

DAVID E. AUSBAND

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Faculty Experience

- Assistant Professor, University of Idaho, Department of Fish and Wildlife Sciences
 - Graduate students advised:
 - Brianna Winkel, PhD, Southern mountain caribou recovery
 - Ariana Cerreta, PhD, Effects of harvest on gray wolves
 - Matthew Nelson, MSc, Black bear population monitoring
 - Peter Rebholz, MSc, Effects of harvest on gray wolves
 - Kaitlyn Strickfaden, MSc, Estimating snow refugia and winter severity
 - Graduate student committees served:
 - Heather Clendenin, MSc, DNA techniques for population monitoring
 - Sam Foster, PhD, Mule deer habitat use
 - Sarah McIntire, MSc, Habitat change and mesocarnivores
- Affiliate Faculty, University of Montana, Wildlife Biology Program
 - Graduate student committees served:
 - Sarah Sells, PhD, Carnivore space use
 - Ally Keever, PhD, Population demography & modeling
 - Kelsey Wellington, MSc (withdrew), Noninvasive population monitoring & estimation
 - Kenneth Loonam, MSc, Noninvasive population monitoring & estimation

Education

- Ph. D. Fish and Wildlife Biology, *The University of Montana*: 2011-2015
Wesley M. Dixon Fellow. Dissertation: Groups and mortality: their effects on cooperative behavior and population growth in a social carnivore
- M. Sc. Wildlife Biology, *The University of Montana*: 2003-2005
Thesis: Assessing the success of swift fox reintroductions on the Blackfeet Indian Reservation, Montana
- B. Sc. Wildlife Biology with University Scholar distinction, *The University of Montana*: 2000-2003
Honor's Thesis: Effects of precommercial thinning on snowshoe hare habitat use
- Division of Undergraduate Studies, Pennsylvania State University: 1996-1998

Experience

November 2018 – Present: Assistant Unit Leader (U.S. Geological Survey, Idaho Cooperative Fish and Wildlife Research Unit, University of Idaho)

- As an independent researcher I conceive, formulate and conduct large-scale field research on a variety of wildlife species with a focus on large carnivores.

- Supervise and mentor graduate students, work-study students, and temporary employees conducting research.
- Provide technical expertise to agencies and cooperators (Idaho Department of Fish and Game, Washington Department of Fish and Wildlife, U.S. Fish and Wildlife Service, National Park Service, Coeur d' Alene Tribe, Gitanyow First Nations, Nez Perce Tribe) on a variety of wildlife management issues including assistance with sampling design and analyses. For example, assisted Coeur d' Alene Tribe with sampling design and data analyses associated with their moose population monitoring program.
- Publish peer-reviewed articles summarizing research findings, present research findings at professional conferences and agency meetings.
- Provide peer review and expertise on species recovery and management plans (Swedish Environmental Protection Agency; Mexican wolf, U.S. Fish and Wildlife Service).
- Secure project funding to help address natural resource management and research needs.
- Teach graduate level courses (Advanced Fish and Wildlife Management, Communicating Science Broadly).
- Maintain compliance with a suite of federal and university required trainings and approvals (e.g., university IACUC, federal ethics training).
- Interact widely with media about research findings and carnivore ecology.

May 2015 – November 2018: Senior Wildlife Research Biologist (Idaho Department of Fish and Game)

- As an independent researcher I conceived, formulated and conducted large-scale field research related largely to carnivores in Idaho.
- Designed, tested, and implemented noninvasive statewide gray wolf population monitoring program.
 - Successful testing of novel approaches has led Idaho to transition to a program that can monitor wolves cost effectively in the absence of federal ESA funding.
 - Estimates of wolf abundance used statistical models to explore multispecies relationships between predators (wolves) and their prey (ungulates and livestock).
 - Published paper discussing the utility and limitations of a noninvasive survey tool (i.e., cameras) for conducting wildlife surveys.
- Explored the effects of public harvest on pack structure and demography of wolves using novel genetic sampling.
 - Showed that harvest has direct and indirect negative effects on recruitment due to changes to group composition.
 - Informed ongoing debate using data that show harvest can be an effective tool for managing wolf population growth.
 - Tested basic ecological principles of predator (humans)/prey (wolves) theory.
 - Results from this research have been used to engage stakeholders to help inform wildlife management and policy decisions.
- Designed study to test whether mountain lion density can be estimated using noninvasive survey data and emerging statistical modeling techniques.
 - Developed a cost effective tool to estimate mountain lion density will allow managers to begin asking ecological questions about these predators and their potential effects on ungulate populations.

- Designed study to test whether wolf density can be estimated using noninvasive survey data and emerging statistical modeling techniques.
- Collaborating on planning and implementation of multistate survey for fishers in Idaho and Montana.
 - Study will ultimately yield first ever multistate estimate of fisher distribution that can be used to inform ESA listing decisions should they arise in the future.
- Mentored 3 technicians on independent research projects derived from our sampling and project data; 1 manuscript In Review, 2 published.
- Served on graduate student committees for collaborative research projects with University of Idaho and University of Montana.
- Directed statewide field effort and coordinated with each management region and more than 100 scientists and biologists across state to deploy more than 580 cameras annually for wolf and cougar population monitoring.
- Collaborated with scientists at The University of Idaho to perform genetic analyses, work on technical issues related to research, and publish research findings in scientific journals.
- Regularly consult with other scientists from around the world (e.g. NGOs) as well as within Idaho Department of Fish and Game to provide advice and guidance on conservation and resource management issues by providing ideas, methods, and mechanisms for applying science-based information to important management concerns.
- Supervised ≤ 9 seasonal field technicians, 3 year-round Research Associate/Assistants, and 4 hound hunters conducting field surveys and noninvasive DNA sampling of wolves and cougars in both summer and winter.
- Managed annual budget in excess of \$360K.
- Represented wildlife agency under diverse and, at times, demanding circumstances. Examples include interfacing with concerned public, handling nuisance and injured wildlife, harvest check-in, sampling, and ensuring proper licenses held for harvested animals, and interactions with various media outlets that featured our research.

April 2006 – December 2015: Research Associate (Montana Cooperative Wildlife Research Unit at The University of Montana)

- As an independent researcher I conceived, formulated and conducted large-scale wildlife field research on wolves in Idaho, Montana, Wyoming, and Canada.
- Designed, implemented, and completed research project that created and tested a noninvasive monitoring framework for gray wolves using an emerging, at the time, quantitative tool (occupancy model).
 - Resulting framework has been used to monitor wolf populations cost-effectively in Montana, Idaho, and Alberta.
 - Estimates of wolf abundance use models to explore multispecies relationships between wolves, ungulate, and livestock population abundance.
- Created several new noninvasive monitoring techniques, methods, and devices to detect and monitor gray wolves.
 - Published papers discussing the creation of, utility, and limitations of these new noninvasive survey tools for conducting wildlife surveys.
 - These novel techniques and devices have been used to study wolves and coyotes in several U.S. states, Canadian Provinces, and Europe as well.

- Canid populations previously unstudied and questions unasked are now being addressed because the resulting techniques are less labor intensive and more cost-effective than traditional capture methods.
- Created, implemented, and completed research project to test new, nonlethal tool (biofence) to control interactions between predators (wolves) and their domestic prey (livestock).
 - Published paper discussing the creation of, utility, and limitations of this new nonlethal tool for mitigating wolf conflict.
 - The biofence showed initial promise and is a proactive tool meant to be deployed before depredations occur rather than reacting to them afterward.
 - Technique can be used to separate wolves from undesirable prey (livestock).
- Designed and implemented research project exploring effects of mortality on wolf groups and population growth.
 - Study continues presently and has found complex effects of harvest on wolf groups and, more generally, mortality in cooperative breeders.
 - Study has explored relationship between ungulate prey populations and their effects on aspects of wolf group behavior.
 - Results from this research have been used to engage stakeholders to help inform wildlife management and policy decisions.
- Was consulted for and spearheaded analyses for U.S. Fish and Wildlife Service to develop empirically-based models to estimate wolf pack Breeding Pair status and to predict factors influencing wolf dispersal in the Rocky Mountains. Worked with scientists on technical issues related to the research.
 - Results yielded peer-reviewed publications and were integral for informing ESA delisting decisions published in the Federal Register.
- Secured project funding that helped address natural resource management and policy needs of the state, tribal, and federal government.
 - Grants awarded from variety of institutions with bulk from private foundations totaling > \$1.2 million as well as > \$300,000 in-kind support.
- Collaborated with and provided expertise to numerous entities and natural resource agencies at federal, state, provincial, and tribal levels as well as private industry and non-government conservation organizations.
- Collaborated with University of Idaho to perform genetic analyses and support graduate projects related to overall project.
- Worked with private industry to gain access to survey lands and share subsequent survey findings.
- Awarded 3 “Best Presentation” awards for presented papers related to research.
- Supervised large-scale field research by employing up to 16 seasonal technicians in 4 separate field crews, 1-2 year-round technicians, mentoring undergraduate & graduate student research project(s), and maintaining IACUC protocol and compliance with University.
- Interacted widely with media (print, radio, and television) and local rural communities interested in our work to foster support for implementation of my research findings.

February 2006 – April 2006: Contract Writer (Montana Natural Heritage Program)

- Authored reptile species accounts that were used to help make management recommendations to the state wildlife agency.

May 2000 – April 2006: Wildlife Biology Intern (Montana Department of Natural Resources & Conservation)

- Designed and implemented snowshoe hare/forest thinning research project.
 - Study used a BACI design to test for effect of forest thinning on prey populations (snowshoe hares) in critical predator (Canada lynx) habitat.
 - Findings have been cited numerous times in the Federal Register and have informed lynx ESA listing decisions.
- Supervised and coordinated daily tasks for 3-4 volunteers during both fall and winter field seasons.
- Wildlife monitoring on state lands: compiled state wildlife observation database, bald eagle and common loon nest monitoring, deployed grizzly bear DNA hair traps.
- Timber harvest monitoring: snag, snag recruitment, and coarse woody debris retention sampling - compilation and analysis.
- Participated in Habitat Conservation Plan meetings regarding Conservation Strategies.
- Delineated state lands within grizzly bear linkage zones for Habitat Conservation Plan inclusion and assessed screening adequacy of vegetation to ensure compliance with Swan River Valley Grizzly Bear Management Agreement - compilation and analysis.
- Reviewed and provided comments on EIS documents.

September 2003 – December 2005: Research Assistant & Teaching Assistant (University of Montana)

- Designed and implemented study that used field estimates and a Population Viability Analysis approach to determine swift fox reintroduction success on the Blackfoot Indian Reservation.
 - Results demonstrate explicitly-defined success criteria are critical at the outset of reintroductions and Native American Tribes are powerful forces for conservation.
- Supervised and conducted surveys of prey abundance across large-scale field study area.
- Assisted in securing \$50,000 in project funding that helped address natural resource management and policy needs of the state, tribal, and federal government.
- Developed reintroduction information booth at North American Indian Days pow-wow.
- Many visits to ranchers on and off the Reservation to talk about the project, obtain sighting reports and permission to travel private lands.
- Interaction with domestic and foreign media. Print and television.
- Supervised and coordinated daily tasks for 4 field technicians.
- Trapped, radiocollared, and monitored foxes via radio telemetry (land and air), surveyed and monitored natal dens.
- Graduate Teaching Assistant for Wildlife Habitat Conservation (Wildlife Biology 370, 2004 and 2005) and Mammalogy Lab (Biology 306, 2003).

June 2002 – September 2003: Wildlife Technician (Blackfoot Tribe Swift Fox Reintroduction Project & Defenders of Wildlife)

- Many visits to ranchers and tribal members on and off the Reservation to talk about the project, obtain sighting reports and permission to travel private or leased lands.
- Worked for non-governmental organization to release captive-bred foxes into wild.
- Trapped, radiocollared, and monitored foxes via radio telemetry (land and air), surveyed and monitored natal dens.

- Developed reintroduction information booth at North American Indian Days pow-wow.

September 2000 – May 2003: Research Aide (Aldo Leopold Wilderness Research Institute – U.S. Forest Service)

- Researched, compiled, and posted onto web all Congressional laws relating to Wilderness.
- Annotated and proofed bibliographies for USFS General Technical Reports.
- Updated Institute's web site including dissemination of new Institute-authored publications and papers.
- Built database to track demographics of publication requests using Access and compiled and expanded Institute's library database.

Peer-reviewed Publications (h-index = 18, i10 index = 28, citations = 1034)

Bold = external agency collaborator, Underline = student

57. Ausband, D.E., and M.S. Mitchell. In Review. Critical knowledge gaps for gray wolves in the Rockies. *BioScience*.
56. Strickfaden, K.M., A.M. Marshall, **L.K. Svancara**, D.E. Ausband, and T. Link. In Review. *edger*: An R package facilitating snow depth measurements at remote camera stations. *Methods in Ecology and Evolution*. (IP-132219; BAO approval:)
55. Ausband, D.E. In Review. Genetic diversity and mate selection in a reintroduced population of gray wolves. *Scientific Reports*. (IP-130898; BAO approval:)
54. Sells, S.N., M.S. Mitchell, D.E. Ausband, A.D. Luis, D.J. Emlen, **K.M Podruzny**, and **J.A. Gude**. In Review. Economical defense of resources structures territorial space use in a cooperative carnivore. *Proceedings of the National Academy of Sciences*.
53. Ausband, D.E., and J.M. Krohner. In Review. Carnivores in color: Pelt color patterns among carnivores in Idaho. *Journal of Mammalogy*. (IP-130703; BAO approval: 8 Aug 2021)
52. Ausband, D.E. In Review. Inherit the kingdom or storm the castle? Breeding strategies in gray wolves. *Ethology*. (IP-127635; BAO approval: 27 Aug 2021)
51. Sells, S.N., M.S. Mitchell, **K.M. Podruzny**, D.E. Ausband, K.E. Loonam, and **J.A. Gude**. In Review. Group size in a cooperative carnivore. *Journal of Wildlife Management*.
50. Ausband, D.E., P. Lukacs, **M. Hurley**, **S. Roberts**, K. Strickfaden, and A. Moeller. In Press. Estimating wolf abundance using cameras. *Ecosphere*. (IP-127324; BAO approval: 22 July 2021)
49. **Boyd, D.**, D.E. Ausband, **J. Heffelfinger**, J. Hinton, **B. Patterson**, and A. Wydeven. In Press. Wolves. In: *Wild furbearers of North America*. Hiller, T., ed. Wildlife Ecology Institute. Helena, MT, USA. (IP-108973; BAO approval: 4 Feb 2020)
48. Ausband, D.E. 2021. Wolf use of humanmade objects during pup-rearing. *Animal Behavior and Cognition*. 8:405-414. (IP-124930; BAO approval: 1 Mar 2021)

47. Loonam, K.E., P.M. Lukacs, D.E. Ausband., M.S. Mitchell, and H.S. Robinson. 2021. Assessing the robustness of a new method for estimating wildlife abundance using remote cameras. *Ecological Applications*. (IP-117335; BAO approval: 6 Mar 2020)
46. Ausband, D.E., and M.S. Mitchell. 2021. The effect of group size on wolf reproduction depends on density. *Animal Conservation*. (IP-077090; BAO approval: 21 Jun 2017)
45. Loonam, K.E., D.E. Ausband, P.M. Lukacs, M.S. Mitchell, and H.S. Robinson. 2021. Estimating abundance of an unmarked, low-density species using camera traps. *Journal of Wildlife Management*. (IP-117334; BAO approval: 1 Mar 2020)
44. Ausband, D.E., and L. Waits. 2020. Does harvest affect genetic diversity in gray wolves? *Molecular Ecology*. 29:3187-3195. (IP-116681; BAO approval: 28 May 2020)
43. Ausband, D.E., Bassing, S.B., and M.S. Mitchell. 2020. Environmental and social factors influencing wolf (*Canis lupus*) howling behavior. *Ethology*. 126:890-899. (IP-114742; BAO approval: 31 Dec 2019)
42. Bassing, S.B., D.E. Ausband, M.S. Mitchell, M. Schwartz, and L. Waits. 2020. Immigration does not offset harvest mortality in a cooperatively breeding carnivore. *Animal Conservation*. (IP-117321; BAO approval: 29 Nov 2019)
41. Soller, J.M., D.E. Ausband, and M.S. Gunther. 2020. The curse of observer experience: error in noninvasive genetic sampling. *PLOS ONE*.15(3): e0229762.
40. Clendenin, H.R., J. Adams, D.E. Ausband, **J.A. Hayden**, P. Hohenloe, and L. Waits. 2020. Combining harvest and genetics to estimate reproduction in wolves. *Journal of Wildlife Management*. 84:492-504.
39. Ausband, D.E. 2019. Pair bonds, reproductive success, and rise of alternate mating strategies in a social carnivore. *Behavioural Ecology*. 30:1618-1623.
38. Jacobs, C., and D.E. Ausband. 2019. Wolves in space: locations of individuals and their effect on pup survival in groups of a cooperatively breeding canid. *Animal Behaviour*. 155:189-197.
37. Krohner, J., and D.E. Ausband. 2019. Associations between sympatric apex predators across a diverse landscape. *Mammal Research*. 64:203-212.
36. Bassing, S.B., D.E. Ausband, M.S. Mitchell, P. Lukacs, A. Keever, **G. Hale**, and L. Waits. 2019. Stable pack abundance and distribution in a harvested wolf population. *Journal of Wildlife Management*. 83:577-590. (IP-103003; BAO approval: 1 Nov 2018)
35. Horne, J., D.E. Ausband, M. Hurley, J. Struthers, J.E. Berg, and K. Groth. 2019. Integrated population model to improve knowledge and management of Idaho wolves. *Journal of Wildlife Management*. 83:32-42.
34. Ausband, D.E. 2018. Multiple breeding individuals within groups in a social carnivore. *Journal of Mammalogy*. 99:836-834.

33. Jacobs, C., and D.E. Ausband. 2018. An evaluation of camera trap performance: What are you missing and does deployment height matter? *Remote Sensing in Ecology and Conservation*. doi: 10.1002/rse2.81
32. Jacobs, C., and D.E. Ausband. 2018. Pup-rearing habitat use in a harvested carnivore. *Journal of Wildlife Management*. 82:802-809.
31. Ausband, D.E., M.S. Mitchell, and L. Waits. 2017. Effects of breeder turnover and harvest on group composition and recruitment in a social carnivore. *Journal of Animal Ecology*. 86:1094-1011. (IP-087215; BAO approval: 5 Jun 17)
30. Ausband, D.E., M.S. Mitchell, C. Stansbury, J.L. Stenglein, and L. Waits. 2017. Harvest and group effects on pup survival in a cooperative breeder. *Proceedings of the Royal Society B*. 284. DOI: 10.1098/rspb.2017.0580. (IP-076152; BAO approval: 11 May 17)
29. **Jimenez, M.D., E.E. Bangs, D.K. Boyd, D.W. Smith, S.A. Becker**, D.E. Ausband, S.P. Woodruff, **E.H. Bradley, J. Holyan, and K. Laudon**. 2017. Wolf dispersal in the northern Rocky Mountains, Western United States: 1993-2008. *Journal of Wildlife Management*. 81:581-592. DOI: 10.1002/jwmg.21238.
28. Ausband, D.E., M.S. Mitchell, S.B. Bassing, A. Morehouse, **D.W. Smith, D.R. Stahler, and J.S. Struthers**. 2016. Individual, group, and environmental influences on helping behavior in a social carnivore. *Ethology*. 122:963-972. (IP-076150; BAO approval: 6 Oct 16)
27. Stansbury, C.R., D.E. Ausband, **P. Zager, C.M. Mack**, and L.P. Waits. 2016. Identifying gray wolf packs and dispersers using noninvasive genetic samples. *Journal of Wildlife Management*. 80:1408-1419.
26. Ausband, D.E. 2016. Gray wolf harvest in Idaho. *Wildlife Society Bulletin*. 40:500-505.
25. Ausband, D.E., S.B. Bassing, M.S. Mitchell, M. Nordhagen, **D.W. Smith, and D.R. Stahler**. 2016. Dog days of summer: influences on decision of wolves to move pups. *Journal of Mammalogy*. 97:1282-1287. (IP-076548; BAO approval: 7 Jun 16)
24. Ausband, D.E., C. Stansbury, J.L. Stenglein, **J.L. Struthers**, and L.P. Waits. 2015. Recruitment in a social carnivore before and after harvest. *Animal Conservation* 18:415-423.
23. Stansbury, C.R., D.E. Ausband, **P. Zager, C.M. Mack**, C.R. Miller, M.W. Pennell, and L.P. Waits. 2014. A long-term population monitoring approach for a wide-ranging carnivore: noninvasive genetic sampling of gray wolf rendezvous sites in Idaho, USA. *Journal of Wildlife Management*. 78:1040–1049.
22. Ausband, D.E., L.N. Rich, E.M. Glenn, M.S. Mitchell, **P. Zager, and C.M. Mack**. 2014. Monitoring gray wolf populations using multiple survey methods. *Journal of Wildlife Management*. 78:335-346. (IP-048939; BAO approval: 10 Dec 13)
21. Rich, L.N., **R.E. Russell**, E.M. Glenn, M.S. Mitchell, **J.A. Gude, K.M. Podruzny, C.A. Sime, K. Laudon**, D.E. Ausband, and J.D. Nichols. 2013. Estimating occupancy and predicting

numbers of gray wolf packs in Montana using hunter surveys. *Journal of Wildlife Management*. 77:1280-1289.

20. Brennan, A., P.C. Cross, D.E. Ausband, A. Barbknecht, and S. Creel. 2013. Testing automated howling devices in a wintertime wolf survey. *Wildlife Society Bulletin*. 37:389-393.
19. Ausband, D.E., M.S. Mitchell, S.B. Bassing, and **C. White**. 2013. No trespassing: using a biofence to manipulate wolf movements. *Wildlife Research*. 40:207-216.
18. Ruprecht, J.S., D.E. Ausband, M.S. Mitchell, E.O. Garton, and **P. Zager**. 2012. Homesite attendance based on sex, reproductive status and number of helpers in gray wolf packs. *Journal of Mammalogy*. 93:1001-1005.
17. Ausband, D.E., J.Skrivseth, and M.S. Mitchell. 2011. An automated device for provoking and capturing wildlife calls. *Wildlife Society Bulletin*. 35:498-503.
16. Stenglein J.L., L.P. Waits, D.E. Ausband, **P. Zager, and C. Mack**. 2011. Estimating gray wolf pack size and family relationships using noninvasive genetic sampling at rendezvous sites. *Journal of Mammalogy*. 92:784-795.
15. Ausband, D.E., J. Young, B. Fannin, M.S. Mitchell, J.L. Stenglein, L.P. Waits, and J.A. Shivik. 2011. Hair of the dog: obtaining samples from coyotes and wolves noninvasively. *Wildlife Society Bulletin*. 35:105-111.
14. Ausband, D.E. 2010. Book review: *The Wolf's Tooth*. *The Scientist*. 24(8).
13. Mitchell, M.S., **J.A. Gude**, D.E. Ausband, **C.A. Sime, E.E. Bangs, M.D. Jimenez, C.M. Mack, T.J. Meier, S. Nadeau, and D.W. Smith**. 2010. Temporal validation of an estimator for successful breeding pairs of wolves *Canis lupus* in the U.S. northern Rocky Mountains. *Wildlife Biology*. 16:101-106.
12. Ausband, D.E., M.S. Mitchell, K. Doherty, **P. Zager, C.M. Mack, and J. Holyan**. 2010. Surveying predicted rendezvous sites to monitor gray wolf populations. *Journal of Wildlife Management*. 74:1043-1049.
11. Stenglein, J.L., L.P. Waits, D.E. Ausband, **P. Zager, and C.M. Mack**. 2010. Efficient noninvasive genetic sampling for monitoring reintroduced wolves. *Journal of Wildlife Management*. 74:1050-1058.
10. Stenglein, J.L., M. De Barba, D.E. Ausband, and L.P. Waits. 2010. Impacts of sampling location within a faeces on DNA quality in two carnivore species. *Molecular Ecology Resources*. 10:109-114.
9. **Gude, J.A.**, M.S. Mitchell, D.E. Ausband, **C. Sime, and E. Bangs**. 2009. Internal validation of predictive logistic regression models for decision making in wildlife management. *Wildlife Biology*. 15(4):1-18.
8. Ausband, D., and A. Moehrensclager. 2009. Long-range juvenile dispersal and its implication for conservation of reintroduced swift fox *Vulpes velox* populations in the USA and Canada. *Oryx*. 43(1):73-77.

7. Ausband, D.E., **J. Holyan, and C. Mack**. 2009. Longevity and adaptability of a reintroduced gray wolf. *Northwestern Naturalist*. 90:44-47.
6. Mitchell, M. S., D.E. Ausband, **C. A. Sime, E. E. Bangs, J. A. Gude, M. D. Jimenez, C. M. Mack, T. J. Meier, M. S. Nadeau, and D. W. Smith**. 2008. Estimation of successful breeding pairs for wolves in the Northern Rocky Mountains, USA. *Journal of Wildlife Management*. 72:881-891.
5. Waters, S.S., C. Smeeton, K.V. Weagle, and D.E. Ausband. 2007. Re-introducing the swift fox to Blackfeet Tribal Lands, Montana, USA. *IUCN Reintroduction News*. 26:34-35.
4. Ausband, D.E. and K.F. Foresman. 2007. Swift fox reintroductions on the Blackfeet Indian Reservation, Montana. USA. *Biological Conservation*. 136:423-430.
3. Ausband, D.E. and K.F. Foresman. 2007. Dispersal, survival, and reproduction of wild-born, yearling swift foxes in a reintroduced population. *Canadian Journal of Zoology*. 85:185-189.
2. Ausband, D.E. and E.A. Ausband. 2006. Observations of interactions between swift fox and badgers. *The Prairie Naturalist*. 38(1):63-64.
1. Ausband, D.E., and **G.R. Baty**. 2005. Effects of precommercial thinning on snowshoe hare habitat use during winter in low-elevation montane forests. *Canadian Journal of Forest Research*. 35(1): 206-210.

Grants & Gifts (Total >\$2 million)

63. Ausband, D.E. How do hunting and trapping affect Idaho's wolves? Willard L. Eccles, 2021, Charitable Foundation, \$14,000
62. Ausband, D.E. Determining the effects of harvest on gray wolves, Private individual, 2021, \$20,000
61. Ausband, D.E. A mesocarnivore survey in southern Idaho. Summerlee Foundation, 2021-2022, \$25,000
60. Ausband, D.E. Determining the effects of harvest on gray wolves, Bernice Barbour Foundation, 2019-2020, \$24,192
59. Ausband, D.E. Determining the effects of harvest on gray wolves, Coypu Foundation, 2021-2022, \$28,000
58. Ausband, D.E. Determining the effects of harvest on gray wolves, Private individual, 2021-2022, \$25,000
57. Ausband, D.E. Determining the effects of harvest on gray wolves, Private individual, 2020-2021, \$25,000
56. Ausband, D.E. Assessing habitat suitability and the spatial design of recovery options for southern mountain caribou in western North America. U.S. Fish and Wildlife Service, 2020-2023, \$137,305
55. Ausband, D.E. and T. Link. Estimating snow refugia and winter severity from cameras, U.S. Geological Survey, 2019-2023, \$252,900
54. Ausband, D.E. Monitoring black bear populations, Idaho Department of Fish and Game, 2019-2022, \$373,000
53. Ausband, D.E. Determining the effects of harvest on gray wolves, Bernice Barbour Foundation, 2019-2020, \$27,000

52. Ausband, D.E. Determining the effects of harvest on gray wolves, University of Idaho, USDA McIntire-Stennis grant, 2019-2021, \$50,000
51. Ausband, D.E. Determining the effects of harvest on gray wolves, U.S. Geological Survey, 2019-2021, \$49,750
50. Ausband, D.E. Determining the effects of harvest on gray wolves, Idaho Fish and Wildlife Foundation, 2019-2020, \$10,000
49. Ausband, D.E. Determining the effects of harvest on gray wolves, Steven Leuthold Family Foundation, 2014, \$13,000
48. Ausband, D.E. and M.S. Mitchell. Developing noninvasive techniques for wolf population monitoring, Idaho Department of Fish & Game, 2014, \$20,000
47. Ausband, D.E. Determining the effects of harvest on gray wolves, Nancy Carroll-Draper Foundation, 2014, \$10,000
46. Ausband, D.E. and M.S. Mitchell. Developing noninvasive techniques for wolf population monitoring, Idaho Department of Fish & Game, 2013, \$20,000
45. Ausband, D.E. Determining the effects of harvest on gray wolves, Bernice Barbour Foundation, 2013-2016: \$69,680
44. Ausband, D.E. Determining the effects of harvest on gray wolves, Coypu Foundation, 2013-2014, \$31,269
43. Ausband, D.E. Determining the effects of harvest on gray wolves, Steven Leuthold Family Foundation, 2013, \$10,000
42. Ausband, D.E. Determining the effects of harvest on gray wolves, Yellowstone National Park, 2013, \$2,500
41. Ausband, D.E. Developing noninvasive techniques for wolf population monitoring, Alberta Conservation Association, 2013, \$5,000
40. Ausband, D.E. Determining the effects of harvest on gray wolves, Regina Bauer Frankenberg Foundation, 2012-2014, \$150,000
39. Ausband, D.E. Determining the effects of harvest on gray wolves, Leonard X. Bosack & Bette M. Kruger Foundation, 2012: \$9,600
38. Ausband, D.E. Developing nonlethal techniques to deter wolf-livestock conflicts, Bernice Barbour Foundation, 2012, \$20,550
37. Ausband, D.E. and M.S. Mitchell. Developing noninvasive techniques for wolf population monitoring, Idaho Department of Fish & Game, 2012, \$20,000
36. Ausband, D.E. and M.S. Mitchell. Developing noninvasive techniques for wolf population monitoring, U.S. Fish & Wildlife Service, 2012, \$22,500
35. Ausband, D.E. Determining the effects of harvest on gray wolves, Steven Leuthold Family Foundation, 2012, \$8,000
34. Ausband, D.E. and M.S. Mitchell. Developing noninvasive techniques for wolf population monitoring, Alberta Innovates Biosolutions, 2012-2014, \$175,000
33. Ausband, D.E. and M.S. Mitchell. Developing noninvasive techniques for wolf population monitoring, Alberta Environment & Sustainable Resource Development, 2012, \$10,000
32. Ausband, D.E. Determining the effects of harvest on gray wolves, Yellowstone National Park, 2012: \$5,000
31. Ausband, D.E. Determining the effects of harvest on gray wolves, Eppley Foundation for Scientific Research, 2012, \$24,000
30. Ausband, D.E. and M.S. Mitchell. Developing noninvasive techniques for wolf population monitoring, Idaho Department of Fish & Game, 2011, \$10,000
29. Ausband, D.E. and M.S. Mitchell. Analyzing wolf dispersal data for the northern Rockies DPS, U.S. Fish & Wildlife Service, 2011, \$20,000
28. Ausband, D.E. and M.S. Mitchell. Developing noninvasive techniques for wolf population monitoring, Alberta Environment & Sustainable Resource Development, 2011, \$10,000

27. Ausband, D.E. Determining the effects of harvest on gray wolves, Wolf Recovery Foundation, 2011, \$2,500
26. Ausband, D.E. Developing noninvasive techniques for wolf population monitoring, Oregon Zoo Future for Wildlife Grants, 2011, \$5,950
25. Ausband, D.E. Developing nonlethal techniques to deter wolf-livestock conflicts, Animal Welfare Institute, 2011, \$10,000
24. Ausband, D.E. Developing noninvasive techniques for wolf population monitoring, The Mountaineers Foundation, 2011, \$5,500
23. Ausband, D.E. Developing nonlethal techniques to deter wolf-livestock conflicts, Leonard X. Bosack & Bette M. Kruger Foundation, 2010-2011: \$160,000
22. Ausband, D.E. Developing nonlethal techniques to deter wolf-livestock conflicts, Bernice Barbour Foundation, 2010, \$10,060
21. Ausband, D.E. Developing noninvasive techniques for wolf population monitoring, Oregon Zoo Future for Wildlife Grants, 2010, \$11,240
20. Ausband, D.E. and M.S. Mitchell. Surveying for wolves in the Selkirk Mountains, U.S. Fish & Wildlife Service, 2010, \$20,000
19. Ausband, D.E. Developing nonlethal techniques to deter wolf-livestock conflicts Kampe Foundation, 2010, \$5,000
18. Ausband, D.E. and M.S. Mitchell. Developing noninvasive techniques for wolf population monitoring, Alberta Environment & Sustainable Resource Development, 2010, \$6,000
17. Ausband, D.E. Developing noninvasive techniques for wolf population monitoring, Regina Bauer Frankenberg Foundation, 2009-2011, \$150,000
16. Ausband, D.E. and M.S. Mitchell. Developing noninvasive techniques for wolf population monitoring, Idaho Department of Fish & Game, 2009, \$30,000
15. Ausband, D.E. and M.S. Mitchell. Developing noninvasive techniques for wolf population monitoring Bureau of Indian Affairs, 2009, \$20,000
14. Ausband, D.E. Developing noninvasive techniques for wolf population monitoring, The Mountaineers Foundation, 2009, \$4,000
13. Ausband, D.E. and T. Loya. Developing noninvasive techniques for wolf population monitoring, MILES, 2008-2009, \$8,500
12. Ausband, D.E. Developing noninvasive techniques for wolf population monitoring, Wolf Recovery Foundation, 2008-2010, \$15,700
11. Ausband, D.E. Developing noninvasive techniques for wolf population monitoring, Wilburforce Foundation, 2008, \$5,000
10. Ausband, D.E. and M.S. Mitchell. Developing noninvasive techniques for wolf population monitoring, Idaho Department of Fish & Game, 2008, \$5,500
9. Ausband, D.E. and T. Loya. Developing noninvasive techniques for wolf population monitoring, Irene Evers, 2008, \$2,500
8. Ausband, D.E. Developing noninvasive techniques for wolf population monitoring, Defenders of Wildlife, 2008, \$2,500
7. Ausband, D.E. Developing noninvasive techniques for wolf population monitoring, Montana Fish, Wildlife & Parks, 2008, \$1,750
6. Ausband, D.E. Developing noninvasive techniques for wolf population monitoring, Montana Department of Natural Resources & Conservation, 2008, \$1,500
5. Ausband, D.E. and T. Loya. Developing noninvasive techniques for wolf population monitoring, EPSCOR, 2008, \$1,500
4. Ausband, D.E. and T. Loya. Developing noninvasive techniques for wolf population monitoring, Five Valleys Land Trust, 2008, \$1,000
3. Ausband, D.E. and M.S. Mitchell. Developing noninvasive techniques for wolf population monitoring, Idaho Department of Fish & Game, 2007, \$21,000

2. Ausband, D.E. Swift fox reintroductions on the Blackfeet Reservation, Sigma Xi Society, 2004, \$500
1. Foresman, K.R. and Ausband, D.E. Swift fox reintroductions on the Blackfeet Reservation: a prey assessment, Montana Fish, Wildlife and Parks, State Wildlife Grants, 2003-2005, \$50,500

Awards and Honors

- U.S. Geological Survey 2020 Performance Award (\$2,800)
- Nominated for Idaho Department of Fish and Game Employee of the Year (2017)
- Idaho Department of Fish and Game, 2016 Wildlife Bureau Innovation Award
- Best Professional Presentation, 2011 Idaho Chapter of the Wildlife Society
- Best Technical Paper, 2011 Oregon Chapter of the Wildlife Society
- Best Professional Presentation, 2007 Idaho Chapter of the Wildlife Society
- University of Montana 2015 Award for Excellence in Graduate Research (\$2,500)
- Wesley M. Dixon PhD Fellowship (\$30,000)
- Shikar Safari Club International scholarship for graduate students (\$4,000)
- Cirica Family Scholarship for undergraduate students (\$5,000)

Peer and Expert Review

Peer reviewer for: Science, Scientific Reports, Journal of Applied Ecology, Molecular Ecology Resources, Evolutionary Applications, Conservation Genetics, Ethology, Journal of Mammalogy, Journal of Wildlife Management, Mammal Research, Animal Behavior and Cognition, Polar Research, Journal of Fish and Wildlife Management, Wildlife Society Bulletin, Mammalian Biology, Human Dimensions of Wildlife, Canadian Journal of Zoology, Wildlife Biology in Practice, European Journal of Wildlife Research, Southwestern Naturalist, Proceedings of the Channel Islands Symposium

Scientific and Interagency Meetings

- Member Interagency Grizzly Bear Bitterroot Recovery Area Science Committee (2021)
- Mexican wolf recovery plan peer review panel (2021)
- Swedish Environmental Protection Agency wolf monitoring review panel (2019)
- Washington Department of Fish and Wildlife wolf data sharing committee (2019)
- Interagency forest carnivore survey planning meetings (2017-2018)
- Idaho Department of Fish and Game wolf management plan team meeting (2016)
- Idaho Department of Fish and Game regional wildlife managers meeting (2016)
- Member of the Swift Fox Conservation Team Research Committee (2015)
- Trappers Association of Southwest Alberta, Annual 2-day rendezvous (2014)
- Yellowstone National Park wolf research collaborators meeting (2014)
- Northern Rockies Interagency wolf management meetings (2006-2010)
- Nez Perce Tribe and Idaho Department of Fish and Game annual wolf monitoring meetings (2006-2014)
- British Columbia wolf monitoring meeting (2015)
- Southwest Alberta Cattlemen carnivore monitoring meetings (four in 2013)
- Chain Lakes Livestock producers, Southwest Alberta (2013)
- Southwest Alberta AESRD and Waterton Biosphere Reserve Association carnivore monitoring meetings (2010-2014)
- Montana Fish, Wildlife, and Parks regional wildlife managers meetings (2006-2010)

- Expert panel on Best Management Practices for agricultural lands and prairie throughout swift fox range in Canada (2006-2007)
- Swift Fox Conservation Team meetings (2004-2006)

Oral presentations (lead author)

- 2020 Idaho Chapter of the Wildlife Society
 - “Monogamy, it’s complicated. Breeding strategies in gray wolves”
- 2019 Institute of Arctic Biology, Life Science Hour Seminar Series, University of Alaska, Fairbanks
 - “Seriously? Is there anything we don’t already know about wolves?”
 - Invited speaker
- 2019 Wildlife Society Annual Conference
 - “Monogamy, it’s complicated. Breeding strategies in gray wolves”
- 2018 Idaho Chapter of the Wildlife Society
 - “Ten years after wolf harvest: What do we know?”
- 2017 Wildlife Society Annual Conference
 - “Harvest and group effects on pup survival in gray wolves”
- IDFG In-Service Training School
 - “What we thought we knew about wolf harvest was wrong”
 - Invited speaker
- 2017 Idaho Chapter of the Wildlife Society
 - “Gray wolf harvest in Idaho”
- 2016 Ecology Series Seminar, Humboldt State University
 - “Carnivore conservation in a complex world: from the Tribes to Feds to States”
 - Invited speaker
- 2016 Idaho Chapter of the Wildlife Society
 - “Effects of harvest on recruitment and wolf pack structure”
- 2015 Idaho Chapter of the Wildlife Society
 - “Survival and recruitment of gray wolf pups before and after harvest”
- 2015 Montana Chapter of the Wildlife Society
 - “Survival and recruitment of gray wolf pups before and after harvest”
- 2014 North American Congress for Conservation Biology
 - “Carnivore conservation and Native American Tribes: tools for now”
 - Invited speaker and panelist
- 2014 American Association for Laboratory Animal Science, Northern Rocky Mountain Branch Science Group
 - “What we know – and don’t know – about the wolves in your backyard”
 - Invited speaker
- 2014. Washington State University Student Chapter of the Wildlife Society. Pullman, WA.
 - “Groups and mortality: their effects on cooperative behavior and population growth in a social carnivore”
 - Invited Speaker
- 2013 Montana Chapter of The Wildlife Society
 - “Home alone: influence of individual, pack, and environmental variation on pup attendance behavior in gray wolves”
- 2013 Idaho Chapter of The Wildlife Society
 - “Home alone: influence of individual, pack, and environmental variation on pup attendance behavior in gray wolves”
- 2012 University of Montana Research Spotlight

- “Who’s afraid of the big bad wolf when you can howl back?”
- Invited speaker and panelist
- 2011 Idaho Chapter of The Wildlife Society
 - “Developing gray wolf population monitoring techniques”
- 2011 Idaho Chapter of The Wildlife Society
 - “How to trick a wolf: using a biofence to manipulate wolf movements”
- 2011 Montana Chapter of The Wildlife Society
 - “How to trick a wolf: manipulating pack movements with biofencing”
- 2011 Animal Grantmakers Conference
 - “How to trick a wolf: using a biofence to manipulate wolf movements”
 - Invited speaker and panelist
- 2011 Oregon Chapter of the Wildlife Society
 - “How to trick a wolf: manipulating pack movements with biofencing”
- 2010 Montana Chapter of The Wildlife Society
 - “Reintroducing swift foxes to the Blackfeet Reservation”
- 2009 Wildlife Society Annual Conference
 - “Developing gray wolf population monitoring techniques”
- 2009 North American Carnivores Conference
 - “Developing gray wolf population monitoring techniques”
- 2008 Idaho Chapter of The Wildlife Society
 - “Developing wolf population monitoring methods: a research update”
- 2008 North American Wolf Conference
 - “Developing wolf population monitoring methods: a research update”
- 2007 Idaho Chapter of The Wildlife Society
 - “Developing a framework for monitoring wolves in Idaho”
- 2007 Montana Chapter of The Wildlife Society
 - “Developing a framework for monitoring wolves in Idaho”
- 2006 Swift Fox Conservation Team Meeting
 - “Assessing the success of swift fox reintroductions on the Blackfeet Reservation”
- 2005 Swift Fox Conservation Team Meeting
 - “Assessing the success of swift fox reintroductions on the Blackfeet Reservation”
- 2005 Montana Chapter of The Wildlife Society
 - “Assessing the success of swift fox reintroductions on the Blackfeet Reservation”
- 2004 Montana Chapter of The Wildlife Society
 - “Snowshoe hare habitat use after forest thinning in northwest Montana”
- 2003 University of Montana Undergraduate Research Conference
 - “Snowshoe hare habitat use after forest thinning in northwest Montana”

Teaching

- Advanced Fish and Wildlife Management (University of Idaho, 2020, 2022)
- Communicating Science Broadly (University of Idaho, 2021)

Guest Lecturer University courses

- Fish and Wildlife Graduate Seminar (University of Idaho, 2020, 2021 (2x))
- Wildlife Management (University of Arkansas, 2021)
- Wildlife Management (University of Idaho, 2017, 2018, 2019, 2021)
- Conservation Biology (University of Idaho, 2016, 2019, 2021)
- Mammalogy (University of Montana, 2008)

Workshops, Certifications

- Structured Decision Making Workshop, NCTC, USGS, on-line modules
- U.S.G.S. New Scientist Orientation, Reston, VA
- In-Service Training School, IDFG, Boise, ID
- Vortex population modeling workshop, Chicago, IL
- Occupancy modeling workshop, USGS Research Station, Patuxent, MD
- Wildlife and Landscape Linkage Workshop, Missoula, MT
- Certified from Idaho State Veterinarian (Dr. Mark Drew) wildlife chemical immobilization standard and advanced courses
- U.S. Department of Interior flight safety courses (B3 – 5 classes)
- Defensive Driving and Passenger van operator
- Completed Saferiders Snowmobile Safety Awareness Program
- Principal Investigator grants training, University of Montana
- Red Cross First-aid and CPR certified

Professional Societies

- Member of The Wildlife Society
- Member of Idaho Chapter of The Wildlife Society

Genetic, population & statistical analysis software:

- Program R, Colony, CoAncestry, FSTAT, Genpop, Genalex, Timelapse, VORTEX, RavenLite, PRESENCE

Committees & Volunteer work

- Staff hire Search Committee, Program Coordinator for Idaho Cooperative Fish and Wildlife Research Unit, Department of Fish and Wildlife Sciences, University of Idaho, 2021
- Faculty Search Committee, Assistant Unit Leader for Idaho Cooperative Fish and Wildlife Research Unit, Department of Fish and Wildlife Sciences, University of Idaho, 2020
- University of Idaho Fish and Wildlife Film Festival, 2020
- Staff hire Search Committee, Program Coordinator for Idaho Cooperative Fish and Wildlife Research Unit, Department of Fish and Wildlife Sciences, University of Idaho, 2020
- Faculty promotion review panel, Department of Fish and Wildlife Sciences, University of Idaho, 2019
- Research grade evaluation review panel, U.S. Geological Survey, Reston VA, 2019
- Committee for establishing a non-thesis fish and wildlife sciences option in the MNR program committee University of Idaho, 2019-2020
- University of Idaho Fish and Wildlife Film Festival Judge (December 2018, 2019)
- Fernan Lake Spring Cleanup
- Established Tom Meier Memorial Fund: secured \$4K from individuals to provide paid internship for wolf monitoring work in Montana
- Russell Elementary School playground project: secured \$12K in grants from Foundations
- Montana FWP bighorn sheep capture
- Bancroft wetlands monthly cleanup
- Montana Chapter of The Wildlife Society: Presentation Judge & Session Moderator

- Montana FWP Wind farm project, swift fox capture
- UMT Thompson River highway project, bighorn sheep monitoring
- Meadow Hills after school Flagship Program
- Red Cross hurricane relief efforts
- UMT snowshoe hare Ph.D. research project
- USFWS wolf capture, Northwest Montana

References

Dr. Courtney Conway, Unit Leader, Idaho Cooperative Fish and Wildlife Research Unit.
Phone: 208-885-6176, email: cconway@uidaho.edu

Dr. Shane Roberts, Research and Data Coordinator Chief, Idaho Department of Fish and Game. Phone: 208-881-2174, email: shane.roberts@idfg.idaho.gov

Dr. Mike Mitchell, Unit Leader (retired), Montana Cooperative Wildlife Research Unit.
Phone: 406-243-4390, email: mike.mitchell@umontana.edu