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Johnson, G. D. 1987. M.S. thesis, University of Wyoming, Laramie.
Meyer, J. S. 1986. Ph.D. dissertation, University of Wyoming, Laramie.
Walker, D. 1986. Ph.D. dissertation, University of Wyoming, Laramie.
Guenzel, R. 1986. M.S. thesis, Univ. Wyo.
Hayden, S. L. 1984. M.S. thesis, University of Wyoming, Laramie.
Zeveloff, S. I. 1981. Ph.D. dissertation, University of Wyoming, Laramie.
Postovit, B. C. 1981. M.S. thesis, University of Wyoming, Laramie.
Sauer, J. R. 1980. M.S. thesis, University of Wyoming, Laramie.
Rothenmaier, D. 1979. M.S. thesis, Univ. Wyo.
Pelton, V. 1978. M.S. thesis, University of Wyoming, Laramie.

POSTDOCTORAL STUDENTS/RESEARCH ASSOCIATES:

Dr. Henrick Thurffjell, 2013-2015, Swedish Science Fund Fellow.
Dr. Simone Ciuti, 2010-2013, NSERC-CRD supported Postdoc.
Dr. David Latham, 2010-2011, PTAC-supported Postdoc (cut short to accept job with Landcare in New Zealand).
Dr. Cailin Xu, 2003-2007, Killam Postdoctoral Fellow.
Dr. Michael Proctor, 2004-2006, Alberta Ingenuity Postdoctoral Scholar.
Dr. Scott Nielsen, 2004-2006, NSERC-CRD supported Postdoc.
Dr. Susan Lingle, 2003-2005, Alberta Ingenuity Postdoctoral Scholar (joint with the University of Lethbridge).
Dr. Christopher Johnson, 2000-2003, NSERC Postdoctoral Fellowship.
Dr. Daniel Fortin, 2001-2003, NSF Postdoc.
Dr. Christopher Nice, 1998-99, University of Wisconsin Consortium Grant.
Dr. Jennifer A. Brown, 1995-96, National Fish and Wildlife Foundation supported postdoctoral.
Dr. Cormack C. Gates, 1992-93, Visiting NWT Scholar.
Dr. Jean-Michel Gaillard, 1990-91, NSF/CNRS Postdoctoral Fellowship.

CONTRACTS & GRANTS (last 5 yrs)

Funded Projects as PI

Start Date	End Date	Total Award	Granting Agency
Wildlife in an increasingly variable world			
04/01/2008	03/31/2015	\$447,600	National Sciences and Engineering Research Council of Canada (NSERC)
Yellowstone elk response to wolves			
01/01/2006	02/01/2008	\$32,930	Campfire Conservation Fund
Models for pheasant habitats in SE Alberta			
01/01/2006	03/31/2011	\$74,273	Private Donation
03/01/2006	02/28/2007	\$4,500	Alberta Sports, Recreation, Parks, and Wildlife Foundation (ASRPWF)
04/01/2006	03/31/2007	\$8,000	Alberta Conservation Association (ACA)
Otter habitat selection			
03/01/2006	02/28/2007	\$5,000	ASRPWF
West Nile virus and sage-grouse conservation in Alberta			
06/01/2006	03/31/2007	\$2,000	ASRPWF
10/01/2007	06/27/2008	\$2,500	ACA
Effects of baited spring black bear hunting in Alberta			
09/01/2006	05/09/2008	\$20,425	Alberta Professional Outfitters Society (APOS)
Evaluation of caribou management strategies			
02/01/2007	01/31/2008	\$3,000	ASRPWF
04/01/2007	12/14/2007	\$11,000	World Wildlife Fund Canada (WWFC)
04/01/2008	03/31/2009	\$20,000	Mountain Equipment Co-op
05/01/2008	01/31/2009	\$2,500	ASRPWF
Evaluating the Abundance of the Western Grebe in Alberta			
01/01/2006	12/31/2006	\$17,750	Ducks Unlimited
04/01/2007	03/31/2009	\$15,247	Ducks Unlimited
04/01/2009	03/31/2010	\$3,000	ACA
04/01/2009	03/31/2010	\$9,350	Ducks Unlimited
05/01/2009	10/31/2009	\$2,000	ASRPWF
05/31/2008	12/31/2008	\$5,000	ASRPWF
Effects of Access Management on Elk in SW Alberta			
04/01/2007	03/31/2008	\$2,000	APOS
10/01/2007	12/08/2009	\$12,392	Safari Club International Foundation (SCI)
01/01/2008	01/31/2011	\$2,600	ASRPWF
04/01/2008	04/23/2009	\$28,700	ACA
04/01/2009	11/08/2010	\$31,857	ACA
04/01/2011	03/31/2012	\$21,500	ACA
Donation	29/06/1905	\$2,600	SCI - Lake Superior Chapter
Cougar predation on wild ungulates			
04/01/2006	03/31/2007	\$15,731	Yellowstone to Yukon
04/19/2006	03/31/2008	\$35,000	Rocky Mountain Elk Foundation (RMEF)
07/01/2007	06/30/2008	\$2,581	Federation for North American Wild Sheep (FNAWS)

09/01/2007	08/31/2008	\$4,800	FNAWS
09/01/2007	12/31/2008	\$26,320	Shell Tay River Environmental Enhancement (TREE) Fund
04/01/2008	01/31/2009	\$3,000	SCI - Northern Alberta Chapter
04/01/2008	04/23/2009	\$30,000	ACA
05/01/2008	03/31/2009	\$10,000	APOS
Donation	2006	\$2,000	Calgary Zoo
Donation	2007	\$2,000	Conoco Philips
Donation	2007	\$10,000	Shell
Donation	2007	\$6,000	SCI - Ontario Chapter
Donation	2008	\$5,000	Calgary Zoo
Donation	2008	\$3,150	SCI
Donation	2008	\$5,000	SCI - Ontario Chapter
Donation	2008	\$10,000	Shell
Donation	2008	\$1,000	Eastern FNAWS
Donation	2008	\$2,000	Grand Slam club
Lynx cycles and barriers: evaluating dispersal versus climate change in flat-lining populations			
09/01/2007	01/31/2010	\$18,714	Seattle City Lights
11/01/2007	10/28/2010	\$5,000	ASRPWF
03/01/2008	05/27/2010	\$199,998	NSERC Strategic Grant
04/01/2009	10/12/2010	\$20,000	ACA
04/01/2010	12/31/2010	\$5,000	SCI-Northern Alberta Chapter
04/01/2010	03/31/2011	\$27,500	ACA-GECF
04/01/2010	03/31/2011	\$20,000	Mountain Equipment Co-op (c/o Red Deer Naturalists)
Ecology of cougars in the Cypress Hills of Alberta and Saskatchewan			
06/13/2007	03/31/2008	\$15,000	Alberta Tourism Parks and Recreation (ATPR)
01/01/2008	12/31/2008	\$5,000	ASRPWF
04/01/2008	03/31/2010	\$13,650	ACA Biodiversity
07/25/2008	02/15/2009	\$15,000	ATPR
07/01/2008	06/30/2009	\$4,900	Canadian Wildlife Federation
01/01/2009	12/31/2009	\$5,000	ASRPWF
04/01/2009	06/04/2010	\$25,750	ACA
04/01/2009	03/31/2010	\$2,000	SCI - Northern Alberta Chapter
09/01/2009	02/28/2010	\$15,000	ATPR
Donation	2008	\$5,000	Medicine Hat Fish and Game
Donation	2008	\$4,500	TD Friends of the Environment
Donation	2008	\$500	Miscellaneous
Donation	2009	\$250	Miscellaneous
Ecology of grizzly bears in response to open-pit mining			
01/01/2008	12/31/2008	\$16,885	Minister's Special License
04/01/2008	01/31/2009	\$2,850	SCI - Northern Alberta Chapter
04/01/2008	04/23/2009	\$30,000	ACA
04/01/2008	03/31/2011	\$5,223	International Bear Association (IBA)
04/01/2009	03/31/2010	\$5,000	ASRPWF
04/01/2009	03/31/2010	\$4,000	SCI - Northern Alberta Chapter

04/01/2009	03/31/2010	\$14,490	Teck Coal
04/01/2009	07/06/2010	\$20,000	ACA
04/01/2009	03/31/2010	\$5,610	IBA
05/01/2009	04/30/2010	\$7,500	Canadian Wildlife Federation
06/01/2009	05/31/2010	\$1,093	American Society of Mammalogists
01/01/2010	12/31/2010	\$14,490	Minister's Special License
04/01/2009	03/31/2010	\$10,000	Teck Coal
04/01/2010	03/31/2011	\$31,000	ACA
04/01/2010	03/31/2011	\$4,701	IBA
04/01/2010	01/26/2011	\$4,000	SCI - Northern Alberta Chapter
05/01/2010	03/31/2011	\$2,500	ASRPWF
05/01/2010	04/30/2011	\$4,400	Canadian Wildlife Federation
12/03/2010	12/02/2011	\$6,000	TD Friends of the Environment
03/19/2009	01/29/2011	\$9,000	TD Friends of the Environment
04/01/2011	03/31/2012	\$2,000	SCI – Northern Alberta
Donation	2009	\$16,000	Mountain Equipment Co-op
Access management for wildlife conservation			
05/01/2008	04/30/2013	\$699,510	NSERC
05/05/2008	05/04/2013	\$834,306	NSERC
Prey composition, habitat selection and movement of wolves in southwest Alberta			
04/01/2008	12/31/2009	\$2,600	ASRPWF
04/01/2008	11/30/2009	\$5,000	ASRPWF
04/01/2008	12/31/2009	\$5,185	SCI
04/01/2008	04/30/2010	\$3,000	SCI - Northern Alberta Chapter
10/15/2008	02/15/2009	\$15,000	ATPR
03/01/2009	08/31/2010	\$17,250	Alberta Beef Producers
10/01/2009	02/28/2010	\$10,000	ATPR
Donation	2008	\$556	Yellowstone to Yukon
Effects of Road and Access Management on Grizzly Bears			
04/01/2008	03/24/2009	\$3,500	SCI - Northern Alberta Chapter
04/01/2008	04/23/2009	\$24,200	ACA
04/01/2008	11/30/2009	\$4,000	SCI - Northern Alberta Chapter
04/01/2008	03/31/2009	\$25,000	WWFC
05/01/2008	10/31/2009	\$5,000	ASRPWF
04/01/2009	03/31/2010	\$18,500	ACA
05/01/2009	04/30/2010	\$2,280	WWFC
Donation	2008	\$800	Yellowstone to Yukon
Cougar distribution and prey selection in SW Alberta			
04/01/2010	12/31/2010	\$6,500	SCI - Northern Alberta Chapter
04/01/2010	03/31/2011	\$32,700	ACA
Study of the Space-Use of Deer in an Urban Setting			
04/01/2010	04/30/2010	\$1,250	ASRPWF
05/01/2010	04/30/2011	\$2,134	ASRPWF
04/01/2011	03/31/2012	\$3,000	ACA

Cougar-human interactions in the Cypress Hills			
01/01/2011	12/31/2011	\$3,000	ASRPWF
04/01/2011	03/31/2012	\$2,000	SCI – Northern Alberta
Donation	2010	\$21,000	Saskatchewan Government
Donation	2011	\$20,000	Saskatchewan Environment, Fish & Wildlife Development Fund
Donation	2010	\$2,500	Cypress Hills Cottage Association
Donation	2010	\$500	Maple Creek Fish and Game Assoc.
Donation	2010	\$500	Rural Municipality of Fox Valley
Population ecology of the Beverly herd of caribou			
Donation	2011	\$9,500	Private Donation
Large carnivore conflict management in southern Alberta			
04/01/2011	03/31/2012	\$9,020	ACA Grants in Biodiversity
05/01/2011	03/31/2012	\$64,000	Alberta Sustainable Resource Development, Fish & Wildlife
04/01/2011	03/31/2012	\$2,000	SCI – Northern Alberta
International Congress of Conservation Biology (ICCB 2010)			
03/01/2010	03/03/2011	\$99,289	ICCB Registration account
01/01/2011	12/31/2013	\$90,066	Carbon tax project account
03/01/2010	02/03/2011	\$234,335	Cash sponsor support (34 sponsors)
03/01/2010	02/03/2011	\$191,079	In-kind sponsor support
5 year funding total =		\$3,918,271	

Funded Projects as CoPI (last 5 yrs)

Latham, A. D. M., M. C. Latham, M. S. Boyce, and S. Boutin. 2012. Use of Anthropogenic Linear Features by Alternative Predators in Woodland Caribou Range. Alberta Upstream Petroleum Research Fund (AUPRF), \$52,880.

Boutin, S., M. S. Boyce, A. D. M. Latham, and R. Staniland. 2007. Research to guide woodland caribou management in Alberta. Environmental Research Advisory Council (ERAC) Broad Industry Initiatives (BII) Caribou Funding, \$192,000.

2003-2008 Wolf-elk dynamics, with E. Merrill and J. Fryxell, NSERC CRO, \$1,200,000.

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Memberships in professional societies

American Society of Mammalogists (life member).

Canadian Society for Ecology and Evolution.

Ecological Society of America.

Gamma Sigma Delta (honorary).

Phi Kappa Phi (honorary).

Sigma Xi (associate member 1975, full member 1978, Univ. Alberta Chapter 2000).

Society for Conservation Biology.

The Wildlife Society (Certified Wildlife Biologist, 2000).

Wild Sheep Foundation (life member, 2003).

Willmore Wilderness Foundation (life member, 2007).

Editor-in-Chief: *Journal of Wildlife Management*, 1995-1997.

Editor: *Ecology and Ecological Monographs*, 2001-2006.

Associate Editor: *I.M.A. Journal of Mathematics Applied in Medicine and Biology*, 1983-1994.

Editorial Board: *Environmental Conservation*, 2007-2010. *Oxford Bibliographies in Ecology*, 2010-present. *Animal Biotelemetry*, 2013-present.

Academic Editor: *PLoS One*, 2010-present.

PROFESSIONAL SERVICES (last 5 yrs)

Killam Annual Professorships Award review committee, Univ. Alberta, 2012-2013.

Banting Postdoctoral Fellowships Review Committee, NSERC, 2011-2014.

Chair, Search Committee for Editor in Chief, *Conservation Biology*, Society for Conservation Biology, 2012-2013.

Board of Directors, North American Section, Society for Conservation Biology, 2009-2012.

Policy Director, Northern Alberta Chapter of the Safari Club International, 2011-2013.

Society for Conservation Biology, Chair, Steering Committee, 2010 International Congress for Conservation Biology. March 2008-2010 (ICCB dates: 2010 July 3-7).

SLU University System, Sweden, Chair of Panel Reviewing Ecology and Environmental Sciences Programs. May 2009.

Workshop on fish habitat modelling, Alberta Conservation Association, May 2009.

Workshop on distance sampling, Alberta Conservation Association, Lethbridge, October 2008.

Workshop on statistics of aerial survey, Alberta Conservation Association, Blairmore, 2008.

Workshop on habitat selection models, Idaho Dept Fish and Game, McCall, ID, July 2007.

Workshop on aerial ungulate survey, Alberta Conservation Association, Edmonton, May 2007.

Secretary, Board of Directors, Northern Alberta Chapter, Safari Club International, May 2007-10.

Alberta Conservation Association, Board of Directors, 2002-present.

Chair, Operation Standards Review Committee, Board of Directors, Alberta Conservation Association, 2002-present.

INVITED PRESENTATIONS (last 5yrs)

2014, "Complex responses by prey to large carnivores in western North America," Gordon Conference, Ventura, California, January 9.

2013, "Response by ungulates to cougar recovery in Cypress Hills," Symposium, The Wildlife Society, Milwaukee, Wisconsin, USA, October 9.

2013, "Grasslands in Alberta: Soil Carbon storage," International Congress for Conservation Biology, Baltimore, Maryland, USA, July 24.

2013, "Moving into the digital age: a moose app for citizen science among hunters," Canadian Section of The Wildlife Society, Symposium on Citizen Science, Canmore, Alberta, March 9.

- 2013, "Selection functions: statistics, interpretations, and applications," Webinar for the Canadian Section of The Wildlife Society, January 25.
- 2013, "Selection, occupancy, and persistence," Morrison Lecture, Stanford University, Jan 16.
- 2012, "Montane elk program," Shell Canada, Calgary, November 9.
- 2012, "Wolf-caused Trophic Cascades in Yellowstone: Torrent or Trickle?" Symposium at The Wildlife Society Annual Conference, Portland, October 19.
- 2012, "Critical habitats for the critically endangered Greater Sage-Grouse," Plenary Address, CONFOR West, Banff, February 3.
- 2011, "Alberta needs a plan for trashing the boreal," Plenary Address, Canadian Section of The Wildlife Society Annual Conference, Thunder Bay, Ontario, September 25.
- 2011, "Tony's vision for parks and natural areas," Symposium Honouring A. R. E. Sinclair, Green College, University of British Columbia, Vancouver, September 17.
- 2011, "Selection, occupancy and persistence," Invited seminar, Centre for Conservation Biology, Norwegian University of Science and Technology, Trondheim, Norway, Aug 15.
- 2011, "Resource selection functions," Invited workshop, Hedmark University, Evenstad, Norway, Aug 9-12.
- 2011, "Wolf recovery in western North America," Invited Plenary Lecture, Summer School for Ph.D. students in ecology, Hedmark University, Evenstad, Norway, Aug 8.
- 2011, "Selection, occupancy and persistence," Invited seminar, Haldane Theatre, Silwood Park, Imperial College London, March.
- 2011, "Modelling habitat selection using resource selection functions," Invited research seminar, Grimsö Wildlife Research Station, SLU System, Grimsö, Sweden.
- 2011, "Wolf management in western North America," Invited colloquium, Grimsö Wildlife Research Station, SLU System, Grimsö, Sweden.
- 2011, "How wolves are managed in Alberta," Invited address, Symposium on managing wolves in western North America. Society for Range Management, Billings, Mont., Feb 10.
- 2010, "Resource selection functions: the fundamental equations of ecology," Invited seminar, Australian Centre for Evolutionary Biology & Biodiversity, Research Institute for Climate Change and Sustainability, University of Adelaide, South Australia, Nov. 26.
- 2010, "Resource selection functions for identifying critical habitat for threatened species," Invited seminar, CSIRO Ecosystems Laboratory, Brisbane, Queensland, October 12.
- 2010, "Landscapes of death: grizzly bears in Alberta," Invited seminar, Landcare Research, Lincoln, New Zealand, October 7.
- 2010, "Resource selection functions: the fundamental equations of ecology," Invited seminar, Spatial Ecology Laboratory, The Ecology Centre, University of Queensland, Brisbane, September 10.
- 2009, Keynote address, "Moose harvesting model." North American Moose Conference, Pocatello, Idaho, June.
- 2008, "Wolf-prey interactions in Yellowstone National Park." Invited talk at conference on wolf management, Mercantour National Park, France, December.
- 2008, "Wolf research in Alberta." Invited talk at conference on wolf management, Mercantour National Park, France, December.
- 2008, "Autocorrelation characteristics in GPS radiotelemetry data." Invited talk at a conference on the analysis of GPS radiotelemetry data, Trento, Italy, September 9.
- 2008, "Spatially structured elk-wolf models." Invited talk at a conference on spatially structured predator-prey models, Chize, France, September 27.

- 2008, "Understanding Alberta's Ungulates," Strategies to Reduce Wildlife-Vehicle Collisions on Alberta's Highways Workshop. 7th International Conference on Managing Pavement Assets, Calgary, Alberta, June 26.
- 2008, "Predator-prey interactions," Biologists training workshop. Alberta Sustainable Resource Development and Alberta Trappers Association, Dave Unger Trappers College, Debolt, Alberta. 2008 May 22.
- 2007, "Detecting trend in grizzly bear populations based on radiotelemetry data," International Association of Bear Research and Management, Monterrey, Mexico.
- 2007, "Building models of habitat using GIS," International Summer School, Białawieza Forest, Poland.
- 2007, "Modelling spatial distribution of weeds," Conference on Modelling Weeds, Canterbury University, New Zealand.
- 2007, "Access management for wildlife management in Alberta," Partners in Conservation conference, Alberta Conservation Association, Sherwood Park, Alberta.

CONTRIBUTED PAPERS(recent)

- 2012, "Managing Moose Populations by the Seat of Your Pants," Poster presentation, The Wildlife Society, Portland (Oct 19).
- 2012, "Managing Moose Populations by the Seat of Your Pants," National Fish and Wildlife Conservation Congress, Ottawa (May 29).
- 2012, "Coyote and black bear use of linear features in boreal caribou range." (w/ Latham, A. D. M., M. C. Latham, K. H. Knopff, and S. Boutin. Oral presentation at the 2012 Resource Access and Ecological Issues Forum, Calgary (26 November).
- 2012, "The influence of prey enrichment and industrial development on woodland caribou population declines." (w/ A. D. M. Latham, M. C. Latham, and S. Boutin). Oral presentation at the IVth International Wildlife Management Congress, Durban, South Africa (9–12 July).
- 2011, "The role of coyotes in woodland caribou declines." (w/A. D. M. Latham, M. C. Latham, and S. Boutin) Oral presentation at the Resource Access and Ecological Issues Forum (Prepared by the Petroleum Technology Alliance Canada, PTAC), Calgary (30 November).
- 2011, Invading deer and coyotes threaten woodland caribou populations in northeastern Alberta. (w/A. D. M. Latham, M. C. Latham, and S. Boutin) Oral presentation at the 15th Australasian Vertebrate Pest Conference, Sydney, Australia (20–23 June).
- 2011, "Flat-lining of Alberta lynx populations," (w/G. Yates), Canadian Society for Ecology and Evolution, Banff (May 14).
- 2011, "Cougars create a landscape of fear for ungulates in Cypress Hills," (w/ M. Bacon), Canadian Society for Ecology and Evolution, Banff (May 15).
- 2010, "Using autocorrelation functions to interpret behavioural patterns in GPS telemetry data," International Society for Behavioral Ecology, Perth, Australia (Oct 1).
- 2010, "Carbon and conservation," Annual Conference of the Alberta Chapter of The Wildlife Society, Edmonton (March).
- 2009, "Selection, choice, use and preference: clarifying concepts in resource selection," Annual Conference of The Wildlife Society, Monterey, California (w/S. Lele, E. Merrill, J. Keim, September 23).
- 2009, "Autocorrelation patterns determined by ecology and behavior," Annual Conference of The Wildlife Society, Monterey, California (September 23).

- 2009, "Finding harmony between grizzly bears and humans using access management," International Congress for Conservation Biology, Beijing, China (July 13).
- 2009, "Moose harvesting model," Annual Conference of the Alberta Chapter of The Wildlife Society, Edmonton (March).

PUBLIC SERVICE/POPULAR PRESENTATIONS (recent)

- 2013, "Genetics versus nutrition in horn size of bighorns." Wild Sheep Foundation, Red Deer, Alberta (March).
- 2011, "Why we should support parks," Fort Saskatchewan Fish and Game Association, Fort Saskatchewan, Alberta (September 21).
- 2011, "Declines of the Greater Sage Grouse in Alberta," Alberta Wilderness Association, Calgary (September 7).
- 2010, "Grizzly bears in Alberta's mountains," Alberta Alpine Club, Edmonton (March).
- 2009, "Grizzly bear populations in Alberta," Alberta Equestrian Federation, Edmonton, Alberta (October 15).
- 2009, "Predator-prey management," Wild Sheep Foundation-Alberta, Red Deer, Alberta (February).
- 2009, "Managing predator-prey systems," Willow Valley Trophy Club, Pincher Creek, Alberta (January 10).
- 2008, "Wolves, lions, and money," British Columbia Trappers Association, Keynote Address, Vanderhoof, BC (March).
- 2007, "Modelling the harvest of moose in Alberta," Foundation for North American Wild Sheep, Red Deer, Alberta (February).

COMMITTEES (recent)

- 2012-2014, Banting Postdoctoral Fellows Adjudication Committee, NSERC, Ottawa.
- 2012-2013, Chair, Search Committee for new editor for Conservation Biology, Society for Conservation Biology, Washington, D.C.
- 2012-2013, Killam Annual Professorships Adjudication Committee, University of Alberta.
- 2011, Chair, Donald Rusch Game Bird Research Scholarship Committee, The Wildlife Society.
- 2010-present, Policy Committee, North American Section, Society for Conservation Biology.
- 2010, Awards Committee, The Wildlife Society, Bethesda, Maryland.
- 2009, Border Issues for Conservation Committee, The Wildlife Society, Bethesda, Maryland.
- 2008-2011, Committee on the effects of oil and gas development on wildlife. The Wildlife Society, Washington, D.C.
- 2007-present, Conservation Committee, Alberta Chapter The Wildlife Society.
- 2007-2008, Search committee, fisheries biologist, Dept. Biological Sciences, Univ. Alberta.
- 2004-2010, Wisconsin Distinguished Professor review committee, University of Wisconsin System, Madison.
- 2004-2008, Meanook Field Station Steering Committee, Department of Biological Sciences, University of Alberta.
- 2004-2009, CCIS building committee, Faculty of Science, University of Alberta.

HONORS AND AWARDS

Emerald Award, Montane Research Program, Province of Alberta, June 2013
TWS Fellow, life-time award, 2012, The Wildlife Society, Bethesda, Maryland, USA.
Best Wildlife Publication Award “Popular Category,” 2012, Alberta Chapter of The Wildlife Society
Killam Annual Professorship, 2011-12, University of Alberta.
Publication of the Year Award, 2011, Alberta Chapter of The Wildlife Society
Award of Merit, 2010, Alberta Trappers Association.
William Rowan Distinguished Service Award, 2008, The Wildlife Society.
International Conservationist of the Year, 2007, Safari Club International Foundation, Washington, D.C.
Erskine Fellowship, 1999, Canterbury University, Christchurch, New Zealand.
Phi Kappa Phi, 1998, University of Wisconsin-Stevens Point.
University Scholar Award, 1996, University of Wisconsin-Stevens Point.
Chancellor’s Merit Award, 1996, University of Wisconsin-Stevens Point.
Faculty Scholar Award, 1994, Sigma Xi-University of Wisconsin-Stevens Point Chapter.
Distinguished Professorship, 1993, 1999 University of Wisconsin System, Madison.
Vallier Chair of Ecology, 1993, University of Wisconsin-Stevens Point.
Outstanding Research Merit Award, 1993, College of Arts and Sciences, Univ. Wyoming.
Fulbright Scholar to India, 1992, U.S. Educational Foundation in India, Bangalore.
Senior Research Fellow, 1991-92, American Institute of Indian Studies, Bangalore.
Kuehn Professorship Award, 1984-85, College of Arts and Sciences, University of Wyoming.
N.A.T.O. Postdoctoral Fellowship, 1982-83, National Science Foundation, Univ. Oxford, UK.
Academy Exchange to Poland, 1982, National Academy of Sciences, Jagiellonian University.
Outstanding Achievement Award, 1974, University of Alaska, Fairbanks.