

CURRICULUM VITAE

NAME Mark S. Boyce

ADDRESS

PHONE

Department of Biological Sciences
University of Alberta
Edmonton, AB T6G 2E9
Canada

Office: (780)492-0081
Home: (780)439-3248
Fax: (780)492-9234
Cell: (780)913-3474

e-mail: boyce@ualberta.ca

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, and Alberta Conservation Association Chair in Fisheries and Wildlife, 1999-present, 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, University of Queensland, Brisbane, AUSTRALIA.

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

1991-92, American Institute of Indian Studies/Fulbright Fellowship, Centre for Ecological Sciences, 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.

HONORS AND AWARDS

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.

TEACHING (last 5 yrs)

<u>Year</u>	<u>Term</u>	<u>Course No./Title</u>	<u>Cr. Hrs.</u>	<u>Enrollment</u>
2010	Winter	Biol 331 Population Ecology	3	45
2009	Winter	Biol 331 Population Ecology	3	54
2008	Winter	Biol 331 Population Ecology	3	55
2008	Winter	Biol 633 Habitat Ecology	1	9
2007	Winter	Biol 331 Population Ecology	3	58
2006	Winter	Biol 331 Population Ecology	3	60

GRADUATE STUDENT SUPERVISION:

Graduate Degrees Supervised:

Bacon, M. M. 2010. M.Sc. thesis, Univ. Alberta.
Northrup, J. 2010. M.Sc. thesis, Univ. Alberta.
Morehouse, A. T. 2010. M.Sc. thesis, Univ. Alberta.
Knopff, K. H. 2010. Ph.D. dissertation, Univ. Alberta.
Erickson, M. 2010. M.Sc. thesis, Univ. Alberta.
Robichaud, C. 2009. M.Sc. thesis, Univ. Alberta.
Van Moortner, B. 2008. Ph.D. thesis, Universite Lyon, France. Co-supervised by Jean-Michel Gaillard.
Chetkiewicz, C. L. 2008. Ph.D. dissertation, Univ. Alberta.
Czetwertynski, S. 2008. Ph.D. dissertation, Univ. Alberta. Co-supervised with F. K. A. Schmiegelow.
McLash, T. 2008. M.Sc. thesis, Univ. Alberta.
Varley, N. 2007. Ph.D. thesis, Univ. Alberta.
Carpenter, J. 2006. M.Sc. thesis, Univ. Alberta.
Shier, C. 2006. M.Sc. thesis, Univ. Alberta.
Roever, C. 2006. M.Sc. thesis, Univ. Alberta.
Mullen, S. 2006. M.Sc. thesis, Univ. Alberta.
Beyer, H. 2006. M.Sc. thesis, Univ. Alberta.
Ciarniello, L. 2005. Ph.D. dissertation, Univ. Alberta.
Aldridge, C. 2005. Ph.D. dissertation, Univ. Alberta.
Nielsen, S. E. 2004. Ph.D. dissertation, Univ. Alberta.
Hurlburt, D. 2004. Ph.D. thesis, Univ. Alberta.
Smith, K. G. 2004. M.Sc. Thesis, University of Alberta.
Ripley, T. 2003. M.Sc. thesis, Univ. Alberta.
Mao, J. 2003. M.Sc. Thesis, University of Alberta.
Erb, J. 2000. Ph.D. dissertation, University of Wyoming, Laramie.
Keen, L. 2000. M.S. thesis, University of Wisconsin, Stevens Point.
Kneeland, Mary. 1999. M.S. Thesis, Univ. Wisconsin, Stevens Point.
Anderson, S. 1999. M.S. Thesis, Univ. Wisc.-Stevens Point.
Niemuth, N. 1995. Ph.D. dissertation, University of Wyoming, Laramie.
White, P. A. 1995. Ph.D. dissertation, University of Wyoming, Laramie.
Nations, C. 1994. M.S. thesis, University of Wyoming.
Fernandes, C. I. 1993. M.S. thesis, University of Wyoming, Laramie.
Holz, B. 1993. M. S., University of Wyoming.
Niemuth, N. D. 1992. M.S. thesis, University of Wyoming.
Spurrier, M. F. 1989. M.S. thesis, University of Wyoming.
Johnson, L. L. 1989. M.S. thesis, University of Wyoming.
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. Simone Ciuti, 2010-2012, NSERC-CRD supported Postdoc.
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, Lethbridge, Alberta).
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 Scholar.
Dr. Jean-Michel Gaillard, 1990-91, NSF/CNRS Postdoctoral Fellowship.

CONTRACTS & GRANTS (last 5 yrs)

Funded Projects as PI

2008-2013 Access management for conservation of elk, wolves, and grizzly bears in Alberta. NSERC CRD grant, \$1,650,000.
2008-2010 Lynx cycles and barriers: evaluating dispersal versus climate change in flatlining populations. NSERC Strategic Supplemental Project Grant, \$199,998.
2008-2009 The role of behavioural adaptation in safeguarding a species: grizzly bear response to encroaching development in the foothills of Alberta. Alberta Conservation Association, Grant Eligible Conservation Fund, \$30,000.
2008-2009 Effects of access management on elk in southwestern Alberta. Alberta Conservation Association, Grant Eligible Conservation Fund, \$28,700.
2008-2009 Effects of roads and road access management on grizzly bear habitat use and movement. Alberta Conservation Association, Grant Eligible Conservation Fund, \$24,200.
2008-2009 Ecology of cougars in the Cypress Hills of Alberta and Saskatchewan. TD Friends of the Environment Foundation, \$4,500.
2007 Caribou response to wolf control programme. World Wildlife Fund, Endangered Species Recovery Fund, \$11,000.
2007 Evaluation of caribou management strategies. Alberta Sports Recreation Parks & Wildlife Foundation, \$3,000.
2007-2008 Lynx cycles and barriers. Seattle City Lights, \$11,000.
2006-2007 Cougar predation on wild ungulates. Hunting Heritage Fund, Northern Alberta Chapter of Safari Club International, \$2,500.
2005-2008 Cougar predation on wild ungulates. Calgary Zoo, \$6,000.
2006-2008 Access management and movements of elk and grizzly bears in SW Alberta. Shell Canada, \$450,000.

- 2006-2007 Models for pheasant habitats in SE Alberta. Alberta Conservation Association, Grant Eligible Conservation Fund, \$8,000.
- 2005-2007 Habitat models for ring-necked pheasants. Pheasants Forever, Bisset fund, \$52,000.
- 2006-2007 Effects of wolves and hunting on elk populations in Yellowstone National Park, Camp Fire Conservation Fund, Camp Fire Club of America (New York), \$32,930.
- 2006-2008 Waterbird distribution modelling, North American Waterfowl Management Plan, Ducks Unlimited, \$37,750.
- 2005-2007 Cougar predation on multiple prey in western Alberta. Alberta Professional Outfitters Society, \$5,000.
- 2005-2006 Furbearer response to landscape change, Alberta Conservation Association, Grant Eligible Conservation fund, \$12,835.
- 2005-2009 Cougar predation on multiple prey in western Alberta. Alberta Conservation Association, Grant Eligible Conservation Fund, \$90,016.
- 2005-2007 Cougar predation on multiple prey in western Alberta. Y2Y and Alberta Wilderness Association, \$15,731.
- 2005-2007 Cougar predation on multiple prey in western Alberta. Foundation for North American Wild Sheep, \$14,000.
- 2006-2008 Cougar predation on multiple prey in western Alberta. Grand Slam Club, \$30,000.
- 2006-2009 Cougar predation on multiple prey in western Alberta. Northern Alberta Chapter of Safari Club International, \$10,000.
- 2005-2006 Cougar predation on multiple prey in western Alberta. Rocky Fish and Game Association, \$6,000.
- 2005-2006 Harvest models for big game quota allocation in Alberta. Sherwood Park Fish and Game, Alberta Professional Outfitters Society, and Northern Alberta Chapter of Safari Club International, \$9,000.
- 2004-2006 Roads and grizzly bears in western Alberta. Foothills Model Forest, \$33,000.
- 2004-2009 Population dynamics emerging from habitat models, NSERC Discovery Grant, \$287,500.
- 2005-2006 West Nile virus and sage-grouse conservation in Alberta. World Wildlife Fund Canada, \$10,000.
- 2005-2006 West Nile virus and sage-grouse conservation in Alberta. Alberta Sport, Recreation, Parks & Wildlife Foundation, Ministry of Community Development, \$5,000.
- 2005-2006 West Nile virus and sage-grouse conservation in Alberta. Telus Conservation Fund, \$5,000.
- 2004-2006 Effects of baited spring black bear hunting in Alberta, Pope and Young Club, \$8,000.

Funded Projects as CoPI (last 5 yrs)

- 2006-2009 Factors influencing waterbird distribution in east-central Alberta, with C. Found, \$37,750
- 2003-2008 Wolf-elk dynamics, with E. Merrill and J. Fryxell, NSERC CRO, \$1,200,000.

SELECTED 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:

- 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.* (in press).
- Boyce, M. S., K. H. Knopff, J. Northrup, J. A. Pitt, and L. S. Vors. 2010. Harvest models and climate change. *In Conserving wildlife populations in a changing climate*. Editors: J. Brodie, E. Post, and D. Doak. Invited book chapter. (accepted, In press).
- Carpenter, J., C. L. Aldridge, and M. S. Boyce. 2010. Sage-grouse habitat selection during winter in Alberta. *J. Wildl. Manage.* **74**(8): (in press).
- 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. *International 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**: (early view, 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. 2009. 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 Biology* **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. McDonald, 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 banksiana* in 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.
- 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, PA.
- 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. Zeveloff, 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**:537-8.
- 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 (*Cervus elaphus*) 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 Powder River 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.* **114**: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.

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Memberships in professional societies

- American Society of Mammalogists (life member).
- American Society of Naturalists (elected 1980).
- British Ecological Society.
- Canadian Society for Ecology and Evolution.
- Ecological Society of America.
- Gamma Sigma Delta (honorary).
- International Society for Behavioural Ecology.
- 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.

PROFESSIONAL SERVICES (last 5 yrs)

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

Review Panel on ungulate management in the face of predation, Idaho Dept Fish and Game, McCall, ID, July 2006.

Review panel for the SAK model used by the Wisconsin Department of Natural Resources for managing white-tailed deer, Wisconsin Cooperative Wildlife Research Unit, Madison, Wisconsin, 2005-2006.

Workshop on study design, Alberta Conservation Association, Edmonton, 2006.

Grizzly Bear Recovery Team, Alberta Ministry of Sustainable Resource Development, 2002-2006.

Alberta Conservation Association, Board of Directors, 2002-2007.

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

INVITED PRESENTATIONS (last 6 yrs)

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, Bialawieza 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.
- 2006, "Fundamental Equations of Ecology," Dept. Seminar, Univ. California, Berkeley, December
- 2006, "Fundamental Equations of Ecology," Dept. Seminar, Imperial College Silwood Park, UK, May
- 2006, "Fundamental Equations of Ecology," Dept. Seminar, Biology, Univ. Calgary, March
- 2006, "Fundamental Equations of Ecology," Dept Seminar, Texas A & M University, March

Contributed Papers (recent)

- 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)

- 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)

- 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-present, Committee on the effects of oil and gas development on wildlife. The Wildlife Society, Washington, D.C.
- 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-present, CCIC building committee, Faculty of Science, University of Alberta.