

Curriculum Vitae

Esther S. Rubin

EDUCATION

Ph.D. Ecology. University of California, Davis. 2000. Dissertation: The Ecology of Desert Bighorn Sheep (*Ovis canadensis*) in the Peninsular Ranges of California.

Bachelor of Science. Zoology. University of California, Davis. 1983.

EMPLOYMENT HISTORY

December 2011 – present. Research Branch Chief, Arizona Game and Fish Department, Phoenix, Arizona.

June 2009 – December 2011. Terrestrial Research Program Manager, Arizona Game and Fish Department, Phoenix, Arizona.

Provided overall management oversight to terrestrial research projects, including management of biologists and field staff, budgets, and project planning, design, and reporting.

December 2005 – June 2009. Ecologist, Conservation Biology Institute, San Diego, California.

Provided scientific expertise to support the conservation and recovery of biological diversity through applied research, education, planning, and community service. Activities included field research, providing scientific input, coordination, and analysis to conservation planning, and designing population monitoring protocols. Selected projects include:

- *An Assessment of the Known and Potential Impacts of Feral Pigs (*Sus scrofa*) in and near San Diego County with Management Recommendations* (Project Lead, contract with The Nature Conservancy).
- *Evaluation of Risks and Benefits of Population Augmentation Options to Facilitate Recovery of Bighorn Sheep in the Peninsular Ranges, California* (Project Coordinator, contract with the California Department of Fish and Game).
- *A Framework for Effective Conservation Management of the Sonoran Desert in California* (Project Lead, contract with The Nature Conservancy).
- *East County Multiple Species Conservation Plan – County of San Diego* (Independent Science Advisor to the County of San Diego).
- *A Population Monitoring Framework for Five Subspecies of Island Fox* (Project Lead, contract with The Nature Conservancy).
- *Framework Monitoring Plan for the San Clemente Island Fox* (Scientist, contract with The Nature Conservancy).

December 2000 – December 2005. Post-doctoral Research Fellow, Zoological Society of San Diego, California. Conducted research on habitat use, social behavior, and mountain lion predation of bighorn sheep in the Peninsular Ranges, California.

July 1994 – December 2000. Scientific Aide, California Department of Fish and Game, Sacramento, California. Conducted field studies on bighorn sheep in the Peninsular Ranges, California, to determine distribution, abundance, recruitment, survivorship, and causes of mortality.

August 1998 – January 1999. Contractor, U. S. Fish and Wildlife Service, Carlsbad, California. Prepared a draft Federal recovery plan (subsequently adopted by the US Fish and Wildlife Service) for Peninsular bighorn sheep, a Federally endangered population.

September 1987 – September 1993. Senior Keeper, Zoological Society of San Diego, San Diego Wild Animal Park, Escondido, California. Hand-raised exotic ungulates that had been orphaned, injured, or rejected by their dams. Formulated diets and provided complete care for neonates.

April 1991 – July 1991. Senior Hospital Keeper, Senior Keeper, Zoological Society of San Diego, San Diego Wild Animal Park, Escondido, California. Cared for mammals, birds, and reptiles that were housed at the hospital as medical patients or in quarantine as new animals to the Society's collection. Researched husbandry protocols, housing, and diet for each species, and assisted veterinarians during medical procedures and with medical care of patients.

SELECTED PEER-REVIEWED PUBLICATIONS

Rubin, E. S., C. J. Stermer, W. M. Boyce, and S. G. Torres. 2009. Assessment of Predictive Habitat Models for Bighorn Sheep in California's Peninsular Ranges. *Journal of Wildlife Management* 73:859-869.

Ostermann-Kelm, S., E. R. Atwill, E. S. Rubin, M. C. Jorgensen, and W. M. Boyce. 2008. Interactions between feral horses and desert bighorn sheep at water. *Journal of Mammalogy* 89:459-466.

Ostermann, S. D., E. S. Rubin, J. D. Groom, J. R. DeForge, G. Wagner, P. Sorensen, S. G. Torres, M. C. Jorgensen, A. J. Byard, and O. Ryder. 2005. Flawed model has serious conservation implications: Response to Turner et al. *Wildlife Society Bulletin* 33:1456-1464.

Boyce, W. M., C. S. O'Brien, and E. S. Rubin. 2003. Response of bighorn sheep (*Ovis canadensis*) to feral honey bees (*Apis mellifera*) at water. *The Southwestern Naturalist* 48(1):81-84.

Boyce, W. M., E. S. Rubin, and C. S. O'Brien. 2002. A scientific note on the distribution of Africanized honey bees and *Varroa destructor* in feral honey bee populations in California. *Apidologie* 33:581-582.

Rubin, E. S., W. M. Boyce, and E. P. Caswell-Chen. 2002. Modeling demographic processes in an endangered population of bighorn sheep. *Journal of Wildlife Management* 66(3):796-810.

Rubin, E. S., W. M. Boyce, C. J. Stermer, and S. G. Torres. 2002. Bighorn sheep habitat use and selection near an urban environment. *Biological Conservation* 104:251-263.

Ernest, H. B., E. S. Rubin, and W. M. Boyce. 2002. Fecal DNA analysis and risk assessment of mountain lion predation of bighorn sheep. *Journal of Wildlife Management* 66:75-85.

Hayes, C. L., E. S. Rubin, M. C. Jorgensen, R. A. Botta, and W. M. Boyce. 2000. Mountain lion predation of bighorn sheep in the Peninsular Ranges, California. *Journal of Wildlife Management* 64(4):954-959.

Rubin, E. S., W. M. Boyce, and V. C. Bleich. 2000. Reproductive strategies of desert bighorn sheep. *Journal of Mammalogy* 81(3):769-786.

Boyce, W.M., R.R. Ramey, T.C. Rodwell, E.S. Rubin, and R.S. Singer. 1999. Population subdivision among desert bighorn sheep (*Ovis canadensis*) ewes revealed by mitochondrial DNA analysis. *Molecular Ecology* 8(1):99-106.

SELECTED REPORTS AND BOOK CHAPTERS

Conservation Biology Institute. 2009. An Assessment of the Known and Potential Impacts of Feral Pigs (*Sus scrofa*) in and near San Diego County with Management Recommendations. Prepared for The Nature Conservancy, California. 26pp and Appendices.

Conservation Biology Institute. 2009. A Framework for Effective Conservation Management of the Sonoran Desert in California. Prepared for The Nature Conservancy, California. 76pp and Appendices.

Rubin, E. S., V. J. Bakker, M. G. Efford, B. S. Cohen, J. A. Stallcup, W. D. Spencer, and S. A. Morrison. 2007. A population monitoring framework for five subspecies of island fox (*Urocyon littoralis*). Prepared by the Conservation Biology Institute and The Nature Conservancy for the Recovery Coordination Group of the Integrated Recovery Team. 145pp and Appendices.

Spencer, W., E. Rubin, J. Stallcup, V. Bakker, B. Cohen, S. Morrison, and R. Shaw. 2006. Framework Monitoring Plan for the San Clemente Island Fox. Prepared by the Conservation Biology Institute, University of California, Davis, and The Nature Conservancy, for the United States Navy Region Southwest. 88pp and Appendices.

Penrod, K., C. Cabañero, P. Beier, C. Luke, W. Spencer, and E. Rubin. 2006. South Coast Missing Linkages Project: A Linkage Design for the Peninsular-Borrogo Connection. Produced by South Coast Wildlands, Idyllwild, CA (www.scwildlands.org) in cooperation with California State Parks.

Penrod, K., C. Cabañero, P. Beier, C. Luke, W. Spencer, E. Rubin, R. Sauvajot, S. Riley, and D. Kamradt. 2006. South Coast Missing Linkages Project: A Linkage Design for the Santa Monica-Sierra Madre Connection. South Coast Wildlands, Idyllwild, CA (www.scwildlands.org).

Penrod, K., C. Cabañero, P. Beier, C. Luke, W. Spencer, and E. Rubin. 2005. South Coast Missing Linkages Project: A Linkage Design for the San Bernardino-Granite Connection. South Coast Wildlands, Idyllwild, CA (www.scwildlands.org).

Penrod, K., C. Cabañero, P. Beier, W. Spencer, C. Luke, and E. Rubin. 2005. South Coast Missing Linkages Project: A Linkage Design for the Sierra Madre-Castaic Connection. South Coast Wildlands, Idyllwild, CA (www.scwildlands.org).

Rubin, E. S. and V. C. Bleich. 2005. Sexual segregation: a necessary consideration in wildlife conservation. Pages 379-391 in *Sexual Segregation in Vertebrates* (K. Ruckstuhl and P. Neuhaus, eds.). Cambridge University Press, England.

Penrod, K., C. Cabañero, P. Beier, W. Spencer, C. Luke, E. Rubin, S. Loe, and K. Meyer. 2004. South Coast Missing Linkages Project: A Linkage Design for the San Gabriel-San Bernardino Connection. South Coast Wildlands, Idyllwild, CA (www.scwildlands.org).

Ostermann, S., E. Rubin, R. Atwill, and W. Boyce. 2004. Feral horses in Coyote Canyon, Anza-Borrego Desert State Park. Final Report for Interagency Agreement # 920-99-00237 between California State Parks and the UC Davis Wildlife Health Center.

SELECTED RECENT SCIENTIFIC PRESENTATIONS

Rubin, E. S., C. J. Stermer, W. M. Boyce, and S. G. Torres. Development of a predictive habitat model for bighorn sheep in the Peninsular Ranges, California. Biennial meeting of the Desert Bighorn Council. April 2007, Las Vegas, Nevada.

Rubin, E. S. Behavior is a necessary consideration in conservation: sexual segregation as an example. Annual meeting of the Society for Conservation Biology. July 2005. Brasilia, Brazil.

Rubin, E. S., C. J. Stermer, C. Chun, S. G. Torres, and W. M. Boyce. Mountain lion predation on bighorn sheep: an examination of risk factors and seasonal mortality patterns. Biennial meeting of the Desert Bighorn Council. April 2005, Alpine, Texas.

Ostermann, S. D., E. R. Atwill, E. S. Rubin, and W. M. Boyce. Direct and indirect interference competition between feral horses and desert bighorn sheep at water. Poster. Biennial meeting of the Desert Bighorn Council. April 2005, Alpine, Texas.

Rubin, E. S. Sexual segregation and its relation to mating systems: bighorn sheep (*Ovis canadensis*) as an example. Invited presentation. The XIXth International Congress of Zoology. August 2004, Beijing, China.

Rubin, E. S. Further examination of sexual segregation in bighorn sheep: preliminary results from an ongoing study. Invited presentation. Workshop on Sexual Segregation. Cambridge University. September 2002, Cambridge, England.

Rubin, E. S., W. M. Boyce, and E. P. Caswell-Chen. A simulation model for exploring demographic processes in an endangered population of bighorn sheep. Annual meeting of the Desert Bighorn Council. April 2002, Palm Springs, California.

Rubin, E. S., W. M. Boyce, and V. C. Bleich. Reproductive strategies of desert bighorn sheep. Annual Conference of The Wildlife Society – Western Section. January 2000, Riverside, California.

SELECTED TEACHING AND SERVICE

March 2005-June 2008. Graduate student guidance committee member. Janene Colby (M.S.), Comparison of GPS and VHF Telemetry Methods to Study the Habitat Use and Selection of Southern Mule Deer (*Odocoileus hemionus fuliginatus*). California State University, San Marcos.

1999 – 2000. Provided invited guidance to researchers at the Autonomous University of Baja California on the development and initiation of a bighorn sheep study in the San Pedro Martir Mountains of Baja, Mexico.

July 1999. Participated in a 4-day workshop entitled “Population and Habitat Viability Assessment for the Desert Bighorn Sheep in New Mexico”, New Mexico Department of Game and Fish, and The Conservation Breeding Specialist Group (SSC/IUCN), Santa Fe, New Mexico.

Current Professional Activities

Western Association of Fish and Wildlife Agencies Wildlife Health Committee member

Western Association of Fish and Wildlife Agencies Science and Research Committee member

USFWS Desert Landscape Conservation Cooperative, invited member of Science Working Group.

SC Wildlands (“Science and Collaboration for Connected Wildlands”) Board member, elected Board Secretary, and Scientific Advisory Committee

The Wildlife Society