

Wyoming Cooperative Fish and Wildlife Research Unit
Department of Zoology and Physiology
University of Wyoming
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Education

- Dec 2016 **M.Sc. Zoology**, Cooperative Fish and Wildlife Research Unit, Dept. of Zoology and Physiology University of Wyoming.
Thesis: Effects of predators and resource limitation on demography and behavior of moose in the Greater Yellowstone Ecosystem.
Co-Advisors: Matthew J. Kauffman and Jacob R. Goheen
- 2012 **A.S. Biology**, Colorado Mountain College, Spring Valley
- 2006 **B.A. International Affairs**, University of Colorado, Boulder

Summary of Technical Skills

Project management and leadership

Research study design and implementation
Budget management (\$600k)
Large-mammal capture logistics and coordination
Organizing and leading collaboration among state, university, federal agency personnel
Hiring and training of personnel
Developing relationships and maintaining communication with private land owners

Computer Software and analytical skills

Program R
ArcGIS 10.x
Microsoft Office Suite
Telonics Inc.
Data management with Program R and MS Access
Statistical analyses: survival (Kaplan-Meier, Cox Proportional Hazards), demographic (stage-structure matrix models, Life-stage Simulation Analysis), logistic and multiple regression (habitat use and survival), AIC model selection.

Field skills

Fixed-wing flight experience (21 hours), Maule, Super Cub, Arctic Tern
Helicopter flight experience (Bell-47, 21 hrs; Bell-206L4, 15 hrs)
Wolf trapping in high-density grizzly bear areas (limited)
Large carnivore and herbivore tracking

Sex and age (juveniles vs adults) classification of moose, elk, mule deer, and wolves
Disease sampling for large herbivores: eye swabs, skin biopsies
GPS/VHF collar setup, affixation and tracking
Blood draws: cephalic and jugular veins
Capture drug administration: Penicillin, Banamine, vitals monitoring
Camera trapping (recreational)
Orienteering via topo map, compass, GPS, terrain reading
Navigating private and public land boundaries
Data entry and large database management
Vehicle operation and maintenance: 4WD, ATV and snowmobile
Radio communication following protocols of federal agencies
Backcountry travel (hiking, cross-country skiing, snow shoeing)
Horsemanship
Firearm use and safety
Bear safety
Winter camping

Certifications and Trainings

2015 Critical Skills for the Early Career Professional. Workshop, The Wildlife Society National Conference.
2014, 2016 Wilderness First Aid and CPR Certification, American Red Cross.
2013 Hunter Education Training Certification.
2012 A-100 Aviation Training Certification, US Department of the Interior.
2012 New approaches to studies of home range, habitat selection, and space use. Workshop, University of Idaho.
2012, 2013 Wildlife chemical immobilization Course, Wyoming Game and Fish Dept. and Colorado State University.
2006, 2012 Avalanche I Training Certification, AIARE, in Estes Park, CO (2006) and Colorado Mountain College, Spring Valley, CO (2012)
2006 Teaching English as a Foreign Language Certification, TOEFL. One World Training, Boulder, CO.

Relevant Work Experience

Dec 2016-Present **Research Associate**
Wyoming Migration Initiative (WMI), Laramie WY
Managing and manipulating collar datasets of ungulate species for publishable maps in the [Wyoming Migration Atlas](#). Extensive use of Program R and Arcmap 10.x. Budget proposal writing.

Aug 2012-Dec 2016 **Research Assistant and Project Coordinator**
Wyoming Cooperative Fish and Wildlife Research Unit,
University of Wyoming, Laramie WY
Developed, coordinated and implemented field work, moose capture operations (n=84 adult females) and research for the [Sublette Moose](#)

[Project](#) to reveal the influence of predation and resource limitation on moose demography in western Wyoming. Analyzed pre-existing GPS collar datasets to assess behavioral response of moose to wolf presence in Buffalo Valley, WY. Field data collection, telemetry and flight experience. Database manipulation and management in Program R and MS Access. Statistical and spatial data extraction, statistical analyses, and figure creation all in Program R. Map creation in Arcmap 10.x. Budget management and fundraising from private donors. Proposal, report and publication writing. Navigated backcountry terrain extensively on foot; operated and maintained 4WD vehicles.

May-Aug 2012

**Wolf Monitoring and Trapping Technician
US Fish and Wildlife Service, Cody WY**

Worked both independently and cooperatively with Wyoming Game & Fish Department (WGFD) to track and document breeding pair status of wolf packs (collared and uncollared packs), their den or rendezvous site locations in front and backcountry areas. Coordinated and assisted with trapping efforts to radio collar wolves in Cody region east of Yellowstone National Park, requiring strict adherence to safety protocols in high-density grizzly bear areas. Assisted WGFD with depredation investigations. Communicated often with local ranchers and public regarding private land access and local wolf activity and ecology. Navigated backcountry terrain extensively on foot; operated and maintained ATVs and 4WD vehicles.

May-Aug 2011

**Black Bear Monitoring Technician
Colorado Parks and Wildlife, Glenwood Springs CO**

Deployed and maintained 28 hair-snare sites in mountainous terrain as part of an effort to assess black bear population size. Collected hair samples both independently and in 2-person teams on public and private land. Frequently communicated with private land owners and public regarding land access and black bear ecology. Navigated backcountry terrain extensively on foot; operated and maintained ATVs and 4WD vehicles.

Dec 2010;
Mar & Dec 2011

**Wolf Research Technician
Yellowstone National Park, Mammoth Hot Springs WY**

Part of 3-person crew assigned to study radio-collared wolf packs on the Northern Range of Yellowstone National Park. Tracked and recorded observations of movement, hunting and sociality using telemetry and long-range optics from dawn to dusk for three, 30-day periods. Located wolf kill sites to perform necropsies, collected samples from prey species to determine health at time of death. Located and recovered dead radio-collared wolves from the field.

Conducted age- and sex-classification surveys of elk from ground. Frequently communicated with public regarding wolf behavior and ecology. Navigated backcountry terrain extensively during winter via snowshoeing and cross-country skiing. Drove daily on icy roads using 4WD.

May-Aug 2010

**Wolf Research and Monitoring Technician
Idaho Fish and Game, MT Coop Fish & Wildlife Research Unit,
Central ID**

Established and maintained 65 km of mock-territorial boundaries of wolf packs (i.e., “biofence”) to experimentally influence wolf pack movements deploying scent-marks (wolf scat and urine). Followed GPS transects to assess and record wolf visitation (i.e., tracks and scat) along biofence. Constructed rub stations and surveyed predicted rendezvous sites to collect wolf scat and hair samples for population monitoring via genetic analyses. Navigated backcountry terrain extensively on foot; operated and maintained ATVs and 4WD vehicles. Websites: [biofence and wolves](#); [wolf population monitoring](#).

Mar-Apr 2009

**Harbor Seal Monitoring Technician
National Park Service, Point Reyes National Seashore CA**

Located and observed haul-out sites of harbor seals using long-range optics as part of monitoring program for National Park Service. Recorded behavioral observations; counted and classified harbor seals by age class (pups vs adults).

May-Oct 2007

**Fisher and Marten Monitoring Technician
US Forest Service, Ponderosa CA**

Independently and as part of 2-person crew, deployed track-plate boxes and hair snares in southern Sierra Nevada Range to record presence and collect hair samples from fisher, marten and other mesocarnivores for a population estimate via genetic analyses. Established arrays of detection stations following strict distance-placement protocol. Extensive data collection and GPS use. Navigated backcountry terrain extensively on foot using a topo map and compass. Operated and maintained ATVs and 4WD vehicles.

Apr-Jun 2007

**ESL Teacher
Private practice and at I.I.C.A.N.A., Cordoba, Argentina**

Taught conversational English privately (one-on-one instruction) and to classes of Argentine students ($n = 2$ classes of 25 students) at an English language learning institute (IICANA). Developed lesson plans and adapted teaching techniques to fit with the needs of students.

Nov-Apr 2006/07 **Assistant Supervisor and Dog Mushing Instructor**
Alpine Adventures Dogsledding, Leadville CO
Managed dog kennel of 80 sled dogs for tour operation near local ski resorts. Instructed customers on operating dog sled pulled by a team of sled dogs. Supervised and trained kennel personnel and resolved conflicts among employees and customers.

Jun-Aug 2005 **Commercial Fisherman**
Cook Inlet Bay, Clam Gulch AK
Deckhand for set-net (aka gill-net) sockeye salmon fishing operation. required long hours, working safely as a team in rough seas and inclement weather.

Volunteer Experience

Jan 2016 Assisted with Cougar research, tracking mountain lions for capture and radio collaring. Yellowstone Cougar Project, Yellowstone National Park.

Jul 2014 Assisted Wyoming Range Mule Deer Project (Wyoming Coop Unit) with scat collection for diet analysis.

Dec & Mar 2012/14 Assisted Wyoming Range Mule Deer Project (Wyoming Coop Unit) with 6 capture operations, including handling and collaring >350 adult female mule deer. Pinedale, Kemmerer, Rock Springs, Big Piney Wyoming.

Aug 2011 Assisted Montana Fish Wildlife and Parks biologist Liz Bradley with wolf trapping and tracking in southern Bitterroot.

Jul 2010 Assisted Idaho Fish and Game wildlife biologist Hilary Cooley and contract-biologist Carter Niemeyer with wolf trapping and tracking in central Idaho.

Feb-Mar 2014 Communications Committee, WY Chapter of The Wildlife Society. Worked on a team of three to develop spring newsletter for Wyoming Chapter of Wildlife Society.

Selected Presentations

Oates, B.A. 2016. Training Seminar on Ecology, Tracking and Classification of Shiras Moose. *Oral presentation* to Summer Moose Day Participants in July. Laramie, WY.

Oates, B. A. 2016. “Evaluating the Effects of Habitat Condition, Climate, and Predator Density on Shiras Moose Demography.” *Oral presentation* to the USGS Regional Cooperator Meeting; Annual Meeting, Laramie, WY.

Oates, B.A., Kevin L. Monteith, Jerod A. Merkle, Matthew M. Hayes, Gary L. Fralick, Douglas W. Smith, Daniel R. Stahler, Sarah Dewey, Steven L. Cain, Michael D. Jimenez, Alyson B. Courtemanch, Jacob R. Goheen, Matthew J. Kauffman. 2016. “Evaluating the Effects of Habitat Condition, Climate, and Predator Density on Shiras Moose Demography.” *Oral presentation* to the Predator-Prey Dynamics Conference; Revelstoke, British Columbia.

Oates, B.A. 2016. Training Seminar on Ecology, Tracking and Classification of Shiras Moose. *Oral presentation* to Winter Moose Day Participants in January. Laramie, WY.

Oates, B.A., Kevin L. Monteith, Jerod A. Merkle, Matthew M. Hayes, Gary L. Fralick, Douglas W. Smith, Daniel R. Stahler, Sarah Dewey, Steven L. Cain, Michael D. Jimenez, Alyson B. Courtemanch, Jacob R. Goheen, Matthew J. Kauffman. 2015. “Evaluating the Effects of Habitat Condition, Weather, and Predator Density on Shiras Moose Demography.” *Oral presentation* at the national conference of The Wildlife Society; Annual Meeting, Winnipeg, Manitoba.

Oates, B.A., Kevin L. Monteith, Jerod A. Merkle, Matthew M. Hayes, Gary L. Fralick, Douglas W. Smith, Daniel R. Stahler, Sarah Dewey, Steven L. Cain, Michael D. Jimenez, Alyson B. Courtemanch, Jacob R. Goheen, Matthew J. Kauffman. 2015. “Evaluating the Effects of Habitat Condition, Weather, and Predator Density on Shiras Moose Demography.” *Oral presentation* to The Wyoming Chapter of The Wildlife Society Conference; Annual Meeting, Lander, WY.

Oates, B.A. 2015. Training Seminar on Ecology, Tracking and Classification of Shiras Moose. *Oral presentation* to Summer Moose Day Participants in June. Laramie, WY.

Oates, B.A., Kevin L. Monteith, Jerod A. Merkle, Matthew M. Hayes, Gary L. Fralick, Douglas W. Smith, Daniel R. Stahler, Sarah Dewey, Steven L. Cain, Michael D. Jimenez, Jacob R. Goheen, Matthew J. Kauffman. 2015. “Spatially-Explicit Demography of Two Moose Populations with Contrasting Predator Densities.” *Oral presentation* to the North American Moose Conference; Annual Meeting, North Park, CO.

Oates, B. A. 2015. “Spatially-Explicit Demography of Two Moose Populations with Contrasting Predator Densities.” *Oral presentation* to the USGS Regional Cooperator Meeting; Annual Meeting (spring), Cheyenne, WY.

Oates, B.A. 2015. Training Seminar on Ecology, Tracking and Classification of Shiras Moose. *Oral presentation* to Winter Moose Day Participants in February. Laramie, WY.

Oates, B. A. 2014. "Shiras Moose Demography and Behavior in Western Wyoming." *Oral presentation* to the USGS Regional Cooperator Meeting; Annual Meeting (fall), Laramie, WY.

Oates, B. A., J. R. Goheen, G. L. Fralick, K. L. Monteith, M. J. Kauffman. 2014. "Comparative Demography of Two Moose Populations with Contrasting Predator Densities." *Oral presentation* to The Wyoming Chapter of The Wildlife Society Conference; Annual Meeting, Sheridan, WY.

Oates, B. A., J. R. Goheen, G. L. Fralick, K. L. Monteith, M. J. Kauffman. 2014. "Comparative Demography of Two Moose Populations with Contrasting Predator Densities." *Oral presentation* to the North American Moose Conference; Annual Meeting, Girdwood, AK.

Oates, B. A. 2014. "Shiras Moose Demography and Behavior in Western Wyoming." *Oral presentation* to the USGS Regional Cooperator Meeting; Annual Meeting, Laramie, WY.

Oates, B. A., J. R. Goheen, M. J. Kauffman, G. L. Fralick, S. G. Smith, K. L. Monteith. 2014. "Demography and Movement in Relation to Potential Energy Development." *Oral presentation* to Wyoming Game and Commission at a public meeting, Lander, WY.

Oates, B. A., J. R. Goheen, M. J. Kauffman, G. L. Fralick, S. G. Smith, K. L. Monteith. 2014. "Demography and Movement in Relation to Potential Energy Development." *Oral presentation* to the public at the Sublette County Public Library, Pinedale, WY.

Oates, B. A., J. R. Goheen, M. J. Kauffman, Fralick, G. L., S. G. Smith, K. L. Monteith. 2013. "Comparative Demography of Two Moose Populations with Contrasting Predator Densities." *Oral presentation* to the Wyoming Chapter of The Wildlife Society; Annual Meeting, Rock Springs, WY.

Oates, B. A., M. J. Kauffman, J. R. Goheen, Fralick, G. L., S. G. Smith, K. L. Monteith. 2013. "Shiras Moose Demography, Nutrition and Behavior in Western Wyoming." *Oral presentation* to the USGS Regional Cooperator Meeting; Annual Meeting, Cheyenne, WY.

Oates, B. A., J. R. Goheen, M. J. Kauffman, G. L. Fralick, S. G. Smith, K. L. Monteith. 2012 "Investigating the Influences of Nutrition and Predation on Shiras Moose Demography in Western Wyoming." *Poster presentation* at The Wyoming Chapter of The Wildlife Society Conference; Annual Meeting, Laramie, WY.

Publications

Merkle, J.A., M.J. Kauffman, K.L. Monteith, E. Aikens, M.M. Hayes, K.R. Hershey, A. Middleton, **B.A. Oates**, H. Sawyer, B.M. Scurlock. Large herbivores surf waves of green-up during spring. *Proceedings of the Royal Society B*.

Morrison T.A., J.A. Merkle, J. Beck, A. Middleton, K.L. Monteith, **B.A. Oates**, H. Sawyer, M.J. Kauffman. What drives fidelity in migratory ungulates? In Review with *Nature Communications*.

Oates, B.A., J.A. Merkle, J.R. Goheen, K.L. Monteith, G.L. Fralick, A.B. Courtemanch, S. Dewey, M.D. Jimenez, M.M. Hayes, D.R. Stahler, D.W. Smith, J.M. Vartanian, M.J. Kauffman. “Demographic rates interact with resource limitation and predation to limit population growth of a large herbivore.” To be submitted to *Journal of Animal Ecology*.

Oates, B.A., J.A. Merkle, J.R. Goheen, S. Dewey, M.D. Jimenez, J.M. Vartanian, M.J. Kauffman. “Antipredator response of moose diminishes during periods of resource deficit: a test of the starvation-predation hypothesis.” To be submitted to *Ecology*.

Journal Reviews

Ecological Applications, Editor: Jacob Goheen

Technical Reports

Oates, B.A., Jacob R. Goheen, Matthew J. Kauffman, Kevin L. Monteith, Gary L. Fralick, Alyson B. Courtemanch. 2016. Final Report for the Sublette Moose Project. Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming.

Oates, B.A., Jacob R. Goheen, Matthew J. Kauffman, Kevin L. Monteith, Gary L. Fralick, Scott G. Smith. 2014. Annual Report for the Sublette Moose Project. Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming.

Oates, B.A., Jacob R. Goheen, Matthew J. Kauffman, Kevin L. Monteith, Gary L. Fralick, Scott G. Smith. 2014. Capture Report for the Sublette Moose Project. Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming.

Oates, B.A., Jacob R. Goheen, Matthew J. Kauffman, Kevin L. Monteith, Gary L. Fralick, Scott G. Smith. 2013. Annual Report for the Sublette Moose Project. Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming.

Oates, B.A., Jacob R. Goheen, Matthew J. Kauffman, Kevin L. Monteith, Gary L. Fralick, Scott G. Smith. 2013. Calf Flights Report for the Sublette Moose Project. Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming.

Oates, B.A., Jacob R. Goheen, Matthew J. Kauffman, Kevin L. Monteith, Gary L. Fralick, Scott G. Smith. 2013. Capture Report for the Sublette Moose Project. Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming.

Oates, B.A., Jacob R. Goheen, Matthew J. Kauffman, Kevin L. Monteith, Gary L. Fralick, Scott G. Smith. 2012. Annual Report for the Sublette Moose Project. Wyoming Cooperative Fish and Wildlife Research Unit, University of Wyoming.

Grants

2014	Teton Conservation District \$10k
2013	Safari Club International Foundation \$25k
2013	Private Donations for Research ($n = 13$, total: \$65k)
2012-2014	US Forest Service, Bridger-Teton \$80k
2012-2014	Wyoming Guides and Outfitters Association \$15k
2012-2014	Sublette County Outfitters and Guides Association \$10k
2012-2015	Wyoming Governor's Big Game License Coalition \$400k

Total: \$605k

Professional Associations

The Wildlife Society, National organization and Wyoming State Chapter.

References

- Dr. Matthew J. Kauffman: Lead Scientist of the Wyoming Cooperative Fish and Wildlife Research Unit, and associate professor of Zoology and Physiology at the University of Wyoming
Relationship: MSc Co-advisor
Years known: 5
Email: mkauffm1@uwyo.edu
Cell: 307-399-1322
- Dr. Kevin L. Monteith: Assistant professor of Zoology and Physiology at the University of Wyoming.
Relationship: MSc committee member and collaborator of the Sublette Moose Project
Years known: 5
Email: Kevin.Monteith@uwyo.edu
Cell: 605-690-4214
- Gary Fralick: Wildlife biologist at Wyoming Game and Fish Department.
Relationship: Collaborator with the Sublette Moose Project
Years known: 5
Email: gary.fralick@wyo.gov
Cell: 307-730-2802