

KRISTIN BARKER

Associate Wildlife Biologist®

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OBJECTIVE

Improve effectiveness of wildlife conservation and management outcomes by working as a research biologist for a wildlife management agency in the US Rocky Mountains

EDUCATION

PhD candidate, Ecosystem sciences, Univ. of California, Berkeley Berkeley, CA (Aug. 2018 - present)
Berkeley Fellow | Environmental Science, Policy & Management | Cumulative GPA 4.0/4.0

Master of Science, Wildlife biology, University of Montana, Missoula, MT (Aug. 2015 - May 2018)
Summa cum laude graduate | Cumulative GPA 4.0/4.0

Bachelor of Arts, Biology, Western State Colorado University, Gunnison, CO (Aug. 2009 - Dec. 2012)
Wildlife concentration; Environmental Biology and Ecology emphasis
Summa cum laude graduate | Major GPA 4.0/4.0 | Cumulative GPA 3.93/4.0

RELATED EXPERIENCE

Research Assistant | Causes and consequences of partial migration in elk (2015 - 2018)
Montana Cooperative Wildlife Research Unit, University of Montana; Montana Fish, Wildlife and Parks

- Work as part of collaborative research group including members of state wildlife agency, local conservation ranch, and university faculty
- Author and coauthor manuscripts for scientific journals; write technical reports for Montana Fish, Wildlife and Parks; and publish quarterly reports for interested stakeholders
- Communicate results orally to the media, special interest groups, and the scientific community

Teaching Assistant | Principles of Living Systems biology lab, BIOB 161N (Fall 2017)
Division of Biological Sciences, University of Montana

- Effectively communicate basic principles of biology to fifty first-year undergraduate students
- Mentor students through proposing, developing, and presenting independent research projects
- Act as sole instructor for two laboratory periods; independently oversee and grade all work

Teaching Assistant | Careers in Wildlife Biology lecture, WILD 180 (Fall 2016)
Wildlife Biology Program, University of Montana

- Prepare and deliver lectures covering a breadth of topics including federal legislation, contemporary challenges in natural resource management, and graduate school
- Provide meaningful feedback on written assignments to more than 200 undergraduate students

Facilitation Associate (2014 - 2015)

Peak Facilitation Group; United States Forest Service

- Lead and facilitate public meetings discussing controversial topics with varied interest groups
- Mediate small-group discussions and assist with conflict resolution between diverse stakeholders
- Synthesize public input to inform management goals and objectives for National Forest plan revision

Biological Science Technician (Seasonal 2012 - 2015)

Colorado Parks and Wildlife

- Represent state agency in working group meetings concerning species of high public interest
- Work with representatives of federal agencies, local government, and nonprofit organizations
- Write Candidate Conservation Agreement with Assurances documents for review by USFWS
- Produce reports and maps to help define appropriate seasonal closures for proposed recreation area
- Follow detailed protocols to safely live-trap, record morphological data of, and collect biological samples from candidate species for federally endangered listing on private and public lands
- Independently maintain database of Gunnison sage-grouse locations and mortality status; record and triangulate animal locations via ground telemetry and aerial telemetry flights

Primary Investigator | Activity patterns and third-order habitat selection of red fox (2009 - 2013)

Thornton Biology Research Program, Western State Colorado University

- Design and conduct independent research project under minimal direction from faculty advisor
- Procure complete project funding through several successful grant applications
- Recruit, train, schedule, and manage 15 volunteer technicians to ensure reliable data collection
- Communicate with private landowners to request access for monitoring fox and collecting mortalities
- Collect accurate, detailed data while working alone, overnight, under often adverse field conditions
- Compile and analyze data using Program R and ArcGIS
- Communicate study results via written reports and oral presentations at seminars and conferences

Crew Leader | Wolf population study (Summer 2014)

Montana Cooperative Wildlife Research Unit; University of Montana

- Ensure complete data collection over a large geographic area within a limited time frame by accurately planning, conducting, and supervising fieldwork
- Provide leadership and oversight while living and working as member of field research team
- Locate and gather genetic samples from 8 wolf packs across Idaho and Wyoming

Biological Science Technician | Sudden Aspen Decline study (2013)

United States Forest Service

- Follow historical protocols to efficiently collect vegetation data for longitudinal study
- Serve as only crew member selected to continue work after the field season
- Analyze and summarize field data using Program R

Crew Leader | Uncompahgre Fritillary Butterfly (UFB) monitoring survey (Summer 2011)

Research Technician | UFB monitoring survey (Summer 2010)

United States Forest Service and Western State Colorado University

- Train crew of 6 research technicians in proper data collection techniques and safety protocols
- Schedule technicians to ensure complete data collection at 12 sites; conduct and supervise fieldwork
- Operate manual 4WD vehicles over rugged, primitive dirt roads

Research Technician | White River National Forest UFB habitat survey (Summer 2011)

United States Forest Service and Western State Colorado University

- Hike at least 15 miles daily off-trail in rugged terrain to 13,500' elevation carrying a 45-pound pack
- Plan fieldwork effectively to complete habitat assessments in one National Forest while simultaneously managing a field crew in another
- Independently navigate to remote study areas using topographical maps and compasses
- Evaluate potential habitat based on nuanced understanding of the UFB's unique habitat requirements

PUBLICATIONS

- Barker, K.**, W. Xu, A. Van Scoyoc, M. Serota, J. Moravek, A. Shawler, R. Ryan, A. Middleton. 2021. Toward a new framework for restoring lost wildlife migrations. *Conservation Letters*. DOI:10.1111/conl.12850
- Xu, W, **K. Barker**, A. Shawler, A. Van Scoyoc, J. Smith, T. Mueller, H. Sawyer, C. Andreozzi, O. Bidder, H. Karandikar, S. Mumme, E. Templin, A. Middleton. 2021. The plasticity of ungulate migration in a changing world. *Ecology* 102(4). DOI:10.1002/ecy.3293
- Loe, L.E., G. Liston, G. Pigeon, **K. Barker**, N. Horvitz, A. Stein, M. Forchhammer, W. Getz, et al. 2021. The neglected season: warmer autumns counteract harsher winters and promote population growth in Arctic reindeer. *Global Change Biology* 27, 993-1002. DOI: 10.1111/gcb.15458
- Barker, K.**, M. Mitchell, and K. Proffitt. 2019. Native forage mediates influence of irrigated agriculture on migratory behavior of elk. *Journal of Animal Ecology* 88, 1100-1110. DOI:10.1111/1365-2656.12991
- Barker, K.**, M. Mitchell, K. Proffitt, and J. DeVoe. 2019. Land management alters traditional nutritional benefits of migration for elk. *Journal of Wildlife Management* 83(1), 167-174. DOI:10.1002/jwmg.21564
- Proffitt, K., J. DeVoe, **K. Barker**, R. Durham, T. Hayes, M. Hebblewhite, C. Jourdonnais, P. Ramsey, J. Shamhart. 2019. A century of changing fire management alters ungulate forage in a wildfire-dominated landscape. *Forestry: An International Journal of Forest Research*. DOI: 10.1093/forestry/cpz017
- DeVoe, J., K. Proffitt, M. Mitchell, C. Jourdonnais, and **K. Barker**. 2019. Elk forage and risk tradeoffs during the fall archery season. *Journal of Wildlife Management* early view. DOI: 10.1002/jwmg.21638
- Mitchell, M., S. Sells, **K. Barker**, S. Bassing, S. Forshee, A. Keever, J. Goerz. 2018. Testing *A Priori* Hypotheses Improves the Reliability of Wildlife Research. *Journal of Wildlife Management* 82: 1568-1571
- Sells, S., S. Bassing, **K. Barker**, S. Forshee, A. Keever, J. Goerz, and M. Mitchell. 2018. Increased scientific rigor will improve reliability of research and efficacy of management. *Journal of Wildlife Management* 82:485-494.
- Mitchell, M., S. Sells, S. Bassing, **K. Barker**, A. Keever, S. Forshee, J. Goerz. 2018. Explicitly reporting tests of hypotheses improves communication of science. *Journal of Wildlife Management* 82(4), 671-673. DOI: 10.1002/jwmg.21461
- Coop, J., **K. Barker**, A. Knight, and J. Pecharich. 2014. Aspen (*Populus tremuloides*) stand dynamics and understory plant community changes over 46 years near Crested Butte, Colorado, USA. *Forest Ecology and Management* **318**:1-12

RESEARCH GRANTS

UW-NPS Small Grant Program (\$5,000), *National Park Service; University of Wyoming* (Apr. 2021)
Partners in Conservation Grant (\$10,000), *Teton Conservation District* (Dec. 2020)
Wyoming Governor's Big Game License Coalition Grant (\$6,000), *WY Game & Fish Comm.* (Jul. 2020)
Oliver Lyman Award (\$1,234), *UC Berkeley Fish and Wildlife Program* (Apr. 2020)
Project Advisory Committee Grant (\$15,000), *Rocky Mountain Elk Foundation* (Mar. 2020)
Cost Share Support Program Grant (\$10,000), *Teton Conservation District* (Aug. 2019)
Oliver Lyman Award (\$2,249), *UC Berkeley Fish and Wildlife Program* (Jul. 2019)
UW-NPS Small Grant Program (\$5,000), *National Park Service; University of Wyoming* (Apr. 2019)
Competitive Student Starter Grant (\$1,500), *University of California, Berkeley* (Dec. 2018)
Thornton Undergraduate Research Grants, *Thornton Committee* (Oct. 2010, Jan. 2012, Dec. 2012)

AWARDS & HONORS

Berkeley Fellowship, *University of California, Berkeley Graduate Division* (Aug. 2018 – present)
Conference Registration Scholarship, *Greater Yellowstone Coordinating Committee* (Jun. 2018)
Research and Creative Scholarship Awards, *University of Montana* (Jul. 2016, Jan. 2017)
Student Travel Award, *Spatial Ecology & Telemetry Working Group* (Sept. 2016)
Programs of National Distinction Funding Award, *University of Montana* (Jun. 2016)
Outstanding Senior Biology Student, *Western State Colorado University* (Apr. 2012)
Alpha Wolf Award, *WSCU Student Chapter of The Wildlife Society* (Apr. 2012)
Jim Olterman Award, *Colorado Chapter of The Wildlife Society* (Feb. 2012)
Casey McKenny Scholarship, *Western State Colorado University Biology Department* (Aug. 2011)
James Nauman Scholarship, *Western State Colorado University Biology Department* (Aug. 2011)
Frank G. Brooks Award, Second Place, *Tri-Beta Biological Honors Society* (Apr. 2011)
Dragonfly Award, *Western State Colorado University Biology Department* (May 2010)
Atlas Shrugged Essay Contest, Third Place, *Ayn Rand Institute* (Nov. 2009)

PRESENTATIONS

**invited speaker*

*Big game and the value of open space. February 2022. Jackson Hole Land Trust, Jackson, WY. Virtual.
How do humans alter wolf predation on native ungulates? November 2021. The Wildlife Society National Meeting. Virtual.
*Predators and People: Defining our relationship with predators in the West. March 2021. Panel Discussion. Alexander Blewett III School of Law. University of Montana. Missoula, MT.
Wolves, elk, moose, and... people?! Changing wildlife behavior in the Greater Yellowstone Ecosystem. November 2020. Popping the Science Bubble seminar. Berkeley Public Library. Berkeley, CA.
*Studying Environmental Science. May 2020. Berkeley High School STEMInist Club. Berkeley, CA.
*Wolves, plants, and people: Changing elk migrations in the Intermountain West. November 2019. University of California, Berkeley Wildlife Seminar. Berkeley, CA.
The tangled web we weave: Incorporating humans into predator-prey dynamics. October 2019. The Wildlife Society National Meeting. Reno, NV.
Wolf and elk distribution research: project overview and developing research directions. April 2019. Jackson Hole Cooperative Elk Working Group Meeting. Jackson, WY.

Quality and predictability of native forage mediate influence of irrigated agriculture on elk migration. September 2018. Tracking the Human Footprint: Biennial Scientific Conference on the Greater Yellowstone Ecosystem. Big Sky, MT.

*Effects of fire on elk forage and migratory behavior: Estimation methods and management implications. May 2018. Stakeholder and management agency meeting, Missoula, MT.

Home is where the food is: Consequences and causes of partial migration in ungulates. April 2018. Master's thesis defense presentation, Missoula, MT.

Understanding variation in migratory behavior of elk across Montana. March 2018. MPG Ranch Annual Conference, Missoula, MT

*Wildlife biology: The graduate student perspective. October 2017. UM Student Chapter of the Wildlife Society Meeting, Missoula, MT

Summer forage quality differs for migrants and residents in a partially migratory population of elk. September 2017. The Wildlife Society National Meeting, Albuquerque, NM

Nutritional consequences of varying elk migratory behaviors. May 2017. Western Association of Fish & Wildlife Agencies Deer and Elk Workshop, Sun Valley, ID

Nutritional and demographic consequences of varying elk migratory behaviors. March 2017. Montana Chapter of the Wildlife Society Annual Meeting, Helena, MT

Different migratory behaviors provide elk access to different qualities of forage during summer. February 2017. MPG Ranch Annual Conference, Missoula, MT

Comparing methods of assessing partial migration. October 2016. The Wildlife Society National Meeting poster symposium, Raleigh, NC

*North Sapphire Elk Research Project goals and objectives. March 2016. MPG Ranch Annual Conference, Missoula, MT

*Conducting a Thornton undergraduate research project: Skills gained and lessons learned. April 2013. Western State Colorado University Board of Trustees, Gunnison, CO

Red fox home range overlap and third-order habitat selection. September 2012. Guild of Rocky Mountain Ecologists and Evolutionary Biologists, Nederland, CO

*Movements, home ranges, and third-order habitat selection of red fox in Gunnison. April 2012. Natural and Environmental Sciences Friday Seminar Series, Gunnison, CO

PROFESSIONAL SERVICE

Vice President, *University of California, Berkeley ESPM Graduate Student Association* (2021-2022)
Volunteer mentor, Be A Scientist program, *Berkeley area middle schools* (2021)
Peer Reviewer, *Ecology Letters* (2021), *Rangeland Ecology and Management* (2021 & 2020), *Ecological Applications* (2020 & 2019), *Oikos* (2019), *Journal of Animal Ecol.* (2019), *Global Change Biol.* (2018)
Treasurer, *University of California, Berkeley ESPM Graduate Student Association* (2020-2021)
Secretary, *University of California, Berkeley ESPM Graduate Student Association* (2019-2020)
Judge, Montana Science Fair, 6th grade section, *Missoula, MT* (2017)
Invited Speaker Committee, *UM Wildlife Biology Graduate and Professional Student Association* (2017)
Faculty Liaison, *UM Wildlife Biology Graduate and Professional Student Association* (2016)
President, *Western State Colorado University student chapter of The Wildlife Society* (2011 - 2012)
Vice President, *Western State Colorado University student chapter of The Wildlife Society* (2009 - 2010)

RELATED TRAINING

Wilderness First Aid & CPR, *National Outdoor Leadership School* (2014), *Sierra Rescue* (2022)
Avalanche Safety, Level 1, *American Institute for Avalanche Research and Education* (2019, 2021)
Snowmobile Operator, Level 1, *United States Forest Service* (2019)
Wildlife Handling and Immobilization, *Montana Fish, Wildlife and Parks* (2016)
Bear Safety, *United States Geological Survey* (2014, 2016)
Federal Driver's License, *US Forest Service, US Geological Survey* (2010, 2014)
First Responder, *American Red Cross* (2012)
Hunter Education, *Colorado Division of Wildlife* (2011)

PROFESSIONAL MEMBERSHIPS

University of California, Berkeley Graduate Student Association (2018 – Present)
The Wildlife Society, Montana chapter and Northwest section (2015 - Present)
Tri Beta National Biological Honor Society (2009 - Present)
University of Montana Wildlife Biology Graduate and Professional Student Association (2015 - 2018)
The Wildlife Society, Colorado chapter and Central Mountains & Plains section (2009 - 2015)
The Wildlife Society, Western State Colorado University student chapter (2009 - 2012)

ADDITIONAL SKILLS

Scientific Equipment

Pneumatic dart guns, hypodermic needles, jab sticks, VHF and GPS radio collars, radio frequency receivers and antennae, remote cameras, hair snares, handheld GPS devices, compasses, topographic maps, Tomahawk and Sherman Live traps, body grip traps, foothold traps, dip nets, pitfall traps, Berlese funnels, aerial nets, mist nets, soil probes, piezometers, water sondes, electrofishers, bird band applicators

Software

Program R; ArcGIS; QGIS; Microsoft Access, Excel, Word, PowerPoint, and Publisher; Adobe DreamWeaver and Photoshop; Locate III; HOBOWare Pro