BRYAN S. STEVENS
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Education

Doctor of Philosophy Degree in Fisheries and Wildlife (2016)
Michigan State University, East Lansing, Michigan

Master of Science Degree in Statistics (2012)
University of Idaho, Moscow, Idaho

Master of Science Degree in Wildlife Resources (2011)
University of Idaho, Moscow, Idaho

Bachelor of Science Degree in Wildlife Resources, Statistics Minor (2008)
University of Idaho, Moscow, Idaho

Associate of Applied Science Degree in Wildlife Science (2006)
Hocking College, Nelsonville, Ohio

Professional Experience

Research Scientist
Idaho Cooperative Fish and Wildlife Research Unit
Department of Fish and Wildlife Sciences
University of Idaho, Moscow, Idaho
August 2018–Present

Postdoctoral Research Fellow
Idaho Cooperative Fish and Wildlife Research Unit
Department of Fish and Wildlife Sciences
University of Idaho, Moscow, Idaho
January 2017–August 2018

Postdoctoral Research Associate, Remote Research Associate
Department of Fisheries and Wildlife
Michigan State University, East Lansing, Michigan
Postdoc: August 2016–December 2016; Remote: January 2017–September 2017

Professional Experience (continued)

Graduate Research Assistant and Boone and Crockett Fellow
Quantitative Fisheries Center and Boone and Crockett Quantitative Wildlife Center
Department of Fisheries and Wildlife
Michigan State University, East Lansing, Michigan
July 2012–July 2016

Graduate Research Assistant
Departments of Fish and Wildlife Resources and Statistics
University of Idaho, Moscow, Idaho
July 2008–May 2012

Fisheries Data Technician
Idaho Department of Fish and Game, Coeur d'Alene, Idaho
May 2007–October 2007

Volunteer Intern, Research Technician
Ohio Division of Wildlife, Athens, Ohio
Volunteer: November 2005–March 2006; Research Technician: March 2006–July 2006

Peer-Reviewed Publications (* = student, bold = external agency collaborator)

Stevens, B.S., **S. Roberts**, C.J. Conway, and **D. Englestead**. 2023. Effects of large-scale disturbance on animal space use: functional responses by greater sage-grouse after megafire. Ecology and Evolution 13:in press.

Stevens, B.S., C.J. Conway, **J. Knetter**, **S. Roberts**, and **P. Donnelly**. 2023. Multi-scale effects of land cover, weather, and fire on Columbian sharp-tailed grouse. Journal of Wildlife Management 86:e22349.

Stevens, B.S., C.J. Conway, **K. Luke**, **A. Weldon**, **C. Hand**, **A. Schwartzer**, **F. Smith**, **C. Watson**, and B. Watts. 2022. Large-scale distribution models for optimal prediction of Eastern black rail habitat within tidal ecosystems. Global Ecology and Conservation 38:e02222.

Hardy, R.S., **T.J. Ross**, **K. McDonnell**, M.C. Quist, **C. Holdermann**, and B.S. Stevens. 2022. Nutrient restoration of a large, impounded, ultra-oligotrophic western river to recover declining native and sport fisheries. North American Journal of Fisheries Management 42:977–993.

Stevens, B.S., and C.J. Conway. 2021. Mapping Habitat Quality and Threats for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*). Waterbirds 44:245–256.

*Riley, I.P., C.J. Conway, B.S. Stevens, and **S. Roberts**. 2021. Survival of greater sage-grouse broods: survey method affects disturbance and age-specific detection probability. Journal of Field Ornithology 92:88–102.

*Riley, I.P., C.J. Conway, B.S. Stevens, and **S. Roberts**. 2021. Aural and visual detection of greater sage-grouse leks: implications for population trend estimates. Journal of Wildlife Management 85:508–519.

*Helmstetter, N.A., C.J. Conway, B.S. Stevens, and *A.R. Goldberg. 2021. Balancing transferability and complexity of species distribution models for rare species conservation. Diversity and Distributions 27:95–108.

*Harrity, E.J., B.S. Stevens, and C.J. Conway. 2020. Keeping up with the times: mapping range-wide habitat suitability for endangered species in a changing environment. Biological Conservation 247:e108734.

*Smith, J.B., B.S. Stevens, **D. Etter**, and D.M. Williams. 2020. Performance of spatial capture-recapture models with repurposed data: assessing estimator robustness for retrospective applications. PLOS ONE 15:e0236978.

Stevens, B.S., J.R. Bence, **D.R. Luukkonen**, and W.F. Porter. 2020. A hierarchical framework for estimating abundance and population growth from imperfectly observed removals. Ecosphere 11:e03131.

Stevens, B.S., **D.R. Luukkonen**, **C.A. Stewart**, W.F. Porter, J.R. Bence, and M.L. Jones. 2020. Spatial-temporal dynamics of hunter effort for wild turkeys in Michigan. PLOS ONE 15:e0230747.

Stevens, B.S., and C.J. Conway. 2020. Mapping habitat suitability at range-wide scales: spatially explicit distribution models to inform conservation and research for marsh birds. Conservation Science and Practice 2:e178.

Stevens, B.S., and C.J. Conway. 2020. Predictive multi-scale occupancy models at range-wide extents: effects of habitat and human disturbance on distributions of wetland birds. Diversity and Distributions 26:34–48.

Stevens, B.S., and C.J. Conway. 2019. Identifying important military installations for continental-scale conservation of marsh bird breeding habitat. Journal of Environmental Management 252:e109664.

Stevens, B.S., and C.J. Conway. 2019. Predicting species distributions: unifying model selection and scale optimization for multi-scale occupancy models. Ecosphere 10:e02748.

*Manning, S.E., B.S. Stevens, and D.M. Williams. 2019. Simulated performance of multi-year harvest regulation cycles for wild turkeys. Journal of Wildlife Management 83:1032–1042.

Stevens, B.S., J.R. Bence, W.F. Porter, and M.L. Jones. 2017. Identifying target reference points for harvesting assessment-limited wildlife populations: a case study. Ecological Applications 27:1916–1931.

Stevens, B.S., J.R. Bence, W.F. Porter, and C.J. Parent. 2017. Structural uncertainty limits generality of fall harvest strategies for wild turkeys. Journal of Wildlife Management 81:617–628.

*Herbst, S.J., B.S. Stevens, D.B. Hayes, and **P.A. Hanchin**. 2017. Influence of movement dynamics on walleye harvest management in intermixed fisheries in a chain of lakes. North American Journal of Fisheries Management 37:467–479.

*Herbst, S.J., B.S. Stevens, D.B. Hayes, and **P.A. Hanchin**. 2016. Estimating walleye (*Sander vitreus*) movement and fishing mortality using state-space models: implications for management of spatially structured populations. Canadian Journal of Fisheries and Aquatic Sciences 73:330–348.

Stevens, B.S., J.R. Bence, W.F. Porter, and C.J. Parent. 2016. Ecology matters: robustness and management tradeoffs for maximum harvests of wild turkeys. Proceedings of the National Wild Turkey Symposium 11:189–210.

Parent, C.J., B.S. Stevens, *A.C. Bowling, and W.F. Porter. 2016. Wild turkey harvest trends across the Midwest in the 21st century. Proceedings of the National Wild Turkey Symposium 11:211–223.

*Watkins, C.J., B.S. Stevens, M.C. Quist, **B.B. Shepard**, and **S.C. Ireland**. 2015. Patterns of fish assemblage structure and habitat use among main- and side-channel environments in the lower Kootenai River, Idaho. Transactions of the American Fisheries Society 144:1340–1355.

Stevens, B.S., and B. Dennis. 2013. Wildlife mortality from infrastructure collisions: statistical modeling of count data from carcass surveys. Ecology 94:2087–2096.

Stevens, B.S., D. Naugle, B. Dennis, **J.W. Connelly**, **T. Griffiths**, and K.P. Reese. 2013. Mapping sage-grouse fence collision risk: spatially explicit models to target conservation implementation. Wildlife Society Bulletin 37:409–415.

Stevens, B.S., **J.W. Connelly**, and K.P. Reese. 2012. Multi-scale assessment of greater sage-grouse fence collision risk as a function of site and broad scale factors. Journal of Wildlife Management 76:1370–1380.

Stevens, B.S., K.P. Reese, **J.W. Connelly**, and **D.D. Musil**. 2012. Greater sage-grouse and fences: does marking reduce collisions? Wildlife Society Bulletin 36:297–303.

Peer-Reviewed Publications (continued)

Stevens, B.S., K.P. Reese, and **J.W. Connelly**. 2011. Survival and detectability bias of avian fence collision surveys in sagebrush steppe. Journal of Wildlife Management 75:437–449.

Stevens, B.S., and **J.M. DuPont**. 2011. Summer use of side-channel thermal refugia by salmonids in the North Fork Coeur d'Alene River, Idaho. North American Journal of Fisheries Management 31:683–692.

Other Technical Publications (bold = external agency collaborator)

Stevens, B.S., and C.J. Parent. 2023. Development of hierarchical removal models to estimate abundance and population growth for white-tailed deer in North Dakota. Report for North Dakota Game and Fish Department. Idaho Cooperative Fish & Wildlife Research Unit, Moscow, Idaho.

Stevens, B.S., and C.J. Conway. 2021. Predicting Eastern Black Rail Habitat within Tidal Ecosystems of the Atlantic Coast Joint Venture Region. Report for U.S. Fish and Wildlife Service. Idaho Cooperative Fish & Wildlife Research Unit, Moscow, Idaho.

Stevens, B.S., and C.J. Conway. 2018. National habitat suitability for long-term persistence of marsh birds in the U.S. Report for U.S. Fish and Wildlife Service. Idaho Cooperative Fish & Wildlife Research Unit, Moscow, Idaho.

Stevens, B.S., and C.J. Conway. 2018. Using GAP data to predict range-wide habitat suitability and assess threats to long-term persistence of marsh birds in the U.S. Report for U.S. Geological Survey GAP Assessment Program. Idaho Cooperative Fish & Wildlife Research Unit, Moscow, Idaho.

Stevens, B.S., and C.J. Conway. 2018. Assessing the importance of wetland habitats on Department of Defense installations for the persistence of wetland-dependent birds in North America. Report for DoD Legacy Project #W9132T-12-2-0026. Idaho Cooperative Fish & Wildlife Research Unit, Moscow, Idaho.

Stevens, B.S., and C.J. Conway. 2017. Assessing the importance of wetland habitats on Department of Defense installations for the occurrence of marsh birds. Report for DoD Legacy Project #12-610. Idaho Cooperative Fish & Wildlife Research Unit, Moscow, Idaho.

Stevens, B.S., W.F. Porter, J.R. Bence, M.L. Jones, and **D.R. Luukkonen**. 2017. Population dynamics and management of wild turkeys in Michigan: linking monitoring, assessment, and harvest-policy evaluation. Report for Michigan Department of Natural Resources, Wildlife Division Project #1-26, Lansing, Michigan.

Other Technical Publications (continued)

Stevens, B.S. 2016. Structural uncertainty and the management of modern wild turkey harvests. Ph.D. Dissertation, Michigan State University, East Lansing, Michigan.

Stevens, B.S. 2012. Wildlife mortality from infrastructure collisions: statistical modeling of count data from carcass surveys. M.S. Thesis, University of Idaho, Moscow, Idaho.

Stevens, B.S. 2011. Impacts of fences on greater sage-grouse in Idaho: collision, mitigation, and spatial ecology. M.S. Thesis, University of Idaho, Moscow, Idaho.

Stevens, B.S., K.P. Reese, and **J.W. Connelly**. 2009. Estimating greater sage-grouse fence collision rates in breeding areas: preliminary results. Grouse News Newsletter of the IUCN/SSC-WPA Galliformes Specialist Group 38:24–29.

Stevens, B.S., and **J.M. DuPont**. 2007. Summer use of side channel habitat by fishes in the North Fork Coeur d'Alene River, Idaho. Panhandle Region Fisheries Management Report: Rivers and Streams Investigations. Idaho Department of Fish and Game, Coeur d'Alene, Idaho.

Research Grants Awarded

- Idaho Department of Fish and Game. 2020–2021. Space use and population dynamics of greater sage-grouse in response to catastrophic megafire ($119,250).
- Idaho Department of Fish and Game. 2020-2021. Population drivers for Columbian sharp-tailed grouse in Idaho ($35,250).
- U.S. Fish and Wildlife Service. 2019–2020. Predictive species distribution models for eastern black rails ($9,918).
- North Dakota Game and Fish Department. 2018–2020. Developing population assessment tools for white-tailed deer ($130,554).
- Michigan Department of Natural Resources, Wildlife Division. 2015–2017. Population dynamics and harvest management of wild turkeys ($131,500).
- Natural Resources Conservation Service. 2011. Estimating greater sage-grouse fence collision rates ($42,491).
- University of Idaho Student Grants Program. 2009. Factors influencing carcass detection and scavenging in sagebrush steppe ($4,709).

Quantitative Skills and Professional Development

- Thesis-option M.S. degree in statistics provided knowledge of theory and application for: frequentist and Bayesian statistics, hierarchical models, population estimation and modeling, occupancy and other species distribution models, generalized linear mixed models, maximum-likelihood and Bayesian estimation, information-theoretic and Bayesian model selection, computer-intensive statistical methods, spatial analyses in GIS, stochastic simulation and risk assessment, decision analyses and structured decision making.

- Proficient use of R, JAGS, OpenBUGS, MARK, ESRI and Microsoft software.
- Familiar with statistical software SAS, NIMBLE, and the Shiny R package.
- Certificate courses at Michigan State University: R Essentials for Natural Resource Professionals, Maximum Likelihood Estimation.
- Statistical Workshops at Michigan State University (1/2 day): Spatial Regression in R, Model Selection and Averaging, Introduction to High Performance Computing.
- Conference Workshops (1 day): Using R as a GIS Platform, Multi-Species Occupancy Models, Data Management for Long-Term Studies, Survival Analysis.

Outreach

Workshops:
- Southeast Association of Fish and Wildlife Agencies Wild Turkey Working Group (2018): Invited speaker and participant in panel discussion on development of adaptive harvest management programs for wild turkeys.
- Michigan Wild Turkey Structured Decision Making Project (2015–2017): Leader of stakeholder group representing 12 organizations and 2 research centers with interests in wild turkey conservation, management, and research. Co-facilitator of 5 structured decision making workshops and leader of collaborative modeling team.

Presentations:
- Effects of the Grassy Ridge fire on space use and demography of greater sage-grouse. Webinar for Idaho Department of Fish and Game. June 2022, Moscow, ID.
- Predictive multi-scale resource selection models for greater sage-grouse in eastern Idaho. Webinar for Bureau of Land Management and Idaho Department of Fish and Game. October 2021, Moscow, ID.
- Predictive distribution models for eastern black rails: analyses and results. Webinar for the Eastern Black Rail Working Group. July 2020, Moscow, ID.
- Predicting breeding habitat for marsh birds: models to facilitate spatial conservation planning. Webinar for the U.S. Fish and Wildlife Service. June 2019, Moscow, ID.
- Building predictive distribution models for black rails. Webinar for the Eastern Black Rail Working Group. May 2019, Moscow, ID.
- Predictive distribution models for marsh birds: occupancy and spatial modeling to facilitate habitat conservation. Webinar for the U.S. Department of Defense Legacy Program. February 2019, Moscow, ID.
- Dynamics and management of wild turkeys in Michigan. Oral testimony to the Michigan Natural Resources Commission. October 2016, Lansing, MI.

Awards and Scholarships

- 2017 Student Travel Grant, The Wildlife Society
- 2017 Best Student Presentation Award, Michigan Chapter of The Wildlife Society (co-author with undergraduate student S. Manning)
- 2015 Research Enhancement Fellowship, Michigan State University

Awards and Scholarships (continued)

- 2015 Travel Award, Fisheries and Wildlife, Michigan State University
- 2015 Special Recognition Award, Fisheries and Wildlife, Michigan State University
- 2014 Best Student Presentation Award, Michigan Chapter of the American Fisheries Society (co-author with graduate student S. Herbst)
- 2012 Travel Award, Biometrics Working Group of The Wildlife Society
- 2011 Travel Award, University of Idaho Graduate Student Association
- 2011 Best Student Presentation Award, Idaho Chapter of The Wildlife Society
- 2011 Dale Everson Fellowship, Department of Statistics at University of Idaho
- 2010 Shikar Safari Club International Scholarship
- 2007 75th Anniversary Scholarship, College of Natural Resources, University of Idaho
- 2006 & 2007 Monnett Scholarship, College of Natural Resources at University of Idaho
- 2006 Outstanding Graduate Award for Wildlife Science, Hocking College
- 2005 & 2006 Presidents List Award, Hocking College

Teaching and Mentoring

- R Essentials for Natural Resource Professionals Online Course, Michigan State University: Lead Instructor (2012–2014)
- Ecological Problem Solving, Michigan State University: Guest Lecturer (2014)
- Quantitative Mentoring of Graduate and Undergraduate Students
  - Eamon Harrity (2017–2021)
    - Used hierarchical models and Google Earth Engine to develop large-scale habitat suitability model for Yuma Ridgway's Rail.
  - Nolan Helmstetter (2018–2021)
    - Developed range-wide species distribution models for northern Idaho ground squirrels, assessed different statistical methods for developing spatially-transferable models to inform   species conservation.
  - Ian Riley (2018–2020)
    - Assessed factors affecting visual and auditory detection of sage-grouse leks.
  - Jennifer Smith (2016–2020)
    - Used simulation to assess performance of spatial capture-recapture methods for estimating abundance of black bears at landscape scales.
  - Sydney Manning (2014–2018)
    - Used simulation to assess harvest management strategies for wild turkeys.
  - Seth Herbst (2013–2016)
    - Developed hierarchical population models for assessing walleye movement and fishing mortality, used simulation to assess performance of harvest management.
  - Carson Watkins (2013–2015)
    - Used mixed models to assess distribution and habitat use of riverine fish.

Professional Affiliations, Service, and Leadership

- The Wildlife Society
  - National Chapter (2005–Present)
    - Associate Certified Wildlife Biologist (2012–Present)
    - Biometrics Working Group (2012–Present)
  - Idaho Chapter (2017–Present)
    - Executive Board service: Past President (2022–2023), President (2021–2022), President Elect (2020–2021), Vice President (2019–2020)
  - Michigan Chapter (2012–2016)
    - Website administrator (2013–2016)
  - University of Idaho Student Chapter (2006–2008)
    - President (2007–2008)
  - Hocking College Student Chapter (2004–2006)
    - Treasurer (2005–2006)
- Other Volunteer Service
  - Symposia organizer: State-Space Models for Fish and Wildlife Populations, Midwest Fish and Wildlife Conference (2016)
  - Big game check stations, Idaho Department of Fish and Game (2008)
  - Certified hunter safety instructor, Ohio Division of Wildlife (2006)
- Manuscript Reviews
  - Animal Behaviour, Canadian Journal of Fisheries and Aquatic Sciences, Ecological Applications, Ecosphere, Frontiers in Ecology and the Environment, Journal of Field Ornithology, Ornithological Applications, Proceedings of the National Wild Turkey Symposium, Proceedings of the American Woodcock Symposium, Wildlife Society Bulletin.

Selected Presentations (* = invited, >40 contributed presentations omitted)

*Stevens, B.S., and C.J. Conway. Large-scale distribution models for optimal prediction of eastern black rail habitat suitability. Oral presentation at the annual conference of The Wildlife Society, November 2021, virtual.

Stevens, B.S., S. Roberts, D. Englestead, and C.J. Conway. Functional responses in greater sage-grouse habitat selection in response to large-scale disturbance. Oral presentation at the 32nd Western Agencies Sage and Columbian Sharp-tailed Grouse Workshop, June 2021, virtual.

Stevens, B.S., C.J. Conway, J. Knetter, P. Donnelly, and S. Roberts. Abundance and productivity of Columbian sharp-tailed grouse in Idaho: effects of habitat, weather, and disturbance. Oral presentation at the 32nd Western Agencies Sage and Columbian Sharp-tailed Grouse Workshop, June 2021, virtual.

*Conway, C.J., and B.S. Stevens. Marsh bird monitoring and data management for North America. Oral presentation at the Atlantic Flyway Council meeting, February 2019, Kitty Hawk, North Carolina.

Selected Presentations (continued)

Stevens, B.S., and C.J. Conway. Predicting black rail breeding habitat: range-wide models to identify anthropogenic threats and facilitate conservation. Oral presentation at the annual meeting of The Wildlife Society, October 2019, Reno, Nevada.

Stevens, B.S., and C.J. Conway. Spatial models to facilitate broad-scale conservation of breeding habitat for secretive marsh birds. Oral presentation at the annual meeting of the American Ornithological Society, June 2019, Anchorage, Alaska.

*Stevens, B.S., J.R. Bence, M.L. Jones, W.F. Porter, D.R. Luukkonen, C.A. Stewart, and D.M. Williams. Stakeholders, statistics, and structured decision making: building a foundation for adaptive management of wild turkeys in Michigan. Oral presentation at the Southeast Association of Fish and Wildlife Agencies Wild Turkey Working Group Meeting, May 2018, Bismarck, Arkansas.

*Stevens, B.S., J.R. Bence, W.F. Porter, and M.L. Jones. Developing robust fall harvest targets for managing assessment-limited wild turkey populations. Oral presentation at the Southeast Association of Fish and Wildlife Agencies Wild Turkey Working Group Meeting, May 2018, Bismarck, Arkansas.

*Stevens, B.S., and C.J. Conway. Estimating animal abundance with removal models. Oral presentation to the North Dakota Game and Fish Department, January 2018, Bismarck, North Dakota.

*Stevens, B.S., M.L. Jones, W.F. Porter, J.R. Bence, C.A. Stewart, and D.R. Luukkonen. Using structured decision making to inform wild turkey management. Oral presentation at the annual meeting of the Michigan Department of Natural Resources, Wildlife Division, August 2015, Roscommon, Michigan.

*Stevens, B.S., K.P. Reese, J.W. Connelly, and D. Musil. Quantifying collision and effectiveness of fence marking mitigation for greater sage-grouse. Oral presentation at the Society for Range Management meeting, February 2011, Billings, Montana.