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Ross EcoAnalytics
DATA DRIVEN CONSERVATION

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Dr. Beth Ross

Professional Summary

Quantitative ecologist with 12+ years of professional experience synthesizing complex ecological, climate, and socio-environmental datasets to support conservation decision-making. Skilled at leading multi-disciplinary research collaborations with federal, state, NGO, and academic partners. Experienced in evaluating data quality, developing analytical frameworks, and communicating findings to diverse audiences.

Core Competencies and Technical Skills

R, NIMBLE, JAGS, INLA, Shiny, R Markdown, Quarto

Relevant Expertise

- Dataset identification, evaluation, and documentation
- Analysis of spatial and non-spatial ecological and environmental datasets
- Experience with local to national-scale conservation analyses
- Collaborative project design and management with multi-institutional partners
- Translating analytical results into potential conservation actions

Education

Ph.D. Wildlife Biology, Utah State University. 2014.
M.S. Statistics, Utah State University. 2012.
M.S. Zoology, Colorado State University. 2007.
B.S., Wildlife Biology, Kansas State University. 2004.

Professional Experience

2025- Owner and Statistician, Ross EcoAnalytics, LLC, Albuquerque, NM

- Synthesized multi-source datasets to create factsheets summarizing Department of Interior equities across the United States as part of a Shiny app for Next Interior. Serve as the Statistical Advisor for Next Interior.
- Will conduct power analysis on marine bird ocean surveys in the Atlantic as part of a multi-disciplinary team with work starting in Summer 2026. This work will inform survey design related to offshore wind energy development and the displacement of marine birds and update the E-TWG Avian Displacement Committee survey guidance.

2021-25 Quantitative Ecologist, U.S. Fish and Wildlife Service, Science Applications, Albuquerque, NM
- Led multi-disciplinary teams to identify project goals, design surveys, conduct analyses, and communicate insights to diverse audiences.
- Designed analyses to address stakeholder needs related to management effectiveness, population change, and habitat use.
- Presented results in multiple formats including Shiny apps, webinars, scientific presentations, internal reports, and scientific publications.

2016-21 Assistant Unit Leader, South Carolina Cooperative Fish and Wildlife Research Unit, U.S. Geological Survey, Clemson University, Clemson, SC

2016-21 Assistant Professor, Department of Forestry and Environmental Conservation, Clemson University, Clemson, SC
- Developed projects in collaboration with stakeholders to inform needs related to survey methodology, population and habitat assessments, and landscape conservation.

2013-16 Postdoctoral Research Associate, Kansas Cooperative Fish and Wildlife Research Unit, KSU Division of Biology
- Evaluated survey methodology and analyzed population data to inform managers on the status of Lesser Prairie-Chicken populations
- Developed landscape metric to identify key landscape characteristics for population management.

Selected Publications

Full publication list available upon request or at Google Scholar

Ross, B.E., M.A. Boggie, A. Anders, and D. Shaver. 2024. Quantifying the effects of nest management and environmental change on demography of an endangered sea turtle. Ecosphere 15:e4982

A.V. Kumar, J.D. Tack, K.E. Doherty, J.T. Smith, **B.E. Ross**, and G. Bedrosian. 2024. Defend and grow the core for birds: how a sagebrush conservation strategy benefits rangeland birds. Rangeland Ecology & Management 97:160-168.

Ross, B.E. and M.E. Weegman. 2022. Relative effects of sample size, detection probability, and study duration on estimation in integrated population models. Ecological Applications 32:e2686.

Schindler, A., D.A. Haukos, C.A. Hagen, and **B.E. Ross**. 2020. A decision-support tool to prioritize candidate landscapes for lesser prairie-chicken conservation. Landscape Ecology 35:1417-1434.

Ross, B.E., D.S. Sullins, D.A. Haukos. 2019. Using an individual-based model to assess common biases in lek-based count data to estimate population trajectories of lesser prairie-chickens. PLoS ONE 14:e0217172.

Ross, B.E., D. Haukos, C. Hagen, and J. Pitman. 2016. Landscape composition creates a threshold influencing Lesser Prairie-Chicken population resilience to extreme drought. Global Ecology and Conservation 6:179-188.

Selected Conference Presentations

Ross, B.E., N. Masto, R. Kaminski, J. Dozier, M. McAlister, and J. Woods. 2019. Integrating counts from aerial and ground surveys to estimate densities of waterfowl. SEAFWA, Hilton Head, SC.

Ross, B.E. and J.M. Wood. 2018. Optimal sampling design for autonomous recording units and traditional point-count sampling. The Wildlife Society. Cleveland, Ohio.

Ross, B.E., D.S. Sullins, D.A. Haukos. 2018. Using an individual-based model to assess monitoring for lesser prairie-chicken population growth rates. International Grouse Symposium, Logan, Utah.

Selected Grants

2025 Regional Wildlife Science Collaborative. E. Adams, K. Williams, H. Goyert, L. Scott-Hayward, S. Isojunno, J. Robinson Willmott, G. Forcey, E. Amichai, M. Vukovich, J. Lamb, **B.E. Ross**. Synthesizing information on avian vulnerability with study design analysis to support planning for regional offshore wind research efforts.

2019 South Carolina Dept. of Natural Resources. **B.E. Ross**. Response of Bachman's Sparrow to habitat management in a wiregrass-free ecosystem.

2017 Pheasants Forever. **B.E. Ross** and D. Haukos. A multi species approach to managing the effects of weather and land use on upland game birds.

Teaching & Mentoring

Taught graduate courses in analysis of wildlife populations, spatial ecology, and Bayesian statistics at Clemon University and Kansas State University. Served as primary advisor for 6 M.S. students and served on committees for 10 Ph.D. and M.S. students at Clemson University.

References available upon request