

## MATHEW W. ALLDREDGE

Colorado Division of Wildlife  
Mammals Research  
317 W. Prospect Rd.  
Fort Collins, CO 80526

### RESEARCH INTERESTS

Population dynamics and sampling of wildlife populations to improve our understanding of ecological processes and their application to ecological theory, conservation and management. Estimation of demographic rates, such as survival, productivity, and dispersal. Specific interests towards large mammals, especially carnivores.

Affiliate Faculty:

Colorado State University 2009-2016  
University of Wisconsin 2010-present

### EDUCATION

- 2004            Ph.D. in Biomathematics and Zoology, minor in Statistics, North Carolina State University, Raleigh, NC.  
(41 semester hours)  
Advisors: Kenneth Pollock (co-chair), Theodore Simons (co-chair), Cavell Brownie, James Gilliam, James Nichols  
Dissertation title: "Avian point count surveys: Estimating components of the detection process."
- 2002            Master of Biomathematics, minor in Statistics, North Carolina State University, Raleigh, NC.  
(36 semester hours)  
Advisors: Kenneth Pollock (Chair), Cavell Brownie, James Gilliam.  
Paper title: "Golden-cheeked warbler *Dendroica chrysoparia* population viability analysis."
- 1999            M.S. in Wildlife Resources, University of Idaho, Moscow, ID.  
(74 semester hours)  
Advisors: James Peek (chair), William Wall, Patricia Heglund, and Christopher Williams.  
Thesis title: "Shrub communities and elk habitat relationships on an industrial forest of northern Idaho"  
University of Idaho, College of Natural Resources outstanding graduate student, 1999.
- 1994-1996      Visiting student. Colorado State University, Fort Collins, CO.  
Graduate and undergraduate curricula in wildlife biology, ecology and statistics. (28 semester hours)

1994 B.S. in Mechanical Engineering, University of Colorado, Boulder, CO.  
(127 semester hours)

**WORK EXPERIENCE:**

May 2006 Carnivore Researcher. Colorado Division of Wildlife.  
Present

Project 1: Cougar-human interactions in urban environments and assessing aversive conditioning methods.  
Project 2: Cougar predator-prey dynamics.  
Project 3: Cougar genetic degradation.  
Project 4: State wide cougar and bear population structure.  
Project 5: Using telomeres to determine age structure of cougars and bears.  
Project 6: Determining diet composition, use of anthropogenic food sources, and prey use of carnivores utilizing stable isotope analysis.  
Project 7: Development of solar ear tag PTT transmitter for studying carnivore dispersal.  
Project 8: Co-development of automatic deer collaring device.  
Project 9: Spatial analysis of cougar habitat use.  
Project 10: Spatial modeling of cougar movement data.  
Project 11: Development of noninvasive techniques to estimate cougar density.  
Project 12: Cougar kill site dynamics: sharing and scavenging.  
Project 13: Mule deer population response to cougar population manipulation.  
Project 14: Black bear response to aversive conditioning: TASER  
Project 15: Elk recruitment in Colorado  
Project 16: Evaluation of Colorado's two-strike policy.  
Duties: I am the principal investigator on all of the projects listed so my duties include the design and development of the studies, data collections (including capture and handling of animals), data analysis, and publication of research results.

Mar 2005 Workshop. Point count surveys for forest songbirds. North Carolina Wildlife Resources Commission.  
I organized and instructed a point count workshop to train personnel to conduct point count surveys of forest songbirds.

Apr 2005 Instructor. National Conservation Training Center, U.S. Fish and Wildlife Service. (West Virginia)  
Course: Mark-recapture techniques for sampling wildlife populations.  
Objectives: I present current methods for estimating abundance, survival and productivity, and demonstrate the use of program MARK.

June 2004 Postdoctorate Research. USGS, Cooperative Fish and Wildlife Research  
May2006 Unit, North Carolina State University.

Project: Evaluation of methods and sources of bias for estimating abundance of forest song birds using point count surveys.  
Duties: I designed experiments, organized personnel, conducted experiments, analyzed data and wrote reports for professional publication.

2004 Instructor. National Conservation Training Center, U.S. Fish and Wildlife Service. (courses in West Virginia (January) and Alaska (March))  
Course: Mark-recapture techniques for sampling wildlife populations.  
Objectives: I present current methods for estimating abundance, survival and productivity, and demonstrate the use of program MARK.

Aug. 2002  
May 2004 Research Assistant. Biomathematics program, North Carolina State University.  
Project: Development and evaluation of abundance estimators of avian populations from point count surveys.  
Duties: I developed statistical estimators of abundance, analyzed data and wrote reports for professional publication.

Jan 2003  
Aug 2003 Consulting. Vail Associates, Vail, CO, and National Wildlife Federation, Boulder Co.  
Project: Analysis of pellet plot data to determine trends in mammal populations following ski area expansion.  
Project: I analyzed harvest and survey data for trends in antelope, deer, elk, and sage grouse populations across Wyoming's Great Divide resource area.

Aug 2001  
Aug 2002 Research Assistant. Biomathematics program, North Carolina State University.  
Project: Development of abundance estimators of dugong populations in Australia from multiple observer aerial transects.  
Duties: I developed population estimators, ran simulations, and analyzed data for double observer dugong surveys.

June 2002  
Aug 2002 Biologist. USGS-Patuxent Wildlife Research Center, Laurel, MD.  
Grade level: GS-11  
Project: Estimating survival, productivity and population growth rates for the Black-capped Vireo.  
Duties: I located existing data, analyzed data to determine survival, productivity and population growth rates, and wrote the final report.

Aug 2000  
Aug 2001 Research Assistant. Biomathematics program, North Carolina State University.  
Project: Development of sampling methodology for monitoring a recovering population of Red-cockaded Woodpeckers.  
Duties: I developed the statistical design, performed data analysis, and wrote the final report.

- June 2001      Biologist. USGS-Patuxent Wildlife Research Center, Laurel, MD.  
 Aug 2001      Project: Population viability analysis of the Golden-cheeked Warbler.  
 Duties: I located existing data, analyzed data to determine survival, productivity and population growth rates, performed a population viability analysis, and wrote the final report.
- Jan 2000      Wildlife Biologist. University of Idaho, Moscow, ID.  
 Aug 2000      Project: Development of a regional elk study to monitor elk habitats and develop an elk habitat model in relation to timber harvest.  
 Duties: I designed an elk habitat survey, hired and coordinated technicians, conducted field work, involved local interest groups, private industry and state agencies with research.
- Jan 2000      Adjunct Professor. Lewis-Clark State College, Lewiston, ID.  
 May 2000      Course: Introduction to Natural Science  
 Objectives: Introduction to the scientific method and interpreting scientific findings (writing intensive course)
- May 1996      Research Assistant. University of Idaho, Moscow, ID.  
 Dec 1999      Project: Examine habitat use and nutritional relationship of elk and examine successional development and productivity of understory vegetation on private timber lands in Northern Idaho.  
 Duties: I designed experiments, collected and analyzed data and wrote manuscripts for professional publication. I also worked with local interest groups concerned with declining elk populations.
- 1996-2000      Teaching Assistant/Instructor. University of Idaho, Moscow, ID.  
 Courses: Principles of Wildlife Management (3 semesters), Population Ecology (3 semesters), Population Dynamics (1 semester)
- May 1995      Biologist. Wyoming Game and Fish Department, Lander, WY.  
 Nov 1995      Projects: Grizzly bear cattle depredation study and grizzly bear, black bear interaction project.  
 Duties: Trapping, handling, and radio-telemetry of bears. Perform necropsies. I also worked with local interests groups (ranchers) concerned about conflicts between land use and recovering grizzly populations.

## PUBLICATIONS

Allredge M.W., T. Eyk, and J. Lewis. (in review). Non-invasive sampling of felids. *Wildlife Society Bulletin*

Allredge, M.W., F. Buderman, and K. Blecha. (in prep). Nuisance behavior of mountain lions in Colorado's urban Front-range.

Allredge, M.W., and J. Halseth. (in prep) Cougar kill site dynamics and sharing.

Allredge, M.W. (in prep) Cougar dispersal patterns in Colorado's Front-range.

Lewis and Allredge (in review). Evaluation of Colorado's two-strike policy for black bears. *Wildlife Society Bulletin*.

Buderman, F.E., M.B. Hooten, M. Allredge, E.M. Hanks, J.S. Ivan. In Revision. Predatory behavior is primary predictor of movement of wildland-urban cougars. *Movement Ecology*, bioRxiv 10.1101/257295.

Moss, W.E., M.W. Allredge, and J.N. Pauli. 2016. Quantifying risk and resource use for a large carnivore in an expanding urban-wildland interface. *Journal of Applied Ecology* 53:371-378.

Moss, W.E., M.W. Allredge, K.A. Logan, and J.N. Pauli. 2016. Human expansion precipitates niche expansion for an opportunistic apex predator (*Puma concolor*). *Scientific Reports* 6:39639.

R. Kirby, H. Johnson, M. Allredge, J. Pauli. 2019. The cascading effects of human food on hibernation and cellular aging in free-ranging black bears. *Scientific Reports*

R. Kirby, M.W. Allredge, and J.N. Pauli. 2017. Environmental, not individual, factors drive markers of biological aging in black bears. *Evolutionary Ecology*.

R. Kirby, M.W. Allredge, and J.N. Pauli. 2016. The diet of black bears tracks the human footprint across a heterogeneous landscape. *Biological Conservation* 200:51-59.

Blecha, K.A. and M.W. Allredge. 2015. Improvements on GPS location cluster analysis for the prediction of large carnivore feeding activities: ground-truth detection probability and inclusion of activity sensor measures. *PLoS ONE* 10(9):e0138915. doi:10.1371/journal.pone.0138915.

Blecha, K.A., R.B. Boone, and M.W. Allredge. (2018). Hunger mediates apex predator's risk avoidance response in wildland-urban interface. *Journal of Animal Ecology*.

Hanks, E.M., M.B. Hooten, and M.W. Alldredge. (2015) Continuous-time discrete-space models for animal movement. *Annals of Applied Statistics* 9:145-165

Lewis, J.S., K.A. Logan, M.W. Alldredge, D.M. Theobald, S. VandeWoude, and K.R. Crooks. 2017. Contact networks reveal interspecific interactions of sympatric wild felids driven by space use. *Ecosphere* 8: e01707.10.1002/ecs2.1707.

Lewis, J.S., Logan, K.A., Alldredge, M.A., Bailey, L.L., VandeWoude, S. and Crooks, K.R. 2015. The effects of urbanization on population density, occupancy, and detection probability of wild felids. *Ecological Applications* 25:1880-1895.

Yeager, K.L., M.W. Alldredge, and W.L. Kendall. (in review) Development of a noninvasive method to sample cougars (*puma concolor*). *Wildlife Society Bulletin*.

Alldredge, M.W., D.P. Walsh, L.L. Sweanor, R.B. Davies, and A. Trujillo. 2015. Evaluation of translocation of black bears involved in human-bear conflicts in south-central Colorado. *Wildlife Society Bulletin*.

Hanks, E.M., M.B. Hooten, and M.W. Alldredge. 2012. Continuous-Time Discrete-Space Models for animal movement data. *Journal of Agricultural, Biological, and Environmental Statistics*. In Review.

Hooten, M.B., E.M. Hanks, D.S. Johnson, and M.W. Alldredge. (2013). Temporal variation and scale in movement-based resource selection functions. *Statistical Methodology*, In Press.

Hooten, M.B., E.M. Hanks, D.S. Johnson, and M.W. Alldredge. (2013). Reconciling resource utilization and resource selection functions. *Journal of Animal Ecology*, DOI: 10.1111/1365-2656.12080.

Bevins, S.N., S. Carver, E.E. Boydston, L.M., M.W. Alldredge, K.A. Logan, S.P.D. Riley, R.N. Fisher, T. W. Vickers, W. Boyce, M. Salman, M.R. Lappin, K.R. Crooks, and S. Vandewoude. 2012. Three pathogens in sympatric populations of pumas, bobcats, and domestic cats: implications for infectious disease transmission. *PLoS ONE* 7(2):e31403.Doi:10.1371/journal.pone.0031403.

Horne, J.S., K.M. Strickler, and M.W. Alldredge. 2011. Quantifying the importance of patch-specific changes in habitat to metapopulation viability of an endangered songbird. *Ecological Applications*. 21:2478-2486.

Alldredge, M.W., 2011. Cougars on the Edge. *The Wildlife Professional*. 5:72-77.

Bevins, S.N., J.A. Tracey, S. P. Franklin, V. L. Schmit, M. L. MacMillan, K. A. Logan, L. L. Sweanor, M.W. Alldredge, W. M. Boyce, W. Vickers, S. P. D. Riley, L. M. Lyren, E. E. Boydston, C. Krumm, M. Salman, M. E. Roelke, K. L. Gage, M. E. Schrieffer, K.

R. Crooks, and S. VandeWoude. 2009. Plague and wild felids: zoonotic disease in the western US. *Emerging Infectious Diseases* 15: 2021-2024.

Simons, T.R., K.H. Pollock, J.M. Wettroth, M.W. Alldredge, K. Pacifici, and J. Brewster. 2009. Sources of measurement error, misclassification error, and bias in auditory avian point count data. Pp. 237-254 in D.L. Thompson et al. (eds.), *Modeling Demographic Processes in Marked Populations*, Environmental and Ecological Statistics 3, Springer Science and Business Media.

Alldredge, M.W., K. Pacifici, T.R. Simons, and K.H. Pollock. 2008. A field evaluation of the effectiveness of distance sampling and double independent observers to estimate detection probability in aural avian point counts. *Journal of Applied Ecology* 45:1349-1356.

Alldredge, M.W., T.R. Simons, K.H. Pollock, and K. Pacifici. 2007. A field evaluation of the time-of-detection method to estimate population size for aural avian point counts. *Avian Ecology and Conservation* 2(2): 13.

Simons, T.R., M.W. Alldredge, and K.H. Pollock. 2007. Experimental analysis of the auditory detection process on avian point counts. *The Auk* 124:986-999.

Alldredge, M.W., T.R. Simons, and K.H. Pollock. 2007. An experimental evaluation of distance measurement error in avian point count surveys. *Journal of Wildlife Management*. 71:2759-2766.

Alldredge, M.W., K.H. Pollock, and T.R. Simons. 2007. Multiple species analysis of point count data: A more parsimonious modeling framework. *Journal of Applied Ecology* 44:281-290.

Alldredge, M.W., T.R. Simons, and K.H. Pollock. 2007. Factors affecting aural detections of songbirds. *Ecological Applications* 17:948-955.

Alldredge, M.W., K.H. Pollock, T.R. Simons, and J. Collazo. 2007. Time of detection method for estimating abundance from point count surveys. *Auk* 124:653-664.

Rice, S.M., J.A. Collazo, M.W. Alldredge, B.A. Harrington and A.R. Lewis. 2007. Local annual survival and seasonal residency rates of Semipalmated and Western Sandpipers in Puerto Rico. *Auk* 124:1397-1406.

Alldredge, M.W., K.H. Pollock, and T.R. Simons. 2006. Estimating detection probabilities from multiple observer point counts. *Auk* 123:1172-1182.

Pollock, K.H., H.D. Marsh, I.R. Lawler, and M.W. Alldredge. 2006. Estimating animal abundance in heterogeneous environments: An application to aerial surveys for dugongs. *Journal of Wildlife Management* 70:255-262.

Marsh, H., I. Lawler, D. Kwan, S. Delean, K. Pollock, and M. Alldredge. 2004. Aerial surveys and the potential biological removal technique indicate that the dugong fishery in Torres Strait is unsustainable. *Animal Conservation* 7: 435-443.

Pollock, K.H., H.D. Marsh, L.L. Bailey, G.L. Farnsworth, T.R. Simons, and M.W. Alldredge. 2004. Methodology for separating components of detection probability in population abundance estimation, in *Sampling Rare or Elusive Species* (W.L. Thompson ed.).

Alldredge, M. W., J. S. Hatfield, D. D. Diamond, and C. D. True. 2004. Golden-cheeked warbler *Dendroica chrysoparia* in Central Texas. Chapter 33 in H.R. Akçakaya, M. Burgman, O. Kindvall, C. Wood, P. Sjögren-Gulve, J.S. Hatfield, and M.A. McCarthy (editors), *Species Conservation and Management: Case Studies*. Oxford University Press. 21 pp.

Alldredge, M.W., J.M. Peek, and W.A. Wall. 2002. Nutritional quality of forages used by elk in Northern Idaho. *Journal of Range Management* 55:253-259.

Alldredge, M.W., J.M. Peek, and W.A. Wall. 2001. Shrub community development and annual productivity trends over a 100-year period on an industrial forest of Northern Idaho. *Forest Ecology and Management* 152:259-273.

Alldredge, M.W., J.M. Peek, and W.A. Wall. 2001. Alterations of shrub communities in relation to herbivory in Northern Idaho. *Northwest Science*. 75:137-144.

## **Final Reports**

Pollock, K.H., H.D. Marsh, I.R. Lawler, and **M.W. Alldredge**. 2004. Improving the accuracy of aerial surveys for dugongs. Australian Fisheries Management Authority, final research report, R 99/0497.

Marsh, H., I. Lawler, D. Kwan, S. Delean, K. Pollock, and **M. Alldredge**. 2004. Dugong distribution and abundance in Torres Strait. Australian Fisheries Management Authority, final research report, R 01/0895.

**Alldredge, M.W.**, C.C. Farquhar, D. Cimprich, and J.S. Hatfield. 2003. Survival, productivity and population growth of the Black-capped Vireo. Final Report, U.S. Fish and Wildlife Service, Austin, Texas. 27 pp.

Alldredge, A.W., and **M.W. Alldredge**. 2003. Pete's bowl wildlife plots: A 12-year summary 1992-2002. Vail, CO

Alldredge, A.W. and **M.W. Alldredge**. 2003. Great divide resource area wildlife analysis. National Wildlife Federation, Boulder, CO.



**Aldredge, M.W.**, J. S. Hatfield, D. D. Diamond, and C. D. True. 2002. Population viability analysis of the Golden-cheeked Warbler. Final Report, U.S. Fish and Wildlife Service, Austin, Texas. 38 pp.

Pollock, K.H., **M.W. Aldredge**, J.R. Walters, and J. Britcher. 2001. A conceptual sampling model and its application to the estimation of population demographics for Red-cockaded Woodpeckers on Fort Bragg. Final Report, U.S. Army, Fort Bragg, NC.

### **Professional Presentations**

**M.W. Aldredge** 2018. Evaluation of Colorado's two-strike policy for black bears. Western black bear workshop.

**M.W. Aldredge**. 2018. Invited presentation. Mountain lions on the Front-range of Colorado. University of Colorado, Boulder.

**M.W. Aldredge**. 2018. Invited presentation. Mountain lions on the Front-range of Colorado. Boulder County Open Space.

**M.W. Aldredge**. 2018. Invited presentation. Mountain lion biology. Estes Valley Land Trust.

Buderman, F.E., M.B. Hooten, J.S. Ivan, **M.W. Aldredge**. 2018 (fall). Using basis functions for continuous-time inference on animal movement. The Wildlife Society 25th Annual Conference, Cleveland, OH. Buderman, F.E., 2018. Mod

**M.W. Aldredge**. 2017. Screaming in the woods: noninvasive population estimation for cougars. Mountain Lion Workshop, Estes Park, Colorado.

K. Blecha and **M.W. Aldredge**. 2017. Cougar foraging in the urban-wildland interface. 12<sup>th</sup> Mountain Lion Workshop, Estes Park, Colorado.

Buderman, F. E., M.B. Hooten, **M.W. Aldredge**. 2017. Timing of predation and carnivore movement in an urban-wildland interface. The Wildlife Society 24th Annual Conference, Albuquerque, NM.

Buderman, F. E., M.B. Hooten, **M.W. Aldredge**. 2016. Mountain lion movement dynamics in the wildland-urban interface. The Wildlife Society 23rd Annual Conference, Raleigh, NC.

Buderman, F. E., M.B. Hooten, **M.W. Aldredge**. 2016. Drivers of mountain lion movement in the Colorado Front Range. Central Mountains and Plains Section of The Wildlife Society Annual Meeting, Steamboat Springs, CO.

**M.W. Alldredge**, K.H. Pollock, and T.R. Simons. 2005. Factors affecting the detection process for aural detections of songbirds. American Ornithologists' Union. Santa Barbara, California.

**M.W. Alldredge**, K.H. Pollock, and T.R. Simons. 2005. Estimating distance to birds heard but not seen. American Ornithologists' Union. Santa Barbara, California.

**M.W. Alldredge**, K.H. Pollock, T.R. Simons, and J.A. Collazo. 2004. Multiple-observer and time of detection methods for estimating abundance of birds from point count surveys. American Ornithologists' Union in conjunction with the Society of Canadian Ornithologists. Quebec, Canada.

**M.W. Alldredge**, K.H. Pollock, and T.R. Simons. 2004. Multiple species modeling of point count surveys. American Ornithologists' Union in conjunction with the Society of Canadian Ornithologists. Quebec, Canada.

T.R. Simon, K.H. Pollock, and **M.W. Alldredge**. 2004. Experimental analysis of detection probabilities on avian point count censuses. Ecological Society of America Annual Meeting, Portland, Oregon.

K.H. Pollock, **M.W. Alldredge**, T.R. Simons. 2004. Application of capture-recapture type models in point count surveys. The Statistical Society of Canada, Montreal, Canada.

**M.W. Alldredge**, and J.M. Peek. 2000. Nutritional relationships to elk habitat use in Northern Idaho. Pacific Northwest Regional Wildlife Society meeting, Spokane, Washington.

**M.W. Alldredge**, and J.M. Peek. 1999. Elk habitat use on industrial forest lands. Idaho Wildlife Society meeting, Moscow, Idaho.

**Journal Reviews:**

Journal of Wildlife Management

Wildlife Society Bulletin

Journal of Mammalogy

Auk

Condor

PLoSOne

Ecological Applications

Ecology

Journal of Applied Ecology

Ecology and Evolution

**Mark E. P. Vieira**

Colorado Parks and Wildlife

Carnivore and Furbearer Programs Manager, Terrestrial Section

317 W. Prospect, Fort Collins, CO 80526

---

**EDUCATION**

Saint Mary's College of Maryland, St. Mary's City, Maryland  
Bachelor of Arts in Biology, Spring 1996

Colorado State University, Fort Collins, Colorado  
Master of Science in Wildlife Biology, Fall 2000

Thesis Title: Effects of early-season hunter density and human disturbance on elk movement in the White River Area, Colorado.

**PROFESSIONAL EXPERIENCE**

June 2017- present: **Carnivore and Furbearer Program Manager**

Colorado Parks and Wildlife, 317 W. Prospect, Fort Collins, CO 80526

Supervisor- Matt Eckert

Serve as CPW's senior authority regarding statewide activities on all carnivore and furbearer game species. Formulate and develop strategic carnivore and furbearer program goals and objectives for consideration by the CPW leadership, and advise CPW's Commission, Director, Leadership Team, Section Manager, and Terrestrial Programs Supervisor on policy issues related to carnivore and predator management activities. Influence policy, conservation, planning, management, and funding decisions of other state agencies, federal agencies, and private organizations on carnivore and furbearer issues.

Inform the drafting of CPW administrative directives and Commission policies relative to carnivore, predator, and furbearer management and coordinate all aspects of carnivore management activities in the State; including inventory, monitoring, data collection and analysis, conflict mitigation, and strategic planning to ensure sustainable management and implementation of hunting/trapping recreation programs for carnivores and furbearers. Develop, recommend, communicate, and justify regulations with all levels of agency staff and the Commission and represent the State as an expert in carnivore management in various forums, including the Parks and Wildlife Commission, State legislature, other State and Federal Agencies, international wildlife agencies, the media and general public.

July 2001 – May 2017: **Terrestrial Wildlife Biologist**

Colorado Parks and Wildlife, 317 W. Prospect, Fort Collins, CO 80526

Supervisor- Janet George

Provide terrestrial biological liaison and technical support for Larimer and Weld counties, Colorado. Formulate recommendations necessary to manage terrestrial wildlife species, build computer population models used to set limited hunting license numbers for big game. Conduct wildlife inventories and studies using technical equipment. Analyze scientific field data and prepare management plans, findings, and recommendations. Develop proposals and techniques for population and density estimation, occupancy, and herd composition. Conduct public meetings to obtain and/or provide information and data. Assist individual hunters, stakeholders, and the public by providing a wide variety of information and advice concerning terrestrial wildlife species, hunting opportunities, etc. Assist wildlife researchers and collaborating agencies/institutions in conducting research projects. Give presentations at university seminars, state and national conferences. Publish articles in peer-reviewed journals and mainstream formats. Serve on CPW Animal Care and Use committee. Trained and supervised over 20 temporary employees and interns.

***-SPECIAL ASSIGNMENTS***

April 2013 to March 2014: **Acting Colorado Dept Natural Resources Natural Resource Damage Trustee Representative**

Colorado Division of Wildlife (Colorado Parks and Wildlife), 317 W. Prospect, Fort Collins, CO 80526

Supervisor- Chad Bishop/Alex Davis

Acted as State project contracting manager for \$10 million worth of ecological restoration projects associated with the Natural Resource Damage settlements from the Lowry landfill and Rocky Mountain Arsenal CERCLA cases.

Acted as representative for DNR executive director/assistant director in workgroup meetings. Provided recommendations and briefing to executive staff at Colorado DNR, Dept of Public Health and Environment and Attorney General's office.

Oct. 2010 to March 2011: **Acting Northeast Region Senior Terrestrial Biologist**

Colorado Division of Wildlife (Colorado Parks and Wildlife), 317 W. Prospect, Fort Collins, CO 80526

Supervisor- Janet George

Served in acting position as Northeast Region Senior Terrestrial Biologist. Supervised a staff of six biologists and one fixed-wing pilot. Provided long-range planning, including cost center budgeting, employee work planning, decision making and helicopter inventory contract.

**-GRANTS**

Secured and managed \$160,000 of Colorado auction/raffle funding for a bighorn sheep project (2005-2009).

Secured and managed \$240,000 of Colorado Wetland grant funding for wetland projects in Larimer county (2014-2017).

Jan. 2001- June 2001: **Wildlife Research Technician**

USGS- BRD Northern Prairie Wildlife Research Center, 8711 37<sup>th</sup> St. SE, Jamestown, ND 58401

Supervisor- Dr. Glen Sargeant

Conducted field research on elk project in Theodore Roosevelt National Park. Collected data to parameterize a dual-observer elk sightability model from fixed-wing aircraft and compare benefits of this model over traditional mark-resight radiotelemetry efforts. Conducted fixed-wing transect surveys, radiotelemetry flights and ground-based telemetry. Supervised and trained field assistant. Interacted with local stakeholder groups working on elk management issues. Co-authored a draft National Park Service inventory and monitoring protocol for 13 park network.

Aug. 1998- Dec. 2000: **Graduate Researcher**

Colorado Division of Wildlife/ Colorado State University, Wagar Building, CSU, Fort Collins, CO 80524

Supervisor- Dr. Gary White

Conducted study on elk movement in response to early-season hunter density. Completed 2-year study manipulating early-season hunter numbers to test impacts on elk movement to private land in northwestern Colorado. Developed and analyzed statistical models to answer questions about effectiveness of treatment. Designed, implemented and analyzed study on elk movement in response to pedestrian and ATV disturbance. Trained and supervised field assistant. Summarized studies in thesis and published, peer-reviewed paper. Presented research results at national and regional conferences. Coordinated and interacted with CDOW (CPW) staff, USFS staff and private landowners.

## PUBLICATIONS

Vieira, M. E. P. Effects of early-season hunter density and human disturbance on elk movement in the White River Area, Colorado. 2000. M.S. Thesis, Colorado State University. 152 pages.

Vieira, M. E. P., M. M. Conner, G. C. White, and D. J. Freddy. 2003. Effects of archery hunter numbers and opening dates on elk movement. *Journal of Wildlife Management*. 67:717-728.

Lopez, R. R., M. E. P. Vieira, N. J. Silvy, P. A. Frank, S. W. Whisenant and D. A. Jones. 2003. Survival, mortality, and life expectancy of Florida key deer. *Journal of Wildlife Management*. 67:34-45.

Walsh, D. P., L. L. Wolfe, M. E. P. Vieira and M. W. Miller. 2012. Detection probability and *Pasteurellaceae* surveillance in bighorn sheep. *Journal of Wildlife Diseases*. 48:593-602.

Roug, A., A. Cook, M. Vieira, T. Davis and J. Robinson. Midazolam for tranquilization of chukar partridges. *Submitted to Journal of Zoo and Wildlife Medicine*.

Apker, J.A., J. Runge, H. Johnson, J. Mao, A. Vitt, M. Vieira, J. Yost and K. Oldham. 2016. Non-invasive genetic-based black bear investigations in Colorado, 2009-2015. Internal CPW document.

McLaughlin, C. R. and M. Vieira, editors. 2017. Proceedings of the 12<sup>th</sup> Mountain Lion Workshop, May 15-18, 2017. Estes Park, Colorado, USA.

Vieira, M and A. Austermann. 2019. Proceedings of the 13<sup>th</sup> Western Black Bear Workshop, May 21-24, 2018. Grand Junction, Colorado, USA. *In review*.

Numerous Colorado Parks and Wildlife Herd Management Plans, Federal Aid and agency reports and project updates.

## Curriculum Vitae

**Charles R. Anderson, Jr.**  
Mammals Research Leader  
Colorado Parks and Wildlife  
317 W. Prospect Road  
Fort Collins, CO 80526, USA

---

### EDUCATION

- Ph.D., Zoology and Physiology, August 2003. University of Wyoming, Laramie (4.0 GPA).  
Dissertation Title: Cougar ecology, management, and population genetics in Wyoming  
(Advisor: Dr. Fred Lindzey).
- M.S., Zoology and Physiology, May 1994. University of Wyoming, Laramie (3.8 GPA).  
Thesis title: A sightability model for moose developed from helicopter surveys in western  
Wyoming (Advisor: Dr. Fred Lindzey).
- B.S., Wildlife Biology, December 1990. Colorado State University, Ft. Collins (3.5 GPA).  
Graduated Outstanding Senior in Wildlife Biology. Senior study title: The effects of  
plant water on voluntary intake in bighorn sheep (Advisor: Dr. Bill Alldredge).

### PROFESSIONAL EXPERIENCE

- Apr. 2013-present                   **Mammals Research Leader, Colorado Parks and Wildlife.**  
Supervise the Mammals Research Section for CPW including 5 researchers, 1 Research  
Librarian, and 1 Office Manager. Cost Center supervisor managing \$2.2M annual  
budget. Coordinate with statewide Wildlife Biologists and District Wildlife Managers to  
address research questions of primary management concern. Continue to direct Piceance  
Basin mule deer research project described below. Supervisor: Jeff VerSteeg, Assistant  
Director of Research, Policy and Planning Branch. 40 hours/week.
- Dec., 2006-Mar 2013               **Mammals Researcher, Colorado Parks and Wildlife.** Directing  
research and coordinating project activities to address mule deer/energy development  
interactions and mitigation approaches in northwest Colorado. Managing \$600,000  
annual budget. Supervising 3 - 10 field technicians annually. Coordinating project  
activities with BLM, Energy Development Companies, Regional Parks and Wildlife  
personnel, private land owners, contractors and NGOs. Serving as affiliate faculty with  
Idaho State University and Colorado State University to mentor graduate students in  
addressing various research components. Supervisor: Chad Bishop, former Mammals  
Research Leader, Colorado Parks and Wildlife, 317 W. Prospect, Ft. Collins, CO, 80526.  
40 hours/week.
- Aug., 2004-Nov., 2006           **Large Carnivore Biologist, Wyoming Game & Fish  
Department.** Conducted research to assess endangered species recovery objectives and  
ecological parameters of grizzly bears in the Greater Yellowstone Ecosystem.  
Collaborated with university and agency biologists to develop research projects beneficial  
to the management and conservation of large carnivores. Compiled and analyzed harvest

data to evaluate harvest objectives for cougar and black bear management in Wyoming. Conducted public meetings for information and education purposes. Developed cougar resource selection functions and applied results, in conjunction with previous research efforts (dissertation), in developing the state cougar management plan. Supervised 2 seasonal employees for annual data collection. Served as Adjunct Assistant Professor with the University of Wyoming to serve on graduate committees and advise graduate students on applied research to benefit wildlife management. Served on the Interagency Grizzly Bear Study Team representing Wyoming Game and Fish Department. Supervisor: Dave Moody, Wyoming Game & Fish Dept., 260 Buena Vista, Lander, WY 82520; (307) 332-7723, ext. 240. 40-60 hours/week.

Oct., 2003-April, 2004                    **Research Wildlife Biologist, Arizona Game and Fish Department.** Directed research addressing detailed movement patterns of pronghorn and desert bighorn sheep populations. Applied GPS collars to assess migratory patterns and fawning sites for pronghorn, and to evaluate detailed habitat use patterns of desert bighorn sheep in relation to energy development. Evaluated implications of a disease outbreak in an isolated bighorn sheep population and the effectiveness of treating the disease in infected, free ranging animals. Conducted cougar surveys along the urban interface near Tucson, Arizona to address concerns over increasing cougar/human interactions. Supervisor: Richard Ockenfels, Arizona Game and Fish Dept., 2221 W. Greenway Rd., Phoenix, AZ 85023; (602) 789-3379. 40 hours/week.

Sept.-Oct., 2003/May-July 2004       **Crew Leader, Western EcoSystems Technology, Inc.** Directed golden eagle surveys from fixed-wing aircraft to estimate eagle populations throughout the western United States. Coordinated surveys with US Fish and Wildlife Service, aircraft companies, and observers. Conducted aerial eagle surveys, recorded eagle observations, managed the database. Conducted ground and aerial surveys for raptors, sage grouse, mountain plovers, and passerines to assess potential impacts from proposed coal-bed methane development; prepared and presented final report to the BLM. Supervised 1-2 seasonal technicians. Supervisor: Rhett Good, WEST, Inc., 2003 Central Ave., Cheyenne, WY 82001; (307) 742-9151. 40-60 hour/week.

Nov. 1997-Aug. 2003 **Ph.D. Candidate, University of Wyoming.** Developed and tested hypotheses to enhance cougar management and conservation programs. Developed improved population monitoring methods (sex/age composition of harvests, probability sampling snow tracks from helicopters) to enhance management of cougar populations. Investigated genetic structure of cougar populations throughout Wyoming, South Dakota, and Colorado, and explored genetic and social relationships at varying levels of exploitation. Evaluated cougar predation rates and prey selection patterns from GPS data records. Supervised 1 permanent, 1 seasonal, and several volunteer employees. Advisor: Dr. Fred Lindzey, Wyoming Cooperative Fish and Wildlife Research Unit, Box 3166, University Station, Laramie, WY 82071; (307) 745-6010. 40+ hours/week.

May 1994-Oct. 1997 **Large Carnivore Biologist, Wyoming Game and Fish Department.** Directed research addressing grizzly bear/cattle interactions in northwest Wyoming. Directed research evaluating DNA-based mark-recapture methods using black and grizzly bear hair samples. Developed state management plans for mountain lion populations and wolf recovery. Compiled and summarized annual harvest data and proposed annual

harvest recommendations for mountain lion and black bear management. Conducted human/bear conflict resolution. Addressed public meetings regarding large carnivore management and coexistence. Served on the Interagency Grizzly Bear Study Team representing Wyoming Game and Fish Department. Supervised 2 permanent and 2 seasonal employees. Supervisor: Dave Moody, Wyoming Game & Fish Dept., 260 Buena Vista, Lander, WY 82520; (307) 332-7723, ext. 240. 40-60 hours/week

Aug.-Sept, 1992-1995      **Seasonal Research Associate, Wyoming Coop. Fish & Wildlife Research Unit.** Directed research developing and validating a sightability model to estimate elk population size and composition from summer helicopter surveys. Duties included study design, organizing and conducting elk drive counts and helicopter surveys, data analyses, and manuscript preparation. Supervisor: Dr. Fred Lindzey, Wyoming Cooperative Fish and Wildlife Research Unit, Box 3166, University Station, Laramie, WY 82071; (307) 745-6010. 40 hours/week.

Sept. 1991-May 1994 **Graduate Research Assistant, University of Wyoming.** Developed a sightability model to estimate moose population parameters from winter helicopter surveys in 3 regions of western Wyoming. Duties included study design, supervising 1 technician, immobilizing and radiocollaring moose, organizing and conducting moose surveys from fixed-wing aircraft and helicopter, data analyses, and manuscript preparation. Advisor: Dr. Fred Lindzey, Wyoming Cooperative Fish and Wildlife Research Unit, Box 3166, University Station, Laramie, WY 82071; (307) 745-6010. 40 hours/week.

Sept. 1990-Aug. 1991 **Wildlife Technician, Colorado Division of Wildlife.** Collected and analyzed vegetation samples for evaluation of elk/cattle competition. Directed data collection and synthesis investigating presence of lynx and prey abundance near Vail, Colorado. Directed data collection of seasonal migration and lamb survival for 4 radiocollared bighorn sheep populations in western Colorado. Supervised 1 seasonal technician. Supervisors: Dr. Dan Baker, Dr. Mike Miller, and Gene Byrne, Colorado Division of Wildlife, 317 W. Prospect, Ft. Collins, CO 80526 (970) 472-4300. 40 hours/week.

Sept. 1988-Aug. 1990      **Fishery and Wildlife Technician, Colorado Cooperative Fish & Wildlife Research Unit.** Assisted graduate students with various field research projects including: sampling remote salmonid populations, sampling warm water and cold water fish populations in lentic environments, and sampling vegetation biomass on elk winter range. Constructed and maintained field research equipment. Supervisors: Eric Bergersen and Dave Anderson, Colorado Coop Fish and Wildlife Research Unit, 401 Wagar, Colorado State University, Ft. Collins, CO 80526 (970) 491-5396. 20 hours/week.

June-Aug., 1987-1988      **Seasonal Fish Culture Technician, Colorado Division of Wildlife.** Conducted duties necessary for rearing various warm water fish species at the Wray Warm Water Fish Rearing Unit. Supervisor: Dave Schnoor, Wray Warm Water Fish Rearing Unit, Wray, Colorado. 40 hours/week.



## PROFESSIONAL PUBLICATIONS

### Scientific Publications

- Peterson, M. E., C. R. Anderson Jr., M. W. Alldredge, and P. F. Doherty Jr. 2018. Using maternal mule deer movements to estimate timing of parturition and assist fawn captures. *Wildlife Society Bulletin* 42:616-621; doi.org/10.1002/wsb.935
- Peterson, M. E., C. R. Anderson Jr., J. M. Northrup, and P. F. Doherty Jr. 2018. Mortality of mule deer fawns in a natural gas development area. *Journal of Wildlife Management* 82:1135-1148, DOI: 10.1002/jwmg.21476
- Bergman, E. J., C. R. Anderson Jr., C. J. Bishop, A. A. Holland, and J. M. Northrup. 2018. Variation in ungulate body fat: individual versus temporal effects. *Journal of Wildlife Management* 82:130-137, DOI: 10:1002/jwmg.21334
- Lendrum, P. E., J. M. Northrup, C. R. Anderson, G. E. Liston, C. L. Aldridge, K. R. Crooks, and G. Wittemyer. 2017. Predation risk across a dynamic landscape: effects of anthropogenic land use, natural landscape features, and prey distribution. *Landscape Ecology*, DOI 10.1007/s10980-017-0590-z
- Peterson, M. E., C. R. Anderson Jr., J. M. Northrup, and P. F. Doherty Jr. 2017. Reproductive success of mule deer in a natural gas development area. *Wildlife Biology* doi: 10.1111/wlb.00341
- Stonehouse, K. F., C. R. Anderson, Jr., M. E. Peterson, and D. R. Collins. 2016. Approaches to field investigations of cause-specific mortality in mule deer. Technical Publication No. 48, Colorado Parks and Wildlife, Ft. Collins, USA.
- Northrup, J. M., C. R. Anderson, Jr., M.B. Hooten and G. Wittemyer. 2016. Movement reveals scale dependence in habitat selection of a large ungulate. *Ecological Applications* 26:2746-2757; DOI: 10.1002/eap.1403.
- Northrup, J. M., C. R. Anderson, Jr., and G. Wittemyer. 2016. Environmental dynamics and anthropogenic development alter philopatry and space-use in a North American cervid. *Diversity and Distributions* 22:547-557.
- Northrup, J. M., C. R. Anderson, Jr., and G. Wittemyer. 2015. Quantifying spatial habitat loss from hydrocarbon development through assessing habitat selection patterns of mule deer. *Global Change Biology*, doi: 10.1111/gcb.13037
- Searle, K. R., M. B. Rice, C. R. Anderson, C. Bishop and N. T. Hobbs. 2015. Asynchronous vegetation phenology enhances winter body condition of a large mobile herbivore. *Oecologia* 179:377-391; DOI 10.1007/s00442-015-3348-9
- Anderson, C. R., Jr., and C. J. Bishop. 2014. Migration patterns of adult female mule deer in response to energy development. Pages 47-50 *in* Transactions of the 79<sup>th</sup> North American Wildlife & Natural Resources Conference (R. A. Coon & M. C. Dunfee, eds.). Wildlife Management Institute, Gardners, PA, USA. ISSN 0078-1355.

- Lendrum, P. E., C. R. Anderson Jr., K. L. Monteith, J. A. Jenks, and R. T. Bowyer. 2014. Relating the movement of a rapidly migrating ungulate to spatiotemporal patterns of forage quality. *Mammalian Biology* 79:369-375; <http://dx.doi.org/10.1016/j.mambio.2014.05.005>
- Lynch, E., J. M. Northrup, M. F. McKenna, C. R. Anderson, Jr., L. Angeloni, and G. Wittemyer. 2014. Landscape and anthropogenic features influencing the use of auditory vigilance by mule deer. *Behavioral Ecology*; doi:10.1093/beheco/aru158.
- Northrup, J. M., A. B. A. Shafer, C. R. Anderson, Jr., D. W. Coltman, and G. Wittemyer. 2014. Fine-scaled genetic correlates to condition and migration in a wild cervid. *Evolutionary Applications* ISSN 1752-4571; doi:10.1111/eva.12189.
- Freeman, E. D., R. T. Larsen, M. E. Peterson, C. R. Anderson, Jr., K. R. Hersey, B. R. McMillan. 2014. Effects of male-biased harvest on mule deer: implications for rates of pregnancy, synchrony, and timing of parturition. *Wildlife Society Bulletin*; DOI: 10.1002/wsb.450.
- Northrup, J. M., C. R. Anderson, Jr., and G. Wittemyer. 2014. Effects of helicopter capture and handling on movement behavior of mule deer. *Journal of Wildlife Management* 78(4):731-738; DOI: 10.1002/jwmg.705.
- Northrup, J. M., M. B. Hooten, C. R. Anderson, Jr., and G. Wittemyer. 2013. Practical guidance on characterizing availability in resource selection functions under a use-availability design. *Ecology* 94:1456-1463. <http://dx.doi.org/10.1890/12-1688.1>
- Lendrum, P. E., C. R. Anderson, Jr., K. L. Monteith, J. A. Jenks, and R. T. Bowyer. 2013. Migrating mule deer: effects of anthropogenically altered landscapes. *PLoS ONE* 8(5): e64548. doi:10.1371/journal.pone.0064548.
- Lendrum, P. E., C. R. Anderson, Jr., R. A. Long, J. G. Kie, and R. T. Bowyer. 2012. Habitat selection by mule deer during migration: effects of landscape structure and natural-gas development. *Ecosphere* 3(9):82. <http://dx.doi.org/10.1890/ES12-00165.1>
- LaRue, M. A., C. K. Nielsen, M. Dowling, K. Miller, B. Wilson, H. Shaw, and C. R. Anderson, Jr. 2012. Cougars are recolonizing the mid-west: analysis of cougar confirmations during 1990-2008. *Journal of Wildlife Management* 76:1364-1369.
- Bishop, C.J, C. R. Anderson, Jr., D. P. Walsh, E.J. Bergman, P. Kuechle, and J. Roth. 2011. Effectiveness of a redesigned vaginal implant transmitter in mule deer. *Journal of Wildlife Management* 75:1797-1806.
- Kurta, A., M. K. Schwartz, and C. R. Anderson, Jr. 2007. Does a population of cougars exist in Michigan? *American Midland Naturalist* 158:467-471.
- Biek, R., T. K. Ruth, K. M. Murphy, C. R. Anderson, Jr., and M. Poss. 2006. Examining effects of persistent retrovirus infection on fitness and pathogen susceptibility in a natural feline host. *Canadian Journal of Zoology* 85:365-373.

- Biek, R., T. K. Ruth, K. M. Murphy, C. R. Anderson, Jr., M. Johnson, R. Simone, R. Gray, M. G. Hornocker, C. M. Gillin, and M. Poss. 2006. Factors associated with pathogen seroprevalence and infection in Rocky Mountain cougars. *Journal of Wildlife Diseases* 42:606-615.
- Anderson, C. R., and F. G. Lindzey. 2005. Experimental evaluation of population trend and harvest composition in a Wyoming cougar population. *Wildlife Society Bulletin* 33:179-188.
- Anderson, C. R., F. G. Lindzey, and D. B. McDonald. 2004. Genetic structure of cougar populations across the Wyoming Basin: metapopulation or megapopulation. *Journal of Mammalogy* 85(6):1207-1214.
- Krausman, P. R., B. D. Jansen, J. R. Heffelfinger, C. R. Anderson, J. C. deVos, and T. H. Noon. 2004. Desert bighorn sheep (*Ovis canadensis mexicana*): disease and urbanization. *Game and Wildlife Science* 21:715-719.
- Anderson, C. R., and F. G. Lindzey. 2003. Estimating cougar predation rates from GPS location clusters. *Journal of Wildlife Management* 67:307-316.
- Biek, R., A. G. Rodrigo, D. Holley, A. Drummond, C. R. Anderson, H. A. Ross, and M. Poss. 2003. Epidemiology, genetic diversity, and evolution of endemic Feline Immunodeficiency Virus in a population of wild cougars. *Journal of Virology* 77:9578-9589.
- Anderson, C. R., M. A. Ternent, and D. S. Moody. 2002. Grizzly bear/cattle interactions on two cattle allotments in northwest Wyoming. *Ursus* 13:247-256.
- Anderson, C. R., D. S. Moody, B. L. Smith, F. G. Lindzey, and R. P. Lanka. 1998. Development and evaluation of sightability models for summer elk surveys. *Journal of Wildlife Management* 62:1055-1066.
- Anderson, C. R. and F. G. Lindzey. 1996. Moose sightability model developed from helicopter surveys. *Wildlife Society Bulletin* 24:247-259.

### **Book/Publication Chapters**

- Lendrum, P. E., C. R. Anderson, Jr., R. A. Long, J. G. Kie, and R. T. Bowyer. 2014. Habitat selection by mule deer during migration: effects of landscape structure and natural-gas development. Pages 233-262 *in* The Effects of Hydraulic Fracturing on the Environment (M. McBroom, Ed.). Apple Academic Press Inc., Waretown, NJ, USA.
- Anderson, C. R., Jr., F. G. Lindzey, K. H. Knopff, M. G. Jalkotzy, and M. S. Boyce. 2010. Cougar management in North America. Pages 41-54 *in* Cougar: Ecology and Conservation (M. Hornocker & S. Negri, Eds.). University of Chicago Press, Chicago, IL, USA.
- Anderson, C., and M. Haroldson. 1997. Effectiveness of attractants to lure grizzly bears into hair collection sites for future DNA fingerprinting—the Blackrock/Spread Creek area study. Pages 39-45 *In* Yellowstone grizzly bear investigations 1996: report of the Interagency

Study Team (R.R. Knight and B.M. Blanchard, Eds.). IGBST, US Dep. Interior, Nat. Biol. Serv., Missoula, MT, USA.

Haroldson, M., and C. Anderson. 1997. Effectiveness of attractants to lure grizzly bears into hair collection sites for future DNA fingerprinting—the North Fork Shoshone and Hayden Valley study areas. Pages 27-38 *in* Yellowstone grizzly bear investigations 1996: report of the Interagency Study Team (R.R. Knight and B.M. Blanchard, Eds.). IGBST, US Dep. Interior, Nat. Biol. Serv., Missoula, MT, USA.

Anderson, C. R., and F. G. Lindzey. 1994. Wyoming moose sightability model. Pages 60-64 *In* Aerial Survey: User's Manual, Second Edition (J. W. Unsworth, F. A. Leban, D. J. Leptich, E. O. Garton, and P. Zager, Eds.). Idaho Dep. of Fish and Game, Boise, USA.

### **Publications in Proceedings**

Lindzey, F., H. Sawyer, C. Anderson, and B. Banulis. 2001. Performance of store-on-board GPS collars on elk, mule deer, and mountain lions in Wyoming, USA. Pages 29-31 *in* A.M. Sibald and I.J. Gordon, editors. Proceedings of the conference on tracking animals with GPS. The Macaulay Institute, Craigiebukler, Aberdeen, Scotland.

Anderson, C. R., and F. G. Lindzey. 2000. Estimating sex reporting bias in mountain lions using DNA analysis. Proceedings of the 6th Mountain Lion Workshop, San Antonio, TX. Page 52 *in* L.A. Harverson, and R.W. Adams, editors. Texas Parks and Wildlife, Austin, TX, USA.

### **Thesis/Dissertation**

Anderson, C. R., Jr. 2003. Cougar ecology, management, and population genetics in Wyoming. Ph.D. Dissertation, University of Wyoming, Laramie, USA.

Anderson, C. R., Jr. 1994. A sightability model for moose developed from helicopter surveys in western Wyoming. M.S. Thesis. University of Wyoming, Laramie, USA.

### **Species Management Plans**

Wyoming Game & Fish Department. 2006. Wyoming Mountain Lion Management Plan. Wyoming Game and Fish Department, Cheyenne, USA. Lead author.

Anderson, C. R., D. S. Moody, M. A. Ternent, J. P. Bohne, J. Emmerich, T. Ryder, W. Gasson, and D. Lockman. 1997. Gray wolf recovery and management plan. Wyoming Game and Fish Department, Cheyenne, USA.

Anderson, C. R., and M. A. Ternent, editors. 1997. Wyoming Game and Fish Department Mountain Lion Management Plan. Wyoming Game and Fish Department, Lander, USA.

### **Agency Technical Reports**

Anderson, C. R., Jr. 2018. Population performance of Piceance Basin mule deer in response to natural gas resource extraction and mitigation efforts to address human activity and habitat degradation. Job Progress Report, Colorado Parks and Wildlife, Fort Collins, USA.

Anderson, C. R., Jr. 2017. Population performance of Piceance Basin mule deer in response to natural gas resource extraction and mitigation efforts to address human activity and habitat degradation. Job Progress Report, Colorado Parks and Wildlife, Fort Collins, USA.

Anderson, C. R., Jr. 2016. Population performance of Piceance Basin mule deer in response to natural gas resource extraction and mitigation efforts to address human activity and habitat degradation. Job Progress Report, Colorado Parks and Wildlife, Fort Collins, USA.

Anderson, C. R., Jr. 2015. Population performance of Piceance Basin mule deer in response to natural gas resource extraction and mitigation efforts to address human activity and habitat degradation. Job Progress Report, Colorado Parks and Wildlife, Fort Collins, USA.

Anderson, C. R., Jr. 2014. Population performance of Piceance Basin mule deer in response to natural gas resource extraction and mitigation efforts to address human activity and habitat degradation. Job Progress Report, Colorado Parks and Wildlife, Fort Collins, USA.

Anderson, C. R., Jr. 2013. Population performance of Piceance Basin mule deer in response to natural gas resource extraction and mitigation efforts to address human activity and habitat degradation. Job Progress Report, Colorado Parks and Wildlife, Fort Collins, USA.

Anderson, C. R., Jr. and C. J. Bishop. 2012. Population performance of Piceance Basin mule deer in response to natural gas resource extraction and mitigation efforts to address human activity and habitat degradation. Job Progress Report, Colorado Parks and Wildlife, Fort Collins, USA.

Anderson, C. R., Jr. and C. J. Bishop. 2011. Population performance of Piceance Basin mule deer in response to natural gas resource extraction and mitigation efforts to address human activity and habitat degradation. Job Progress Report, Colorado Division of Wildlife, Fort Collins, USA.

Anderson, C. R., Jr. and C. J. Bishop. 2010. Population performance of Piceance Basin mule deer in response to natural gas resource extraction and mitigation efforts to address human activity and habitat degradation. Job Progress Report, Colorado Division of Wildlife, Fort Collins, USA.

Anderson, C. R., Jr. 2009. Population performance of Piceance Basin mule deer in response to natural gas resource extraction and mitigation efforts to address human activity and habitat degradation. Job Progress Report, Colorado Division of Wildlife, Fort Collins, USA.

Anderson, C. R., Jr and D. J. Freddy. 2008. Population performance of Piceance Basin mule deer in response to natural gas resource extraction and mitigation efforts to address human activity and habitat degradation. Job Progress Report, Colorado Division of Wildlife, Fort Collins, USA.

Interagency Grizzly Bear Study Team. 2005. Reassessing methods to estimate population size

and sustainable mortality limits for the Yellowstone grizzly bear. IGBST, U.S. Geological Survey, Northern Rocky Mountain Science Center, Montana State University, Bozeman, MT, USA. Co-author.

Anderson, C.R., and F.G. Lindzey. 2000. A photographic guide to estimating mountain lion age classes. Wyoming Cooperative Fish and Wildlife Research Unit, Laramie, USA.

Moody, D., C. Anderson, G. Shorma, T. Moore, B. Williams, T. Kreeger, A. Langston, and S. Mays. 1999. Protocol for managing aggressive wildlife/human interactions. Wyoming Game and Fish Department Laboratory, Laramie, USA.

Anderson, C. R., M. A. Ternent, D. S. Moody, M. T. Bruscano, and D. F. Miller. 1997. Grizzly bear/cattle interactions on two cattle allotments in northwest Wyoming. Job Completion Report, Wyoming Game and Fish Department, Lander, USA.

Anderson, C. R., D. S. Moody, B. L. Smith, F. G. Lindzey, and R. P. Lanka. 1995. A comparison and evaluation of sightability models for summer elk surveys. Job Completion Report, Wyoming Cooperative Fish and Wildlife Research Unit, Laramie, USA.

Lanka, R. P., C. R. Anderson, L. Rice, and F. G. Lindzey. 1993. Validation of the Idaho elk sightability model for use in the Black Hills of Wyoming and South Dakota. Job Completion Report, Wyoming Cooperative Fish and Wildlife Research Unit, Laramie, USA.

Anderson, C. R. 1991. Lynx capture and marking study in the Vail area. Job Progress Report, Colorado Division of Wildlife, Ft. Collins, USA.

Miller, M. W., C. R. Anderson, and J. Vayhinger. 1991. Experimental evaluation of mountain sheep transplanting and disease treatment. Job Progress Report, Colorado Division of Wildlife, Ft. Collins, USA.

Anderson, C. R. 1990. The effects of plant water on voluntary intake in captive bighorn sheep. Job Completion Report, Colorado Division of Wildlife, Ft. Collins, USA.

## **PROFESSIONAL PRESENTATIONS**

Anderson, C.R. 2017. Piceance Basin mule deer and energy development. The 12<sup>th</sup> Deer and Elk Workshop, Sun Valley, ID (May).

Anderson, C.R. 2017. CPW Mule Deer Strategy predation study updates. CPW Habitat Partnership Program annual meeting, Grand Junction, CO.

Anderson, C.R. 2017. Behavioral plasticity buffers mule deer from demographic impacts of energy development. Colorado Chapter TWS, Grand Junction, CO (Feb).

Anderson, C.R. 2017. Historic changes in Piceance Basin mule deer demographics – Future Forest Roundtable. White River USFS, Aspen, CO

Anderson, C.R. 2016. Piceance Basin mule deer and energy development interactions: demographic responses and predation influences on neonate survival. Mesa State University, Grand Junction, CO (Nov). Invited speaker.

Anderson, C.R. 2016. Historic changes in Piceance Basin mule deer demographics. Central

- Mountain and Plains Section TWS, Steamboat Springs, CO
- Anderson, C.R. 2016. Piceance Basin mule deer and energy development interactions: demographic and behavioral responses. Annual Stakeholder Meeting, Grand Junction, CO (Oct).
- Anderson, C.R. 2015. Piceance Basin mule deer and energy development interactions: demographic responses and mitigation. Mesa State University, Grand Junction, CO (Nov). Invited speaker.
- Anderson, C.R. 2015. Piceance Basin mule deer and energy development interactions: addressing habitat improvements as mitigation. Annual Stakeholder Meeting, Grand Junction, CO (Oct).
- Anderson, C.R. 2015. Migration patterns of adult female mule deer in response to energy development. 11th Biennial Western States Deer and Elk Workshop, Canmore, Alberta, Canada (May).
- Anderson, C.R. 2015. Evaluating Mule Deer Migration: tools of the trade and what we have learned. Estes Park Museum (April). Invited speaker.
- Anderson, C.R. 2015. Evaluating Mule Deer Migration: tools of the trade and what we have learned. CU Boulder Museum of Natural History (Mar). Invited speaker.
- Anderson, C.R. 2015. Using Animal Responses to Address Success of Habitat Improvement Projects. High Altitude Revegetation Workshop, Ft. Collins (Mar). Invited speaker.
- Anderson, C.R. 2014. Piceance Basin mule deer and energy development interactions: addressing habitat improvements as mitigation. Annual Stakeholder Meeting, Grand Junction, CO (Nov).
- Anderson, C.R., Jr. 2014. Working toward a collaborative process to address wildlife–energy development interactions. Society for Conservation Biology Annual Meeting, Missoula, MT (July). Invited speaker.
- Anderson, C.R., Jr. and C.J. Bishop. 2014. Migration patterns of adult female mule deer in response to energy development. 79<sup>th</sup> North American Wildlife & Natural Resources Conference, Denver, CO (Mar). Invited speaker.
- Anderson, C.R. 2013. Piceance Basin mule deer and energy development interactions: addressing habitat improvements as mitigation. Annual Stakeholder Meeting, Grand Junction, CO (Oct).
- Northrup, J.M., M.B. Hooten, C.R. Anderson Jr., and G. Wittemyer. 2013. Practical guidance on availability sampling for habitat selection models. Colorado Wildlife Society Annual Meeting, Colorado Springs, CO (Feb).
- Peterson, M., C. Anderson, Jr., and P. Doherty, Jr. 2013. Effects of natural gas development on neonatal mule deer mortality. Colorado Wildlife Society Annual Meeting, Colorado Springs, CO (Feb). POSTER.
- Anderson, C.R., and C.J. Bishop. 2013. Piceance Basin mule deer and energy development interactions: addressing habitat improvements as mitigation. Habitat Partnership Program & Colorado Parks and Wildlife Statewide Habitat Conference, Grand Junction, CO (Jan). Invited speaker.
- Anderson, C.R., and C.J. Bishop. 2012. Piceance Basin mule deer and energy development interactions: addressing habitat improvements as mitigation. Annual Stakeholder Meeting, Grand Junction, CO (Oct).
- Northrup, J.M., C.R. Anderson Jr., and G. Wittemyer. 2012. Impacts of natural gas development on mule deer behavior in the Piceance Basin, Colorado. Annual Stakeholder Meeting, Grand Junction, CO (Oct).

- Anderson, C.R., P.E. Lendrum, J. Kie, J.A. Jenks, and R.T. Bowyer. Migration patterns and resource selection of mule deer in response to natural gas development. Annual Stakeholder Meeting, Grand Junction, CO (Oct).
- Northrup, J.M., C.R. Anderson Jr., and G. Wittemyer. 2012. Impacts of natural gas development on mule deer behavior in the Piceance Basin, Colorado. The Wildlife Society Annual Meeting, Portland, OR (Oct).
- Peterson, M., C. Anderson, Jr., and P. Doherty, Jr.. 2012. Effects of natural gas development on neonatal mule deer mortality. The Wildlife Society Annual Meeting, Portland, OR (Oct). POSTER.
- Lendrum, P. E., C. R. Anderson Jr., K. L. Monteith, J. A. Jenks, R. T. Bowyer. 2012. When to migrate: effects of natural-gas development on migration in mule deer. American Society of Mammalogists Annual Meeting, Reno, NV. POSTER.
- Northrup, J.M., C.R. Anderson Jr., and G. Wittemyer. 2012. Mule deer behavioral response to natural gas development in the Piceance Basin, Colorado. Front Range Student Ecology Symposium, Fort Collins, CO (Feb).
- Anderson, C.R., and C.J. Bishop. 2011. Piceance Basin mule deer and energy development interactions: addressing habitat improvements as mitigation. Annual Stakeholder Meeting, Grand Junction, CO (Nov).
- Northrup, J.M., C.R. Anderson, Jr., and G. Wittemyer. 2011. Behavioral response of mule deer to energy development in the Piceance Basin. Annual Stakeholder Meeting, Grand Junction, CO (Nov).
- Lendrum, P.E., C.R. Anderson, Jr., J.G. Kie, J. Jenks, and R.T. Bowyer. 2011. Migration patterns and resource selection of mule deer in response to natural gas development. Annual Stakeholder Meeting, Grand Junction, CO (Nov).
- Northrup, J.M., C.R. Anderson Jr., and G. Wittemyer. 2011. Behavioral response of mule deer to energy development in the Piceance Basin. Colorado Chapter of the Wildlife Society Annual Meeting, Fort Collins, CO (Feb).
- Anderson, C.R. 2011. Population performance of Piceance Basin mule deer in relation to natural gas development and mitigation measures to address habitat degradation and human activity management alternatives. Colorado Division of Wildlife public meeting to address mule deer management, Meeker, CO. Invited speaker.
- Anderson, C.R. 2011. Evaluation of habitat mitigation to offset energy development disturbance to mule in northwest Colorado. Southwest Region, Colorado Division of Wildlife in service training, Glenwood Springs, CO. Invited speaker.
- Anderson, C.R. 2011. Evaluation of habitat mitigation to offset energy development disturbance to mule in northwest Colorado. Northwest Region, Colorado Division of Wildlife in service training, Glenwood Springs, CO. Invited speaker.
- Anderson, C.R. 2010. Evaluation of habitat mitigation to offset energy development disturbance to mule in northwest Colorado. Joint Colorado Society for Range Management/Colorado Habitat Partnership Program Meeting, Grand Junction, CO.
- Anderson, C.R. 2010. Population performance of Piceance Basin mule deer in relation to natural gas development and mitigation measures to address habitat degradation and human activity management alternatives. Faculty/Student Seminar, Western State College. Invited speaker.
- Anderson, C.R. 2010. Population performance of Piceance Basin mule deer in relation to natural



- gas development and mitigation measures to address habitat degradation and human activity management alternatives. Piceance Basin Landowners, Rock School, CO.
- Anderson, C.R. 2010. Evaluation of cougar research and information needs for Texas. Cougar Expert Panel, Cesar Kleberg Wildlife Research Institute. Invited speaker.
- Anderson, C.R. 2009. Population performance of Piceance Basin mule deer in relation to natural gas development and mitigation measures to address habitat degradation and human activity management alternatives. Piceance Basin Landowners, Rock School, Colorado.
- Anderson, C.R. 2009. Population performance of Piceance Basin mule deer in relation to natural gas development and mitigation measures to address habitat degradation and human activity management alternatives. Faculty Seminar, Colorado State University. Invited speaker.
- Anderson, C.R. 2009. Population performance of Piceance Basin mule deer in relation to natural gas development and mitigation measures to address habitat degradation and human activity management alternatives. Colorado Mule Deer Association Annual Meeting, Grand Junction, CO. Invited speaker.
- Anderson, C.R., and D.F. Freddy. 2008. Population performance of Piceance Basin mule deer in relation to natural gas development and mitigation measures to address habitat degradation and human activity management alternatives. Tri-state meeting addressing wildlife management in relation to energy development activities, Parachute, CO. Invited speaker.
- Anderson, C.R. 2007. Addressing cougar conflict management. Western Association of Fish and Wildlife Agencies, Cody, WY. Invited speaker.
- Anderson, C.R. 2006. Mountain Lion Management in Wyoming. Wyoming Outfitters and Guides Association Annual Meeting, Riverton, WY. Invited speaker.
- Anderson, C.R. 2006. Draft Final Wyoming Mountain Lion Management Plan. Wyoming Game and Fish Commission Meeting, Lusk, WY.
- Anderson, C.R. 2006. Wyoming cougar management – data collection and synthesis used to evaluate cougar management objectives. Montana, North Dakota, South Dakota, Missouri, and Wyoming Regional Mountain Lion Management Meeting, Dickinson, ND. Invited speaker.
- Anderson, C.R. 2006. Cougar genetics and types of information that can be expected from cougar DNA. Montana, North Dakota, South Dakota, Missouri, and Wyoming Regional Mountain Lion Management Meeting, Dickinson, ND. Invited speaker.
- Anderson, C.R. F.G. Lindzey, D.D. Bjornlie, H. Sawyer, R.M. Nielson, and D.S. Moody. 2005. Exploring source-sink dynamics of Wyoming cougar populations. Wyoming Wildlife Society Annual Meeting, Jackson, WY.
- Becker, S.A., C.R. Anderson, and S.H. Anderson. 2005. Resource selection and population dynamics of Shira's moose in western Wyoming. Wyoming Wildlife Society Annual Meeting, Jackson, WY.
- Anderson, C.R. F.G. Lindzey, D.D. Bjornlie, H. Sawyer, R.M. Nielson, and D.S. Moody. 2005. Exploring source-sink dynamics of Wyoming cougar populations. The 8<sup>th</sup> Mountain Lion Workshop, Leavenworth, WA.
- Anderson, C.R. 2005. Advantages and disadvantages of trend indices and population estimators for monitoring cougar populations; cougar management panel discussion. Mountain Lion Management Symposium, Colorado Wildlife Society Annual Meeting. Colorado Springs, CO. Invited speaker.
- Anderson, C.R. 2005. Zoology and Physiology Department Seminar: Cougar ecology,

- management, and population genetics in Wyoming. University of Wyoming, Laramie. Invited speaker.
- Jansen, B.D., J.R. Heffelfinger, C.R. Anderson, P.R. Krausman, J.C. deVos, and T.H. Noon. 2004. Implications of infectious keratoconjunctivitis in a remnant bighorn sheep population. The Wildlife Society 11<sup>th</sup> Annual Conference. Calgary, Alberta, Canada.
- Anderson, C.R. 2004. Cougar predation, management, and population genetics in Wyoming. 4<sup>TH</sup> Biennial Wyoming, Colorado, Nebraska Interagency Coordination Meeting. Cherokee Park, CO. Invited speaker.
- Anderson, C.R. 2004. Workshop: Managing cougar populations by monitoring sex/age composition of harvests. Idaho Game and Fish Department, Southeast Region. Idaho Falls, ID. Invited speaker.
- Anderson, C.R., and F.G. Lindzey. 2004. Estimating cougar predation rates from GPS location records. Arizona-New Mexico Wildlife Society Annual Meeting. Safford, AZ. POSTER.
- Anderson, C. R., F.G. Lindzey, and N.P. Nibbelink. 2003. Estimating cougar abundance using probability sampling: an evaluation of transect versus block design. Proceedings of the 7<sup>th</sup> Mountain Lion Workshop. Jackson, WY.
- Anderson, C.R., and F.G. Lindzey. 2003. Monitoring changes in cougar sex/age structure with changes in abundance as an index to population trend. Proceedings of the 7<sup>th</sup> Mountain Lion Workshop. Jackson, WY.
- Anderson, C.R. F.G. Lindzey, and D.B. McDonald. 2003. Genetic structure of cougar populations across the Wyoming Basin: metapopulation or megapopulation. Proceedings of the 7<sup>th</sup> Mountain Lion Workshop. Jackson, WY.
- Anderson, C. R., F.G. Lindzey, and N.P. Nibbelink. 2002. Estimating cougar abundance using probability sampling: an evaluation of transect versus block design. Wyoming Wildlife Society Annual Meeting. Douglas, WY.
- Poss, M., R. Beik, and C. Anderson. 2002. Pathogens and predators: Using viruses to track cougar populations. Annual Meeting of the Northwest Section and Washington Chapter of The Wildlife Society.
- Anderson, C.R. 2002. Mountain lion ecology and management. Colorado Division of Wildlife hunter education instructors annual meeting. Grand Junction, CO. Invited speaker.
- Anderson, C.R. 2002. Mountain lion management; Panel Discussion: The future of predator management. Predatory Animal Management Symposium "Perspectives on Management." Casper, WY. Invited speaker.
- Anderson, C.R., and F.G. Lindzey. 2001. Monitoring changes in mountain lion sex/age class with changes in abundance as an index to population trend. Wyoming Wildlife Society Annual Meeting. Laramie, WY.
- Anderson, C.R., and F.G. Lindzey. 2001. Monitoring changes in mountain lion sex/age class with changes in abundance as an index to population trend. The Wildlife Society 8<sup>th</sup> Annual Conference. Reno, NV.
- Anderson, C.R., and F.G. Lindzey. 2001. Using GPS technology to estimate mountain lion prey selection and predation rates. The Wildlife Society 8<sup>th</sup> Annual Conference. Reno, NV.
- Anderson, C.R., and F.G. Lindzey. 2001. Using GPS technology to estimate mountain lion prey selection and predation rates. American Society of Mammalogists Annual Meeting. Missoula, MT.
- Anderson, C.R., M.A. Ternent, and D.S. Moody. 2001. Grizzly bear-cattle interactions on 2

- grazing allotments in Northwest Wyoming. Thirteenth International Conference on Bear Research and Management. Jackson, WY. POSTER.
- Anderson, C.R., and F.G. Lindzey. 2001. Mountain lion ecology and management: prey selection and predation rates from GPS data; tracking population trend using harvest data. Colorado Wildlife Society Annual Meeting. Grand Junction, CO. Invited speaker.
- Anderson, C.R., and F.G. Lindzey. 2000. Using GPS collars to estimate mountain lion predation rates and selection of large prey. Proceedings of the 6<sup>th</sup> Mountain Lion Workshop. San Antonio, TX.
- Anderson, C.R., and F.G. Lindzey. 2000. Estimating sex reporting bias in mountain lions using DNA analyses. Proceedings of the 6<sup>th</sup> Mountain Lion Workshop. San Antonio, TX.
- Biek, R., C.R. Anderson, T.K. Ruth, K.M. Murphy, M.R. Johnson, C.M. Gillin, and M. Poss. 2000. Viral diseases and cougar demography. Proceedings of the 6<sup>th</sup> Mountain Lion Workshop. San Antonio, TX.
- Anderson, C.R., and F.G. Lindzey. 2000. Using GPS technology to estimate mountain lion prey selection and predation rates. Wyoming Wildlife Society Annual Meeting. Dubois, WY.
- Lindzey, F., H. Sawyer, C. Anderson, and B. Banulis. 2000. Performance of store-on-board GPS collars on elk, mule deer, and mountain lions in Wyoming, USA. Proceedings of the conference on tracking animals with GPS. Craigiebuckler, Aberdeen, Scotland.
- Anderson, C.R. 2000. Estimating mountain lion age classes during mandatory inspection. Wyoming Game and Fish Department Annual In-service Training. Douglas, WY. Invited speaker.
- Anderson, C.R. 1998. Mountain lion management, past research, and future research needs. National Park Service Workshop addressing increasing human/mountain lion interactions. Grand Canyon National Park, AZ. Invited speaker.
- Anderson, C.R., D.M. Moody, M.T. Bruscano, M.A. Ternent, and D.F. Miller. 1997. Grizzly bear-cattle interactions on two cattle allotments in northwest Wyoming. The Wildlife Society 4<sup>th</sup> Annual Conference. Snowmass, CO.
- Anderson, C.R., D.M. Moody, M.T. Bruscano, and D.F. Miller. 1995. Grizzly bear-cattle interactions on two cattle allotments in northwest Wyoming. Wyoming Wildlife Society Annual Meeting. Casper, WY.
- Anderson, C.R., D.M. Moody, B.L. Smith, F.G. Lindzey, and R.P. Lanka. 1995. Development and evaluation of sightability models for summer elk surveys. Jackson Hole Elk Studies Group Annual Meeting. Grand Teton National Park, WY. Invited speaker.
- Anderson, C.R., D.M. Moody, B.L. Smith, R.P. Lanka, and F.G. Lindzey. 1994. A comparison and evaluation of sightability models for summer elk surveys. Jackson Hole Elk Studies Group Annual Meeting. Grand Teton National Park, WY. Invited speaker.
- Anderson, C.R., and F.G. Lindzey. 1994. Moose sightability model developed from helicopter surveys. 30<sup>th</sup> North American Moose Conference and Workshop. Idaho Falls, ID.
- Anderson, C.R., and F.G. Lindzey. 1993. A moose sightability model developed from helicopter surveys in western Wyoming. Wyoming Wildlife Society Annual Meeting. Douglas, WY.
- Anderson, C.R., D.M. Moody, B.L. Smith, R.P. Lanka, and F.G. Lindzey. 1992. A comparison and evaluation of sightability models for summer elk surveys. Wyoming Wildlife Society Annual Meeting. Casper, WY.

#### **FUNDED PROPOSALS**

- Anderson, C.R. Addressing overwinter mule deer fawn mass as an index of winter severity and habitat condition. Shell Mule Deer mitigation fund. 2018, \$20,000.

Anderson, C.R. Addressing overwinter mule deer fawn mass as an index of winter severity and habitat condition. Muley Fanatic Foundation. 2015-2017, \$40,000.

Anderson, C.R. Mule deer response to habitat improvements in relation to energy development activity – monitoring habitat responses to mechanical treatments. Colorado Auction Raffle Grants, Colorado Habitat Partnership Program. 2015, \$32,000.

Anderson, C.R., and D.J. Freddy. Mule deer population performance in response to energy development and mitigation efforts to address habitat degradation and human activity. EnCana Oil and Gas, Inc., Shell Oil Corp., Williams Production, LLC, ExxonMobil Production Co., Marathon Oil Corp, XTO Energy, Colorado Mule Deer Assn., Mule Deer Foundation. 2008-2014, \$5,500,000.

Pauli, J., M. BenDavid, S. Buskirk, and C.R. Anderson. Teolmere length as a novel method to age wildlife. Wyoming Governor's Big Game License Coalition and the Wildlife Heritage Foundation of Wyoming, 2006, \$7,616.

Moody, D.M., C.R. Anderson, and D.D. Bjornlie. Evaluation of trail cameras to estimate grizzly bear population size in the Greater Yellowstone Ecosystem. Wyoming Wildlife Trust Account, 2006, \$30,000

Anderson, C.R., and F.G. Lindzey. Changes in sex/age composition of mountain lion populations as an index of abundance. Wyoming Animal Damage Management Board, 2000-2003, \$90,000.

Anderson, C.R., and F.G. Lindzey. Changes in Sex/Age composition of mountain lion populations as an index of abundance. Pope and Young Club, 2000-2003, \$3,000.

Anderson, C.R., F.G. Lindzey, and D.M. Moody. Developing a cougar management program for Wyoming. Wyoming Game and Fish Department, 1997-2002, \$311,000.

Anderson, C.R., B.L. Smith, and F.G. Lindzey. Development and evaluation of sightability models for summer elk surveys-manuscript publication. Rocky Mountain Elk Foundation, 1997, \$850.

## **SPECIAL SKILLS**

I have served as principal investigator, field supervisor, and/or research collaborator on 12 research projects addressing various aspects of large mammal ecology and management in the Rocky Mountain west. Research topics include evaluating the status of threatened or endangered species (lynx, grizzly bear), developing and evaluating population estimation methods (elk, moose, cougar, grizzly bear), implication of wildlife diseases (bighorn sheep, cougar, moose), habitat use and seasonal migration patterns (cougar, moose, mule deer, pronghorn), wildlife nutrition (bighorn sheep, mule deer), population dynamics (cougar, moose, mule deer), predator-prey relationships (cougar-elk, deer, pronghorn; grizzly bear-cattle), developing management/conservation programs (cougar, grizzly bear), wildlife/human interactions (bighorn sheep, cougar, grizzly bear, mule deer) and population genetics (cougar). I have addressed the general public, state legislature, and state wildlife commission regarding wildlife management and conservation, and have been interviewed

by the media regarding wildlife management issues on numerous occasions. Computer software packages I am familiar with include Word, Word Perfect, Excel, Freelance, Lotus 123, D-base, Access, ArcView, POPII, and various statistical packages (e.g., SAS, Minitab, SPSS, BMDP, R) and genetics software (e.g., Fstat, Genepop, Relate). I have instructed college students in the Principals of Wildlife Management Techniques, assisted with teaching Wildlife Population Ecology, and served as guest lecturer at the University of Wyoming, Colorado State University, Mesa State University, and Western State College. I have served on graduate committees for the University of Wyoming, University of Idaho, Colorado State University, and Western Illinois University.

## **PROFESSIONAL ACTIVITIES**

### **Professional Memberships**

- The Wildlife Society (TWS), 1990-present
- Colorado Chapter TWS, 1989-1994, 2006-present
- Northwest Representative, Colorado Chapter TWS, 2011-2013
- Board Member at Large, Wyoming Chapter TWS, 2006
- Wyoming Chapter TWS, 1994-2006
- Board Member, University of Wyoming Student Chapter TWS, 1999
- Board Member, Colorado Chapter TWS, 1990
- President, Colorado State University Student Chapter TWS, 1990

### **Peer Referee**

- Biological Conservation
- Canadian Journal of Zoology
- Ecological Modeling
- Environmental Management
- Journal of Applied Ecology
- Journal of Mammalogy
- Journal of Wildlife Diseases
- Journal of Wildlife Management
- Northwest Science
- Raptor Research
- Southeastern Naturalist
- Ursus
- Wildlife Biology
- Wildlife Biology in Practice
- Wildlife Research
- Wildlife Society Bulletin
- Wildlife Society Bulletin Book Review: Cougar Management Guidelines, First Edition

### **Professional Service**

- Affiliate Faculty, Department of Biological Sciences, Western Illinois University, October 2016–present.

- Associate Editor, Wildlife Society Bulletin, January 2016–present.
- Coordinating Committee Colorado Parks and Wildlife Mule Deer Summit, October 2012–2016
- Scientific Advisor, Habitat credit trading to address energy development mitigation, October 2012–2016.
- North Dakota Mule Deer Advisory Committee, August 2012–2017.
- Affiliate Faculty, Department of Fish, Wildlife and Conservation Biology, Colorado State University, January 2012–present.
- Affiliate Faculty, College of Arts and Sciences, Idaho State University, Dec. 2009–present.
- Advisory Board, The Cougar Network, 2009–present
- Animal Care and Use Committee, Colorado Division of Wildlife, August 2010–Sept. 2012.
- Adjunct Assistant Professor, University of Wyoming, 2005–2009.
- Interagency Grizzly Bear Study Team representing Wyoming Game and Fish Department, 1995–1997 and 2004–2006
- Search Committee, Zoology & Physiology Faculty Position, University of Wyoming, 2000
- Search Committee, Wildlife Biology Faculty Position, Colorado State University, 1990

#### **AWARDS/HONORS**

- Professional Achievement in Wildlife Research, Colorado Chapter of the Wildlife Society, 2013.
- Best Presentation, Wyoming Wildlife Society Annual Meeting, 2001.
- Best Presentation, Wyoming Wildlife Society Annual Meeting, 2000.
- Colorado Chapter TWS Professional Development Fund recipient, 1990.
- Outstanding Senior in Wildlife Biology, Colorado State University, 1990.
- Myron Ludlow Scholarship, 1990.
- Outstanding College Students of America, 1989.
- Golden Key National Honor Society, 1989.
- Phillip A. Connally Memorial Scholarship, 1989.