

NAME Mark S. Boyce

ADDRESS

PHONE

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

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

e-mail: boyce@ualberta.ca

Orcid ID: orcid.org/0000-0001-5811-325X

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, Laramie.

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

NATO 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, Laramie.

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

HONORS AND AWARDS

Wilderness and Wildlife Defender's Award, 2019, Alberta Wilderness Association, Nov 23.
Publication of the Year Award (with Anne Loosen), 2019, Alberta Chapter of The Wildlife Society, March 16.
Patron, American Society of Mammalogists, 2018, elected July 16.
C. Hart Merriam Award, 2017, American Society of Mammalogists, June 24.
Special Recognition Team Award (with Evelyn H. Merrill), 2017, Alberta Chapter of The Wildlife Society, March 11.
Miroslaw Romanowski Medal, 2016, Royal Society of Canada, November 18.
ASTech Award, Outstanding Leadership in Alberta Science, 2014, Alberta Science and Technology Leadership Foundation, October.
Fellow, Royal Society of Canada, inducted 2014 November.
President's Award, 2014, Safari Club International, April 5.
Emerald Award, 2013, Montane Research Program, Province of Alberta, June.
Publication of the Year Award, 2013, Alberta Chapter of The Wildlife Society, March.
TWS Fellow, lifetime award, 2012, The Wildlife Society, Bethesda, Maryland, USA, October.
Best Wildlife Publication Award "Popular Category," 2012, Alberta Chapter of The Wildlife Society, March.
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.
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.

SABBATICALS

2018, Department of Zoology, University of Oxford, U.K.

2017, Centre of Excellence for Biosecurity Risk Analysis (CEBRA), University of Melbourne, AUSTRALIA.

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:

- Atmeh, K., et al. 2021. Neonatal antipredator tactics affect response of large herbivore females to spatio-temporal variation of resource around parturition. *Nature Ecol. Evol.* (submitted).
- Ma, Z., B. M. Shrestha, E. W. Bork, S. X. Chang, C. N. Carlyle, T. F. Döbert, L. S. Dobrinho, and M. S. Boyce 2021. Adaptive Multi-Paddock grazing does not have a decided advantage over conventional grazing in terms of field GHG mitigation. *Glob. Change Biol.* (submitted).
- Broekman, M. J. E., et al. 2021. Comparing habitat suitabilities retrieved from expert knowledge and tracking data for 45 mammal species. *Glob. Ecol. Biogeogr.* (submitted).
- Döbert, T. F., E. W. Bork, S. Apfelbaum, C. Carlyle, S. Chang, U. Khatri-Chhetri, L. S. Sobrinho, R. Thompson, and M. S. Boyce. 2021. Adaptive multi-paddock (AMP)

- grazing improves water infiltration in Canadian grassland soils. *Geoderma* (GEODER-D-21-00312, in press).
- Li, T., T. F. Döbert, E. W. Bork, C. N. Carlyle, S. X. Chang, B. M. Shrestad, S. I. Apfelbaum, W. Salas, T. Salas, and M. S. Boyce. 2021. Assessing production, greenhouse gas emissions and carbon sequestration of Canadian grasslands using Denitrification-Decomposition modeling. *Agric. Syst.* (submitted).
- Sabal, M., M. S. Boyce, et al. 2021. Ecological and evolutionary effects of predators on migratory prey. *Trends Ecol. Evol.* (final revision submitted).
- Blythe, E. M., and M. S. Boyce. 2021. Conventional marking of ground nests might increase predation by Corvids. *Human-Wildl. Interact.* (submitted, special issue).
- Blythe, E. M., and M. S. Boyce. 2021. Duck nest predation risk in Alberta parklands. *Avian Conserv. Ecol.* (submitted).
- Proctor, M. F., C. T. Lamb, J. Boulanger, A. G. Machutchon, W. F. Kasworm, D. Paetkau, M. S. Boyce, and C. Servheen. 2021. The dance of berries and bullets: the influence of food resources and mortality risk on grizzly bear populations in southeastern British Columbia. *Wildl. Monogr.* (submitted).
- Grenke, J. S. J., E. W. Bork, C. N. Carlyle, M. S. Boyce, and J. F. Cahill. 2021. Intensively grazed and adaptively managed ranches support fewer plant species across multiple scales within the Northern Great Plains. *J. Appl. Ecol.* (submitted).
- Warbington, C. H., and M. S. Boyce. 2021. Ungulate community dynamics in a central Ugandan wetland under varying hydrologic conditions. *Mammal Res.* (submitted, EMID:8a0da770e8971982).
- Warbington, C. H., and M. S. Boyce. 2021. Population genetics of free-ranging sitatunga in the Mayanja River of central Uganda. *PLoS ONE* (submitted).
- Bork, E. W., T. F. Döbert, J. S. J. Grenke, C. N. Carlyle, J. F. Cahill Jr., and M. S. Boyce. 2021. A comparison of management regimes on neighboring cattle ranches with and without adaptive multi-paddock (AMP) grazing in western Canada. *Range Ecol. Manage.* (in press).
- Etter, D., M. M. Nichols, and M. S. Boyce. 2021. American and Pacific marten. In T. L. Hiller, ed. *Wild furbearer management and conservation in North America*. Ontario Trappers Association, Toronto, ON. (in press).
- Hood, G., and M. S. Boyce. 2021. Habitat selection. Chapter 8 In T. L. Hiller, ed. *Wild furbearer management and conservation in North America*. Ontario Trappers Association, Toronto, ON. (in press).
- Brownlee, M., M. S. Boyce, and C. Warbington. 2021. Estimating density of sitatunga (*Tragelaphus spekkii*) using time in front of the camera. *Afr. J. Ecol.* (revision submitted, AFJE-20-235).
- Nagy-Reis, M., J. Reimer, M. A. Lewis, W. F. Jensen, and M. S. Boyce. 2021. Aligning population models with data: adaptive management for big game harvests. *Global Ecol. Conserv.* **26**: e01501.
- Morehouse, A. T., A. E. Loosen, T. A. Graves, and M. S. Boyce. 2021. The smell of success: Fitness related to rub behavior in grizzly bears. *PLoS ONE* **16**(3): e0247964 (doi: 10.1371/journal.pone.0247964).
- Shrestha, B. M., E. W. Bork, S. X. Chang, C. N. Carlyle, Z. Ma, T. F. Döbert, D. Kaliaskar, and M. S. Boyce. 2020. Adaptive multi-paddock grazing lowers soil greenhouse gas

- emission potential by altering extracellular enzyme activity. *Agronomy* **10**: 1781, doi:10.3390/agronomy10111781.
- Gilbert, S., K. Hundertmark, M. Lindberg, D. Person, and M. S. Boyce. 2020. The importance of environmental variability and transient population dynamics for a northern ungulate. *Front. Ecol. Evol.* **8**:531027. (doi: 10.3389/fevo.2020.531027).
- Warbington, C. H., and M. S. Boyce. 2020. Population density of sitatunga in riverine wetland habitats. *Global Ecol. Conserv.* **23**:e01212. (doi: 10.1016/j.gecco.2020.e01212).
- Banfield, J. E., S. Ciuti, C. C. Nielsen, and M. S. Boyce. 2020. Cougar roadside habitat selection: incorporating topography and traffic. *Global Ecol. Conserv.* **23**:e01186. (doi.org/10.1016/j.gecco.2020.e01186).
- Scrafford, M. A., B. Nobert, and M. S. Boyce. 2020. Beaver (*Castor canadensis*) use of borrow pits in an industrial landscape in northwestern Alberta. *J. Environ. Manage.* **269**:110800.
- Boyce, M.S., and S. Ciuti. 2020. Data from: Human selection of elk behavioural traits in a landscape of fear. *Movebank Data Repository* (doi: 10.5441/001/1.j484vk24)
- Beale, M. M., and M. S. Boyce. 2020. Ungulate habitat selection on reclaimed coal mines in west-central Alberta. *Restor. Ecol.* **28**(4):828–840 (doi: 10.1111/rec.13137)
- Blythe, E. M., and M. S. Boyce. 2020. Trappings of success: Predator removal for duck nest survival in Alberta Parklands. *Diversity* **12**:119 (doi:10.3390/d12030119)
- Mallory, C. D., S. N. Williamson, M. W. Campbell, and M. S. Boyce. 2020. Response of barren-ground caribou to advancing spring phenology. *Oecologia* **192**: 837–852. (doi: 10.1007/s00442-020-04604-0)
- Proctor, M. F., W. Kasworm, J. Teisberg, C. Servheen, T. Radandt, C. Lamb, K. Kendall, R. Mace, D. Paetkau, and M. S. Boyce. 2020. American black bear population fragmentation detected with pedigrees in the trans-border Canada-United States Region. *Ursus* **31**e1:1-15. (doi.org/10.2192/URSUS-D-18-00003R2)
- Clark, J. D., M. S. Boyce, J. P. Beckmann, B. D. Leopold, A. Loosen, and M. R. Pelton. 2020. American black bear. In *Bears of the World*, V. Penteriani and M. Melletti (eds.) Chapter 11. Cambridge University Press, Cambridge, U.K.
- Privot, M., M. Musiani, M. S. Boyce, S. Kutz, and K. Orsel. 2020. Integrating livestock management and telemetry data to assess disease transmission risk between wildlife and livestock. *Prev. Vet. Med.* **174**:104846.
- Boyce, M. S. 2019. Adapting grassland grazing to boost carbon sequestration. *Scientia* **451** (doi.org/10.33548/SCIENTIA451)
- Proctor, M. F., B. N. McLellan, G. B. Stenhouse, G. Mowat, C. T. Lamb, and M. S. Boyce. 2019. Effects of roads and motorized human access on grizzly bear populations in British Columbia and Alberta, Canada. *Ursus* **30**: article e2
- Nagy-Reis, M., W. F. Jensen, and M. S. Boyce. 2019. Conservation Reserve Program is a key element for managing white-tailed deer populations at multiple spatial scales. *J. Environ. Manage.* **248**: 109299.
- Bowyer, R. T., M. S. Boyce, J. R. Goheen, and J. Rachlow. 2019. Conservation of the world's mammals: status, protected areas, community efforts, and hunting. *J. Mammal.* **100**: 923–941.
- Boyce, M. S., T. Coulson, J. Heffelfinger, and P. Krausman. 2019. Mountain sheep management must use representative data: A reply to Festa-Bianchet (2019). *J. Wildl. Manage.* **83**:9–11, DOI: 10.1002/jwmg.21617.

- Mallory, C. D., and M. S. Boyce. 2019. Prioritization of landscape connectivity for the conservation of Peary caribou. *Ecol. Evol.* **9**:1–17. <https://doi.org/10.1002/ece3.4915>.
- Loosen, A., A. T. Morehouse, and M. S. Boyce. 2019. Land tenure shapes black bear density and abundance on a multi-use landscape. *Ecol. Evol.* **9**:73–89.
- Ladle, A., T. Avgar, M. Wheatley, G. Stenhouse, S. Nielsen, and M. S. Boyce. 2019. Grizzly bear response to spatio-temporally variable human recreational activity. *J. Appl. Ecol.* **56**:375–386. DOI: 10.1111/1365-2664.13277.
- Warbington, C. H., and M. S. Boyce. 2018. Sitatunga in Mayanja River, Uganda. IUCN Species Survival Commission, Antelope Specialist Group, *Gnusletter* **35**(2):13-22.
- Boyce, M. S. 2018. Elk. Pages 20-21 in M. J. Kauffmanm, J. E. Meacham, H. Sawyer, A. Y. Steingisser, W. J. Rudd, and E. Ostlind. *Wild migrations: Atlas of Wyoming's ungulates*. Oregon State University Press, Corvallis, Ore. 183pp.
- Mawdsley, J. R., J. F. Organ, D. J. Decker, A. B. Forstchen, R. J. Regan, S. J. Riley, M. S. Boyce, J. E. McDonald, Jr., C. Dwyer, and S. P. Mahoney. 2018. Artelle et al. (2018) miss the science underlying North American wildlife management. *Science Adv.* **4**: eaat8281.
- Proctor, M. F., B. N. McLellan, G. B. Stenhouse, G. Mowat, C. T. Lamb, and M. S. Boyce. 2018. Resource Roads and Grizzly Bears in British Columbia, and Alberta. *Canadian Grizzly Bear Management Series*, Resource Road Management. Trans-border Grizzly Bear Project. Kaslo, BC. Canada
<http://transbordergrizzlybearproject.ca/research/publications.html>.
- Boyce, M. S. 2018. Wolves for Yellowstone: dynamics in time and space. *J. Mammal.* **99**:1021–1031. [cover photo]
- Scrafford, M. A., and M. S. Boyce. 2018. Temporal patterns of wolverine (*Gulo gulo luscus*) foraging in the boreal forest. *J. Mammal.* **99**:693–701.
- Morehouse, A., J. Tigner, and M. S. Boyce. 2018. Coexistence with large carnivores supported by a predator-compensation program. *Environ. Manage.* **61**:719–731.
- Scrafford, M. A., T. Avgar, R. Heeres, and M. S. Boyce. 2018. Roads elicit negative movement and habitat-selection responses by wolverines (*Gulo gulo luscus*). *Behav. Ecol.* **29**:534–542.
- Mallory, C. D., M. Campbell, and M. S. Boyce. 2018. Climate influences body condition and synchrony of barren-ground caribou abundance in Arctic Canada. *Polar Biol.* **41**(5):855–864.
- Lamb, C. T., M. Festa-Bianchet, and M. S. Boyce. Invest long term in Canada's wilderness. 2018. *Science* **359**(6379):1002.
- Ladle, A., R. Steenweg, B. Shepherd, and M. S. Boyce. 2018. The role of human recreation in shaping patterns of grizzly bear-black bear co-occurrence. *PLoS ONE* **13**(2): e0191730.
- Boyce, M. S., and P. Krausman. 2018. Controversies in mountain sheep management. *J. Wildl. Manage.* **82**(1):5–7.
- Mallory, C. D., and M. S. Boyce. 2018. Observed and predicted effects of climate change on Arctic caribou and reindeer. *Envir. Rev.* **26**: 13–25.[Editor's Choice].
- Boyce, M. S., C. Mallory, A. Morehouse, C. Prokopenko, M. Scrafford, and C. Warbington. 2017. Defining landscapes and scales to model landscape–organism interactions. *Curr. Landsc. Ecol. Reports* **2**:89–95 (doi: 10.1007/s40823-017-0027-z).

- Morehouse, A. T., and M. S. Boyce 2017. Troublemaking carnivores: conflicts with humans in a diverse assemblage of large carnivores. *Ecol. Soc.* **22**(3):4 (doi.org/10.5751/ES-09415-220304).
- Thurfjell, H., S. Ciuti, and M. S. Boyce. 2017. Learning from the mistakes of others: how female elk (*Cervus elaphus*) adjust behaviour with age to avoid hunters. *PLoS ONE* **12**(6): e0178082.
- Paton, D. G., S. Ciuti, M. Quinn, and M. S. Boyce. 2017. Hunting exacerbates the response to human disturbance in large herbivores while migrating through a road network. *Ecosphere* **8**(6):e01841. (doi: 10.1002/ecs2.1841).
- Morehouse, A., and M. S. Boyce. 2017. Male dominance interferes with intercept feeding of grizzly bears. *Ursus* **28**(1):66–80.
- Avgar, T., S. Lele, J. Keim, and M. S. Boyce. 2017. Relative Selection Strength: quantifying effect size in resource- and step-selection inference. *Ecol. Evol.* **7**:5322–5330 (doi: 10.1002/ece3.3122).
- Roberts, D., V. Bahn, S. Ciuti, M. S. Boyce, J. Elith, G. Guillera-Aroita, S. Hauenstein, J. Lahoz-Monfort, B. Schroder, W. Thuiller, D. Warton, B. Wintle, F. Hartig, and C. Dormann. 2017. Cross-validation strategies for data with temporal, spatial, hierarchical, or phylogenetic structure. *Ecography* **40**:913–929 (doi: 10.1111/ecog.02881).
- Boyce, M. S. 2017. Beaver population ecology and trapline management. *Internat. Trapper* 2017(spring):10–13.
- Erickson, M. E., C. Found-Jackson, and M. S. Boyce. 2017. Habitat associations with counts of declining Western Grebes in Alberta, Canada. *Avian Conserv. Ecol.* **12**(1):12. (doi.org/10.5751/ACE-00980-120112).
- Scrafford, M. A., T. Avgar, B. Abercrombie, and M. S. Boyce. 2017. Wolverine habitat selection in response to anthropogenic disturbance in the western Canadian boreal forest. *For. Ecol. Manage.* **395**:27–36.
- Prokopenko, C., M. S. Boyce, and T. Avgar. 2017. Characterizing wildlife behavioural responses to roads using integrated step selection analysis. *J. Appl. Ecol.* **54**: 470–479 (doi: 10.1111/1365-2664.12768).
- Boyce, M. S., and R. Corrigan. 2017. Moose survey app for population monitoring. *Wildl. Soc. Bull.* **41**(1):125–128 (doi: 10.1002/wsb.732). [cover photo].
- Ladle, A., T. Avgar, M. Wheatley, and M. S. Boyce. 2017. Predictive modeling of ecological patterns along linear-feature networks. *Meth. Ecol. Evol.* **8**:329–338. (doi: 10.1111/2041-210X.12660).
- Gilbert, S. L., K. J. Hundertmark, D. K. Person, M. S. Lindberg, and M. S. Boyce. 2017. Behavioral plasticity in a variable environment: snow depth and habitat interactions drive deer movement in winter. *J. Mammal.* **98**:246–259.
- Prokopenko, C., T. Avgar, and M. S. Boyce. 2017. Extent-dependent habitat selection in a migratory large herbivore: road avoidance across scales. *Landsc. Ecol.* **32**:313–325.
- Christie, K., W. F. Jensen, and M. S. Boyce. 2017. Resource selection by pronghorn in relation to land cover, roads, and oil and gas development in North Dakota. *J. Wildl. Manage.* **81**:154–162. [cover photo].
- Cristescu, B., G. B. Stenhouse, B. Goski, and M. S. Boyce. 2016. Grizzly bear space use and fitness in relation to human habitation and access. *Human Wildl. Interact.* **10**(2):240–257.
- Salari, A., M. Zakaria, and M. S. Boyce. 2016. Habitat use by two tropical waterfowl in central Malaysia. *Wildfowl* **66**:41–59.

- Cristescu, B., G. B. Stenhouse, M. Symbaluk, S. E. Nielsen, and M. S. Boyce. 2016. Wildlife habitat selection on landscapes with industrial disturbance. *Environ. Conserv.* **43**(4):327–336.
- Morehouse, A., T. Graves, N. Mikle, and M. S. Boyce. 2016. Nature vs. nurture: Evidence for social learning of conflict behaviour in grizzly bears. *PLoS ONE* **11**(11): e0165425.
- Webb, S. M., R. B. Anderson, D. L. Manzer, B. Abercrombie, B. Bildson, M. A. Scrafford, and M. S. Boyce. 2016. Distribution of female wolverines relative to snow cover, Alberta, Canada. *J. Wildl. Manage.* **80**(8):1461–1470.
- Benz, R., M. S. Boyce, H. Thurfjell, D. G. Paton, M. Musiani, C. Dormann, and S. Ciuti. 2016. Dispersal ecology informs design of large-scale wildlife corridors. *PLoS ONE* **11**(9): e0162989.
- Morehouse, A., and M. S. Boyce. 2016. Grizzly bears without borders: spatially explicit capture recapture in southwestern Alberta. *J. Wildl. Manage.* **80**(7):1152–1166 [Featured article]
- Boyce, M. S., A. Derocher, and D. L. Garshelis. 2016. *Scientific review of grizzly bear harvest management system in British Columbia*. British Columbia Ministry of Forests, Lands and Natural Resource Operations, Victoria. 56 pp.
- Bacon, M. M., and M. S. Boyce. 2016. Landscape of fear for naïve prey: ungulates flee protected area to avoid a re-established predator. *Can. Wildl. Biol. Manage.* **5**(1):1–9.
- Cristescu, B., G. B. Stenhouse, and M. S. Boyce. 2016. Large omnivore movements in response to surface mining and mine reclamation. *Scientific Reports* **6**:19177, doi: 10.1038/srep19177.
- Avgar, T., J. R. Potts, M. A. Lewis, and M. S. Boyce. 2016. Integrated step selection analysis: bridging the gap between resource selection and animal movement. *Methods Ecol. Evol.* **7**(5):619–630.
- Boyce, M. S., C. J. Johnson, E. H. Merrill, S. E. Nielsen, E. J. Solberg, and B. Van Moorter. 2016. Can habitat selection predict abundance? *J. Anim. Ecol.* **85**:11–20.
- Seidel, D., and M. S. Boyce. 2016. Varied tastes: home range implications of foraging patch selection. *Oikos* **125**:39–49.
- Christie, K., W. F. Jensen, J. H. Schmidt, and M. S. Boyce. 2015. Long-term changes in pronghorn abundance linked to climate and oil development in North Dakota. *Biol. Conserv.* **192**:445–453.
- Ciuti, S., W. Jensen, S. E. Nielsen, and M. S. Boyce. 2015. Predicting mule deer recruitment from climate oscillations for harvest management on the northern Great Plains. *J. Wildl. Manage.* **79**(8):1226–1238.
- Morrison, C. D., M. S. Boyce, and S. E. Nielsen. 2015. Space-use, movement and dispersal of sub-adult cougars in a geographically isolated population. *PeerJ* **3**:e1118; doi: 10.7717/peerj.1118.
- Cristescu, B., G. B. Stenhouse, and M. S. Boyce. 2015. Grizzly bear diet shifting on reclaimed lands. *Global Ecol. & Conserv.* **4**: 207-220.
- Seidel, D., and M. S. Boyce. 2015. Patch-use dynamics by a large herbivore. *Movement Ecol.* **3**:7 doi: 10.1186/s40462-015-0035-8.
- Proctor, M. F., S. E. Nielsen, W. F. Kasworm, C. Servheen, T. G. Radandt, A. G. MacHutchon, and M. S. Boyce. 2015. Grizzly bear connectivity mapping in the Canada-US trans-border region. *J. Wildl. Manage.* **79**:544-558. doi: 10.1002/jwmg.862. Featured paper.
- Cristescu, B., G. B. Stenhouse, and M. S. Boyce. 2015. Predicting multiple behaviors from GPS radiocollar cluster data. *Behav. Ecol.* **26**(2): 452–464. Cover photo.

- Morrison, C., M. S. Boyce, S. E. Nielsen, and M. M. Bacon. 2014. Habitat selection of a re-colonized cougar population in response to seasonal fluctuations of human activity. *J. Wildl. Manage.* **78**(8):1394–1403.
- Knopff, A. A., K. H. Knopff, M. S. Boyce, and C. C. St. Clair. 2014. Flexible habitat selection by cougars in response to anthropogenic development. *Biol. Conserv.* **178**:136–145.
- Ensing, E. P., S. Ciuti, F. A. L. M. de Wijs, D. H. Lentferink, A. ten Hoedt, M. S. Boyce, and R. A. Hut. 2014. GPS based daily activity patterns in European red deer and North American elk (*Cervus elaphus*): indication for a weak circadian clock in ungulates. *PLoS ONE* **9**(9):e106997.
- Pruvot, M., D. Seidel, S. Kutz, M. Musiani, A. Massolo, M. S. Boyce, and K. Orsel. 2014. What attracts elk onto cattle pasture? Implications for inter-species disease transmission. *Prev. Vet. Med.* **117**(2):326–339.
- Erickson, M. E., C. Found-Jackson, and M. S. Boyce. 2014. Using latent selection difference to model persistence in a declining population. *PLoS ONE* **9**(5): e98126. (doi:10.1371/journal.pone.0098126).
- Killeen, J., H. Thurfjell, S. Ciuti, D. Paton, M. Musiani, and M. S. Boyce. 2014. Habitat selection during ungulate dispersal at broad and fine scale with implications for conservation management. *Movement Ecol.* **2**:15 (doi:10.1186/s40462-014-0015-4).
- Salari, A., M. Zakaria, C. C. Nielsen, and M. S. Boyce. 2014. Quantifying tropical wetlands using field surveys, spatial statistics and remote sensing. *Wetlands* **34**:565–574 (doi: 10.1007/s13157-014-0524-3).
- Cristescu, B., G. B. Stenhouse, and M. S. Boyce. 2014. Grizzly bear ungulate consumption and the relevance of prey size to caching and meat sharing. *Anim. Behav.* **92**: 133–142.
- Cristescu, B., G. B. Stenhouse, and M. S. Boyce. 2013. Perception of human-derived risk influences choice at top of the food chain. *PLoS ONE* **8**(12): e82738.
- Knopff, K. H., N. Webb, and M. S. Boyce. 2014. Cougar population status and range expansion in Alberta during 1991–2010. *Wildl. Soc. Bull.* **38**:116–121.
- Thurfjell, H., S. Ciuti, and M. S. Boyce. 2014. Applications of step-selection functions in ecology and conservation. *Movement Ecol.* **2**:4, pp. 1–12 (doi:10.1186/2051-3933-2-4).
- 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.* **82**:1183–1191.
- Cristescu, B., and M. S. Boyce. 2013. Focusing ecological research for conservation. *Ambio* **42**:805–815.
- 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.* **37**:596–602 (doi: 10.1002/wsb.292).
- 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.
- 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)
- 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.
- 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).
- 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.
- 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.
- Boyce, M. S., K. H. Knopff, J. Northrup, J. Pitt, and L. S. Vors. 2012. 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.
- 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).
- 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.
- Shafer, A. B. A., J. M. Northrup, K. S. White, M. S. Boyce, S. D. Côté, and D. W. Coltman. 2012. Habitat selection in mountain goats. *Bull. Ecol. Soc. Amer.* **93**:170-172.
- 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.
- 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.
- Latham, A. D. M., M. C. Latham, and M. S. Boyce. 2011. Habitat selection and spatial relationships of black bears (*Ursus americanus*) with woodland caribou (*Rangifer tarandus caribou*) in northeastern Alberta. *Can. J. Zool.* **89**: 267–277.
- Cristescu, B., and M. S. Boyce. 2011. Can grizzly bears persist on a landscape shared with mining? *BIOS* **26**(2):7.
- 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, and 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.
- 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. Comparison of grizzly bear *Ursus arctos* demographics in wilderness mountains versus a plateau with resource development. *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. 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. *Écoscience* **10**:1–10.
- Xu, C., and M. S. Boyce. 2003. Predator-prey dynamics: periodic forcing in functional response vs. intrinsic growth of prey. *Indian Institute of Technology, Kharagpur* 721302. Pp. 1-4.
- 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.

- Boyce, M. S., P. J. Hudson, and E. Ranta. 2001. *International review of Swedish Wildlife Research 1997-2001*. Report 5179. Swedish Environmental Protection Agency, Stockholm. 51pp.
- 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 Ecol.* **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. 1992. Intervention versus natural regulation philosophies for managing wildlife in national parks. *Oecol. Mont.* **1**:49-50.
- 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 (*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.
- Boyce, M. S. 1981. Habitat ecology of an unexploited population of beavers in interior Alaska. Pages 155-186 In: *Worldwide Furbearer Conference Proceedings*, Vol. I, (J. A. Chapman and D. Pursley, eds.), Worldwide Furbearer Conference, Frostburg, Maryland.
- 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.

CONTRACTS & GRANTS

Funded Projects as PI

Grant Completed	Amount Awarded	Funding Agency
ICCB 2010 (24th International Congress for Conservation Biology)		
12/31/2022	\$90,066	Carbon tax project account
Human access management in central-western Alberta: implications for grizzly bears		
03/31/2013	\$5,200	Safari Club International NAB – Hunting Heritage Fund
03/31/2013	\$2,000	AB Sports Recreation Parks & Wildlife Foundation
03/31/2013	\$33,050	Alberta Conservation Association
03/31/2013	\$14,000	AB Fish & Game Assoc. - Minister’s Special License
04/22/2013	\$10,200	TD Friends of the Environment Foundation
03/31/2014	\$5,000	Safari Club International NAB – Hunting Heritage Fund
03/31/2014	\$35,000	ATPR
03/31/2014	\$3,300	AB Sports Recreation Parks & Wildlife Foundation
03/31/2014	\$25,000	Alberta Conservation Association
06/04/2014	\$10,600	TD Friends of the Environment Foundation
03/31/2015	\$3,650	Safari Club International NAB – Hunting Heritage Fund
03/31/2015	\$30,000	Alberta Conservation Association
03/31/2015	\$10,115	International Assoc. for Bear Research & Management
08/31/2015	\$9,300	AB Fish & Game Assoc. - Minister’s Special License
Efficacy of intercept feeding in reducing spring grizzly bear-ranching conflicts		
03/31/2013	\$3,480	Safari Club International NAB – Hunting Heritage Fund
04/22/2013	\$5,000	TD Friends of the Environment Foundation
03/31/2014	\$7,250	International Assoc. for Bear Research & Management
03/31/2014	\$3,000	Safari Club International NAB – Hunting Heritage Fund
06/30/2014	\$4,500	AB Sports Recreation Parks & Wildlife Foundation
03/31/2015	\$6,560	International Assoc. for Bear Research & Management
03/31/2015	\$4,100	Safari Club International NAB – Hunting Heritage Fund
Restoring grizzly bear populations to southern Alberta: Monitoring and conflict resolution		
02/28/2014	\$12,000	Environment Canada - Science Horizons
11/25/2014	\$12,000	Environment Canada - Science Horizons
03/31/2013	\$9,020	AB Conservation Association – Grants in Biodiversity
03/31/2014	\$19,400	Alta Fish & Game Assoc – Minister’s Special License
05/31/2014	\$24,393	International Assoc. for Bear Research & Management
06/04/2014	\$5,000	TD Friends of the Environment Foundation
03/31/2015	\$12,500	AB Fish & Game Assoc. - Minister’s Special License
05/31/2015	\$26,788	International Assoc. for Bear Research & Management

06/30/2015	\$25,240	Safari Club International Foundation
11/01/2014	\$177,000	Waterton Biosphere Reserve Assoc. c/o Alta Innovates
Grizzly Bear Monitoring Project (GBMP)		
06/2013 - 06/2014	\$25,000	Disney
04/2013 - 03/2014	\$10,000	Nature Conservancy Canada Donations
2014 - 2015	\$70,000	Royal Dutch Shell Waterton Gas Plant
2012 - 2014	\$12,000	Shell Environment
11/2012	\$10,000	CPAWS Donation
Effects of industry on wolverine ecology in the boreal forest of northern Alberta		
03/31/2014	\$3,985	Safari Club International NAB – Hunting Heritage Fund
03/31/2014	\$19,500	Wildlife Conservation Society of Canada
03/31/2014	\$4,893	AB Sports Recreation Parks & Wildlife Foundation
03/31/2014	\$20,000	Alberta Conservation Association
06/04/2014	\$9,845	TD Friends of the Environment Foundation
01/15/2015	\$9,300	Wildlife Conservation Society of Canada
03/31/2015	\$75,000	Alberta Conservation Association
07/31/2015	\$5,000	AB Fish & Game Assoc. - Minister's Special License
07/31/2015	\$4,000	Safari Club International NAC – Hunting Heritage Fund
07/31/2015	\$17,575	The Wolverine Foundation
10/31/2015	\$11,140	TD Friends of the Environment Fund
12/31/2015	\$10,000	Wildlife Conservation Society of Canada
03/31/2016	\$68,138	Alberta Conservation Association
05/31/2016	\$4,000	Safari Club International NAC – Hunting Heritage Fund
07/2013 - 03/2015	\$55,000	Dene Tha First Nations Donation
2014-2016	\$45,000	Husky Oil Operations Ltd. Donation
03/31/2016	\$12,000	TD Friends of the Environment Fund
04/30/2017	\$6,275	The Wolverine Foundation
Access management for wildlife conservation		
05/04/2014	\$834,306	Shell's Contribution Can/NSERC CRD
05/04/2014	\$699,510	NSERC Collaborative Research & Development Grants
An evaluation of historical mule deer fawn recruitment in North Dakota		
06/30/2014	\$38,892	ND Game & Fish Department
Response by elk to vehicle disturbance on winter range		
12/31/2015	\$3,600	AB Fish & Game Assoc. - Minister's Special License
12/31/2015	\$3,000	Safari Club International NAC – Hunting Heritage Fund
Analysis of bighorn sheep data from Alberta Environment and Parks		
12/31/2015	\$4,800	Alberta Professional Outfitters Society
A retrospective analysis of Pronghorn fawn recruitment and demographic data in North Dakota		
12/31/2015	\$59,092	ND Game & Fish Department
Hunting for sustainability: Using bear rubs to monitor black bear populations in southwestern Alberta		
03/31/2016	\$4,500	Safari Club International NAC – Hunting Heritage Fund
03/31/2016	\$15,000	AB Fish & Game Assoc. - Minister's Special License
03/31/2016	\$25,000	Alberta Conservation Association
10/01/2016	\$10,000	Waterton Biosphere Reserve Association
09/30/2016	\$9,500	Alberta Professional Outfitters Society
03/31/2017	\$11,300	Alberta Conservation Association
03/13/2017	\$6,000	International Assoc. for Bear Research & Management
03/31/2017	\$4,150	AB Fish & Game Assoc. - Minister's Special License

Evaluating the efficacy of predator management and nesting structures for duck management in AB		
06/30/2017	\$30,353	Delta Waterfowl Foundation
03/31/2017	\$7,100	AB Fish & Game Assoc. - Minister's Special License
03/31/2018	\$15,000	Mitacs
03/31/2018	\$2,500	Safari Club International NAC – Hunting Heritage Fund
03/31/2018	\$3,370	AB Fish & Game Assoc. - Minister's Special License
Ecology, density, and distribution of sitatunga in central Uganda		
03/31/2016	\$2,500	Safari Club International NAC – Hunting Heritage Fund
07/31/2016	\$24,911	Dallas Safari Club
10/31/2016	\$6,540	Safari Club International - San Diego Chapter
12/23/2017	\$15,000	Mitacs
11/01/2018	\$26,311	Dallas Safari Club
03/31/2019	\$30,985	Safari Club International Foundation
06/30/2017	\$3,000	Safari Club International NAC – Hunting Heritage Fund
03/31/2018	\$3,000	Safari Club International NAC – Hunting Heritage Fund
03/31/2019	\$12,304	Safari Club International West Texas Chapter
03/31/2019	\$5,500	Safari Club International NAC – Hunting Heritage Fund
Cougar project in Cadomin, Alberta		
08/31/2018	\$40,000	Wild Sheep Foundation of Alberta
03/31/2019	\$15,000	AB Conservation Association – Grants in Biodiversity
03/31/2018	\$9,000	Safari Club International NAC – Hunting Heritage Fund
10/31/2018	\$15,000	Mitacs
12/31/2018	\$6,500	Safari Club International Foundation
03/31/2018	\$22,000	AB Fish & Game Assoc. - Minister's Special License
03/31/2019	\$10,000	Safari Club International NAC – Hunting Heritage Fund
03/31/2019	\$20,000	Alberta Conservation Association
03/31/2019	\$31,000	AB Fish & Game Assoc. - Minister's Special License
04/30/2019	\$40,000	Wild Sheep Foundation of Alberta
Evaluating alternate elk harvest strategies in SW Alberta		
03/31/2018	\$7,650	Alberta Conservation Association
03/31/2018	\$4,500	Safari Club International NAB – Hunting Heritage Fund
08/31/2018	\$5,650	AB Fish & Game Assoc. - Minister's Special License
Qamanirjuaq barren-ground caribou habitat use and population ecology		
10/02/2017	\$4,000	World Wildlife Fund - Canada
Evaluating ungulate abundance in Elk Island National Park area, Alberta		
03/31/2019	\$5,000	Safari Club International NAC – Hunting Heritage Fund
03/31/2019	\$12,000	AB Fish & Game Assoc. - Minister's Special License
Cassiar stone's sheep habitat study in British Columbia		
03/31/2019	\$5,000	Safari Club International NAC – Hunting Heritage Fund
03/31/2019	\$27,745	Habitat Consv Trst Fndtn - Enhancement & Restoration
03/31/2020	\$27,827	Habitat Consv Trst Fndtn - Enhancement & Restoration
White-tailed deer and mule deer harvest and demographic data in North Dakota		
06/30/2020	\$130,000 US	North Dakota Game and Fish Department
Wildlife in an Increasingly Variable World		
03/31/2016	\$447,600	NSERC – Discovery Grants Program
Habitats drive population biology		
03/31/2017	\$26,000	NSERC – Discovery Grants Program
Spatial and Temporal Variability Influences on Ecology and Conservation		

03/31/2023	\$220,000	NSERC – Discovery Grants Program
Grazing practices influence on carbon sequestration and storage		
03/31/2021	\$2,623,444	Agric Green-House Gas Program, Can Agr & Agrifoods

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Memberships in professional societies

American Society of Mammalogists (patron life member).
 Canadian Society for Ecology and Evolution.
 Ecological Society of America.
 Gamma Sigma Delta (honorary).
 Phi Kappa Phi (honorary).
 Population Institute of Canada, 2019.
 Royal Society of Canada; fellow, 2014.
 Sigma Xi (associate member 1975, full member 1978, Univ. Alberta Chapter 2000).
 Society for Conservation Biology.
 The Wildlife Society (Certified Wildlife Biologist, 2000; Fellow, 2012).
 Wild Sheep Foundation Alberta (life member, 2003; Board of Directors, 2019).
 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.

Associate Editor: *Journal of Wildlife Management*, 2017-2018.

Editorial Board: *Oecologia Montana*, 1992-present. *Environmental Conservation*, 2007-2010.
Oxford Bibliographies in Ecology, 2010-present. *Animal Biotelemetry*, 2012-present.

Academic Editor: *PLoS ONE*, 2010-2019.

PROFESSIONAL SERVICES (last 5 yrs)

Workshop: North American Model of Wildlife Conservation, Alberta Conservation Association, 2021, March 29.
 Workshop on grazing management for conservation, Alberta Conservation Association, 2020 April 15.
 Affidavit for Ministry of Environment and Climate Change on Emergency Protective Order for Greater Sage-Grouse in Canada, 2019 October.
 Review committee on wildlife research for Swedish Environmental Protection Agency, Sigturna, Sweden, March 2018-April 2019.
 Workshop on camera trapping, Alberta Conservation Association & Alberta Environment and Parks, 2019 April 12.

Board of Directors, Wild Sheep Foundation Alberta, 2019.
 Session Chair, Movement Ecology Gordon Conference, Italy, 2019 March 6.
 Herbivory Session Chair, Ecological Society of America, New Orleans, LA, August 2018.
 PLoS ONE Academic Editors Meeting, New Orleans, LA, August 2018.
 Student presentations juror, American Society of Mammalogists, Manhattan, KS, June 2018.
 Review committee of ecology programs in the Swedish SLU System, Uppsala, Sweden, May 28-
 June 1, 2018.
 Workshop on habitat selection, Department of Evolutionary Ecology, Leibniz Institute for Zoo
 and Wildlife Research, Berlin, Germany, May 25, 2018.
 Workshop on habitat selection, Alberta Conservation Association and Alberta Environment and
 Parks, Edmonton, April 19, 2018.
 Edited a Special Section for the *Journal of Wildlife Management* on Management of Mountain
 Sheep, January 2018.
 Organized symposium on “Uncertainty in ecology and conservation” for the Canadian Society
 for Ecology and Evolution and Canadian Section of The Wildlife Society. Victoria,
 British Columbia, 2017 May 8.
 Past-president, Canadian Section of The Wildlife Society, July 2016-May 2017.
 President, Canadian Section of The Wildlife Society, March 2015-July 2016.
 Program Chair, The Wildlife Society Annual Conference, Winnipeg, October 2015.
 Organized symposium on “Movement models to resource selection functions” for the Annual
 Conference of The Wildlife Society, Winnipeg, October 2015.
 Organized symposium on “Understanding individuals to conserve populations” for the Annual
 Conference of the Canadian Society for Ecology and Evolution, 2015 May 24.
 Workshop on Resource Selection Functions, Saskatchewan Chapter of The Wildlife Society,
 Saskatoon, 2015 March 13.
 Banting Postdoctoral Fellowships Review Committee, NSERC, 2011-2014.
 Board of Directors, North American Section, Society for Conservation Biology, 2009-present.
 Director, Northern Alberta Chapter of the Safari Club International, 2007-present.
 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)

2021, “Adaptive Multi-Paddock Grazing for Carbon Conservation,” ALUS Webinar,
<https://youtu.be/10-IOuHNd84>, March 3-4.
 2021, “Interview by Tom Opre, Shepherds of Wildlife Society,” Shepherds of the Wild Podcast,
 Episode 6: <https://www.youtube.com/watch?v=fc6LWReJQB8>, January 4.
 2020, “Adapting Grassland Grazing to Boost Carbon Sequestration.” Saskatchewan Prairie
 Conservation Action Plan webinar: <https://www.youtube.com/watch?v=HpoUNywPLk8>,
 March 16.
 2019, “United Community for wilderness Protection.” Distinguished Martha Kostuch lecture,
 Calgary, November 23.
 2019, “Human Predation on Migratory Elk in Alberta.” Symposium: *The Interface of Predation
 and Migration in Aquatic and Terrestrial Ecosystems* American Fisheries Society/The
 Wildlife Society joint conference, Reno, Nevada, October 3.

- 2019, Plenary: “Habitat ecology for mountain sheep in North America.” World Mountain Ungulate Conference, Bozeman, Montana, September 12.
- 2019, Plenary address: “Wolves for Yellowstone.” British Columbia Wildlife Federation, Fort St. John, BC, <https://www.youtube.com/watch?v=iFaR9dTb-c0>, May 10.
- 2019, “Wolves for Yellowstone: Dynamics in Time and Space.” Whyte Museum Lecture, Banff, Alberta, March 14.
- 2019, “Sustainable harvest management for bighorns in Alberta.” Wild Sheep Foundation Alberta, Red Deer, March 9.
- 2019, “Conservation applications of movement ecology.” Gordon Conference, Italy, March 6.
- 2019, “Wolves for Yellowstone.” Department Seminar, Natural Resources Ecology and Management, Iowa State University, Ames, February 1.
- 2019, “Wolves for Yellowstone.” Research Seminar, Centre for Biodiversity Dynamics, NTNU, Trondheim, Norway, January 28.
- 2018, “Science behind the North American Model of Wildlife Conservation.” Keynote: Conservation EXPO, Saskatchewan Chapter of The Wildlife Society, Regina, Sept 6.
- 2018, “Uncertainty, seasonality, and unintended consequences: the demographic Hydra Effect.” Symposium on Downscaling, Extreme Events and Stochastic Population Models at the Ecological Society of America Annual Meeting, New Orleans, Louisiana, August 8.
- 2018, “Wolves for Yellowstone: Dynamics in Time and Space.” C. Hart Merriam Award Plenary, American Society of Mammalogists Annual Meeting, Manhattan, KS, June 27. https://www.youtube.com/watch?v=UFZd_Z8u1ME.
- 2018, “Habitat modelling,” Department of Evolutionary Ecology, Leibniz Institute for Zoo and Wildlife Research-IZW, Berlin, Germany, May 25.
- 2018, “Canada’s Arctic Wildlife and Climate Change,” RSC Miroslaw Romanowski Medal Lecture, G-7 Research Summit, Arctic Sustainability Summit, Montreal, May 23.
- 2018, “Wolf recovery for Yellowstone: dynamics in time and space,” University College Dublin, Dublin, Ireland, March 29.
- 2018, “Wolf recovery for Yellowstone: dynamics in time and space,” Dept of Applied Zoology and Wildlife Management, Faculty of Forestry, Technical Univ. in Zvolen, Slovakia.
- 2018, “Wolf recovery for Yellowstone: dynamics in time and space,” University of Swansea, Swansea, Wales, Feb 26.
- 2018, “Wolf recovery for Yellowstone: Predicting dynamics,” Department of Zoology Seminar, University of Oxford, U.K., Feb 12.
- 2017, “Northern wildlife and climate change,” Cutting Edge Seminar Series, McGill University, Montreal, December 14.
- 2017, “Controversies on wolf recovery for Yellowstone.” ALES Seminar Series, University of Alberta, December 7.
- 2017, “Predator-prey systems: the wolves in Yellowstone,” Royal Society of Victoria, Melbourne, Australia, September 21.
- 2017, “Topics in non-linear dynamics in population ecology,” Quantitative and Applied Ecology (QAEco), School of Biological Sciences, University of Melbourne, Australia, August 17.
- 2017, “Habitat selection by mammals,” Symposium on Telemetry Methods, International Mammalogical Congress, Perth, Australia, July 11.
- 2017, “Natural selection for life histories in seasonal environments,” Symposium on Ecological and Evolutionary Dynamics in Fluctuating Environments for the Canadian Society for Ecology and Evolution, Victoria, BC, May 8.

- 2016, “Species at risk in Alberta,” Inside Education, Edmonton, September 29.
- 2016, “Neglected but fundamental: 5 understudied topics in population biology,” Distinguished Ecologist Lecture, Colorado State University, April 22.
- 2016, “North America’s Energy Policy,” Distinguished Ecologist Lecture, Colorado State University, April 21.
- 2016, “Compensation and density dependence,” Invited Keynote Presentation. Predator-prey Conference, Columbia Mountains Institute, Revelstoke, BC, April 5.
- 2016, “Neglected but fundamental: 5 understudied topics in population biology,” Mathematical Biology Seminar, University of Alberta, March 7.
- 2015, “Spatial ecology meets population biology,” Invited Symposium Presentation, Canadian Society for Ecology and Evolution, Saskatoon, May 22.
- 2015, “Black bears on the tangled bank,” Invited Symposium Presentation, Canadian Society for Ecology and Evolution, Saskatoon, May 24.
- 2015, “Optimizing cervid harvests in variable environments,” Plenary address, Western States and Provinces Deer and Elk Conference, Canmore, May 13.
- 2015, “Canada’s Energy Policy, The Urgent Need for Science,” Plenary address, Alberta Chapter of The Wildlife Society, Edmonton, March 21.
- 2015, “Estimating resource selection functions in R,” AGM of the Canadian Section of The Wildlife Society, Saskatoon, March 13.
- 2014, “Canada’s Energy Policy: The Urgent Need for Science,” Royal Society of Canada, Quebec City, November 20.
- 2014, “Selection functions: statistics, interpretations, and applications,” Webinar for the Alberta Conservation Association, May 12.
- 2014, “Trophic cascades in Yellowstone,” Plenary Address, Alaska Chapter of The Wildlife Society, Anchorage, April 1.
- 2014, “Workshop on resource selection functions,” Alaska Chapter of The Wildlife Society, Anchorage, March 31.
- 2014, “Does fear reduce effects of ungulates on vegetation?” Gordon Conference on Predator-Prey Interactions, Ventura, California, January 8.

CONTRIBUTED PAPERS (recent)

- 2019, “Grassland bird diversity and abundance responses to alternative grazing practices.” Prairie Conservation and Endangered Species Conference, Winnipeg, w/J. Randall (February 20).
- 2016, “Science and bighorn management.” Alberta Chapter of The Wildlife Society, Drumheller (March 5).
- 2015, “Canada’s energy policy: the urgent need for science.” Canadian Section of The Wildlife Society, Saskatoon, Saskatchewan (March 14).
- 2014, “Are terrestrial trophic cascades limited to parks and protected areas?” Alberta Chapter of The Wildlife Society, Jasper, Alberta. (March 8).
- 2014, “Conflicting views on trophic cascades in Yellowstone,” Canadian Section of The Wildlife Society, Universite Laval, Quebec City, Quebec (March 29).

PUBLIC SERVICE/POPULAR PRESENTATIONS (recent)

- 2020, “Rudolf the vulnerable reindeer,” White Memorial Conservation Center webinar series, Litchfield, Connecticut (Dec 5).
- 2019, “Rare grizzly bear sightings near Dodge Cove,” *The Northern View*, Prince Rupert, BC (July 19).
- 2019, “Grizzly bears in Dodge Cove,” CBC Radio, Prince Rupert, BC (July 19).
- 2018, “La exitosa reintroducción del lobo en el Parque Nacional de Yellowstone,” *National Geographic Espana*. (October 29).
- 2018, “Reintroduction of wolves to Yellowstone led to unexpected ecological response,” *Newsweek* (October 17).
- 2018, “Letting nature take its course: Wolves in Yellowstone National Park,” *Science Daily*, (October 16).
- 2018, Media coverage on Yellowstone wolves, CTV, CBC Radio Active, Eurekalert, Flipboard, Phys.Org, Labroots (October 17).
- 2018, “Wolves for Yellowstone,” Pigeon Lake Regional School, Falun, Alberta (October 17).
- 2018, “A Passion for the Science of Wildlife,” *The Wildlife Professional* **12**(4):16-17.
- 2017, “Brainy elk become bulletproof by outsmarting hunters,” *Quirks & Quarks*, CBC, (Jun 16)
- 2017, “Canada’s energy policy: the urgent need for science,” Mayfield Rotary, Edmonton
- 2016, “Canada’s energy policy: the urgent need for science,” Edmonton South Rotary Club (November 23).
- 2016, “Energy development and species at risk in Canada,” Sunrise Rotary Club, Fort Edmonton (September 30).
- 2016, “Moose app for moose management in Alberta,” Strathcona Rotary Club, Edmonton (September 6).
- 2016, “Bighorn management in Alberta,” Safari Club International, Edmonton (January).
- 2015, “Licenced hunting and trapping in Canada: funding for management and research,” House of Commons Standing Committee on Environment and Sustainable Development, Ottawa (March 31).

COMMITTEES (recent)

- 2021-present, Chair, Canadian Section, Ecological Society of America.
- 2020-present, Endangered Species Conservation Committee, Alberta Environment and Parks.
- 2019-present, Chair, Conservation Affairs Committee, Alberta Chapter of The Wildlife Society.
- 2019, First Opponent, Doctoral Examination Committee, NTNU, Trondheim, Norway.
- 2018-2019, Search Committee, Chair, Dept. Biological Sciences, Univ. Alberta.
- 2016-2017, Search committee, Fisheries biologist, Dept. Biological Sciences, Univ. Alberta.
- 2015-present. Alberta Game Policy Advisory Council, Alberta Environment & Parks.
- 2014-2015, Alberta Game Management Advisory Group, Alberta Environment & Parks.
- 2015-2016, Grizzly bear harvest policy review, British Columbia Department of Environment.
- 2007-2019, Conservation Affairs Committee, Alberta Chapter The Wildlife Society.