Curriculum Vitae

Perry J. Williams

Colorado Cooperative Fish and Wildlife Research Unit
203 J.V.K. Wagar Building
1484 Campus Delivery
Colorado State University
Fort Collins, Colorado 80523

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Education

Ph.D. Colorado State University, 2016
Colorado Cooperative Fish and Wildlife Research Unit
Department of Fish, Wildlife, and Conservation Biology
Adviser: William Kendall
GPA: 4.0

M.S. Colorado State University, 2015
Department of Statistics
Adviser: Mevin Hooten

M.S. University of Minnesota–Twin Cities, 2008
Department of Fish, Wildlife, and Conservation Biology
Plan: Natural Resources Science and Management
Sub-Plan: Wildlife Ecology and Management
Adviser: R. J. Gutiérrez

B.A. Saint Olaf College, 2006, *Cum laude*
Major: Biology (with distinction)
Concentration: Environmental Studies
Adviser: Eugene Bakko

Employment

Assistant Professor
Department of Natural Resources & Environmental Science
University of Nevada, Reno
1664 N Virginia St, Reno NV
Starting Jul 2018

Post-Doctoral Research Fellow
Colorado Cooperative Fish and Wildlife Research Unit
Department of Statistics
Department of Fish, Wildlife, and Conservation Biology
Colorado State University
Post-doc adviser: Mevin Hooten
Jan 2016–Jun 2018

Instructor
Department of Fish, Wildlife, and Conservation Biology
Colorado State University
Aug 2015–Dec 2015

Graduate Research Assistant
Colorado Cooperative Fish and Wildlife Research Unit
Department of Fish, Wildlife, and Conservation Biology
Colorado State University
Aug 2011–Aug 2015

Graduate Teaching Assistant
Department of Statistics
Colorado State University
Jan 2015–May 2015

Wildlife Biologist (GS 11)
U. S. Fish and Wildlife Service
Natural Resource Program Center
Oct 2011–present (intermittent)

Wildlife Biologist (GS 9)
U. S. Fish and Wildlife Service
Big Oaks National Wildlife Refuge
Jan 2009–Oct 2011

Wildlife Biologist Trainee (Student Career Experience Program; GS 5)
U. S. Fish and Wildlife Service
Fergus Falls Wetland Management District
Jan–Dec 2008

Graduate Research Assistant
Department of Fish, Wildlife, and Conservation Biology
University of Minnesota–Twin Cities
Aug 2006–Dec 2008

Research Experience for Undergraduates (REU) student
Department of Biology
Kansas State University
Jun–Aug 2005

Publications

Journal Articles

Submitted

Williams, P. J., M. B. Hooten, G. G. Esslinger, J. N. Womble, J. L. Bodkin, and M. R. Bower. *In Revision.* The rise of an apex predator following deglaciation. *Diversity and Distributions.*

Williams, P. J., W. L. Kendall, M. B. Hooten, J. A. Schmutz, and C. R. Ely. *In Review.* Seasonal integrated population models provide deeper understanding of demographic processes than annual models.

Williams, P. J., W. L. Kendall, and M. B. Hooten. *In Review.* Selecting ecological models using multi-objective optimization. *Ecology.*

Levin, E., O. Mass, A. Dolev, R. Drori, **P. J. Williams**, and P. F. Doherty, Jr. *In Revision.* Adaptive value of pelage coloration for feral cats (*Felis catus*) in Mediterranean woodlands. *Peer J.*

Published

Conn, P. B., D. S. Johnson, **P. J. Williams**, S. R. Melin, and M. B. Hooten. *In Press.* A guide to Bayesian model checking for ecologists. *Ecological Monographs.*

Williams, P. J., M. B. Hooten, G. G. Esslinger, J. N. Womble, and M. R. Bower. *In Press.* Monitoring dynamic spatio-temporal ecological processes optimally. *Ecology.*

Williams, P. J., M. B. Hooten, J. N. Womble, and M. R. Bower. *In Press.* Estimating occupancy and abundance using aerial images with imperfect detection. *Methods in Ecology and Evolution* DOI:10.1111/2041-210X.12815.

Williams, P. J., M. B. Hooten, J. N. Womble, G. G. Esslinger, and M. R. Bower. 2017. An integrated data model to estimate spatio-temporal occupancy, abundance, and colonization dynamics. *Ecology* 98:328–336.

Hefley, T. J., K. M. Broms, B. M. Brost, F. E. Buderman, S. L. Kay, H. R. Scharf, J. R. Tipton, **P. J. Williams**, M. B. Hooten. 2017. The basis function approach to modeling autocorrelation in ecological data. *Ecology* 98:632–646.

Williams, P. J., and W. L. Kendall. 2017. A guide to multi-objective optimization for ecologists with an application to cackling goose management. *Ecological Modelling* 343:54–67.

Williams, P. J. and M. B. Hooten. Combining statistical inference and decisions in ecology. 2016. *Ecological Applications* 26:1930–1942.

Crimmins, S. M., P. C. McKann, J. R. Robb, J. P. Lewis, T. Vanosdol, B.A. Walker, **P. J. Williams** and W. E. Thogmartin. 2016. Factors affecting Henslow's sparrow (*Ammodramus henslowii*) nest survival in southern Indiana. *Wilson Journal of Ornithology* 128.

Vigil, E., M. K. R. Christianson, J. M. Lepak, and **P. J. Williams**. 2015. Temperature effects on hatching and viability of juvenile gill lice; *Salmincola californiensis*. *Journal of Fish Diseases* doi:10.1111/jfd.12422.

Gerber, B. D., **P. J. Williams**, L. L. Bailey. 2014. Primates and Cameras: Non-invasive sampling to make population-level inferences while accounting for imperfect detection. *International Journal of Primatology* 35:841–858.

Williams, P. J.., S. H. Whitmore, R. J. Gutiérrez. 2014. Use of private lands for foraging by California spotted owls in the central Sierra Nevada. *Wildlife Society Bulletin* 38:705-709.

Lesmeister, D. B., S. Blomquist, E. V. Lonsdorf, D. Wood, **P. J. Williams**, B. Pendley, K. E. Mangan, B. A. Walker. 2014. Forest invasive adaptive management on National Wildlife Refuge Lands in the central hardwood region. Proceedings of the 19th Central Hardwood Forest Conference 19:22–35.

Williams, P. J., N. J. Engbrecht, J. R. Robb, V. C. K. Terrell, and M. J. Lannoo. 2013. Surveying a threatened amphibian species through a narrow detection window. *Copiea* 2013:552–561.

Engbrecht, N. J., M. J. Lannoo, **P. J. Williams**, J. R. Robb, T. Gerardot,. D. R. Karns, M. Lodato. 2013. Is there hope for the Hoosier Frog? An update on the status of Crawfish Frogs (*Lithobates areolatus*) in Indiana, with recommendations for their conservation. *Proceedings of the Indiana Academy of Science* 121:147–157.

Heemeyer, J. L., **P. J. Williams**, M. J. Lannoo. 2012. Obligate Crayfish Burrow Use and Core Habitat Requirements of Crawfish Frogs. *Journal of Wildlife Management* 76:1081–1091.

Williams, P. J., J. R. Robb, and D. R. Karns. 2012. Habitat selection by crawfish frogs (*Lithobates areolatus*) in a large mixed grassland/forest habitat. *Journal of Herpetology* 46:682–688.

Williams, P. J., J. R. Robb, and D. R. Karns. 2012. Occupancy dynamics of breeding crawfish frogs in southeastern Indiana. *Wildlife Society Bulletin* 36:350–357.

Williams, P. J., J. R. Robb, R. H. Kappler, T. E Piening, and D. R. Karns. 2012. Intraspecific density dependence in larval development of the crawfish frog, Lithobates areolatus. *Herpetological Review* 43:36–38.

Williams, P. J., R. J. Gutiérrez, S. Whitmore. 2011. Home range and habitat selection of the spotted owl in the central Sierra Nevada. *Journal of Wildlife Management* 75:333–343.

Hoffman, A. S., J. Heemeyer, **P. J. Williams**, J. R. Robb, D. R. Karns, and M. J. Lannoo. 2010. Strong site fidelity and a variety of imaging techniques reveal activity patterns in crawfish frogs (Lithobates areolatus), a species of conservation concern. *BioScience* 60:829–834.

Schook, D. M., M. D. Collins, W. E. Jensen, **P. J. Williams**, N. E. Bader, and T. H. Parker. 2008. Geographic patterns of song similarity in the Dickcissel. *The Auk* 125:953–964.

Theses and Extension Publications

Williams, P. J. 2017. Monitoring the distribution and abundance of sea otters. Methods in Ecology and Evolution Blog. (Link)

Womble, J. N., **P. J. Williams**, M. B. Hooten, L. F. Taylor-Thomas, W. Johnson, and M. R. Bower. 2017. Protocol for monitoring the abundance and spatial distribution of sea otters in Glacier Bay National Park & Preserve, Alaska. National Park Service, Natural Resource Report.

Williams, P. J. and M. B. Hooten. 2017. The extraordinary return of sea otters to Glacier Bay, The Conversation. (Link)

Williams, P. J. 2017. Monitoring the sea otters in Glacier Bay National Park, The Wildlife Management Institute. (Link)

Williams, P. J. 2015. Methods for incorporating population dynamics and decision theory in cackling goose management. Ph.D. Dissertation, Colorado State University. Fort Collins, CO.

Williams, P. J. 2015. Combining statistical inference and decisions in ecology. M.S. Thesis, Colorado State University. Fort Collins, CO.

Williams, P. J. 2015. Structured decision making for setting the population objective and management trigger points of cackling geese: report to the Pacific Flyway, cackling goose sub-committee.

Williams, P. J. 2008. Home range and foraging habitat selection of spotted owls in the central Sierra Nevada. M.S. Thesis, University of Minnesota. St. Paul, MN.

Gutiérrez, R. J., S. Whitmore, M. E. Seamans, G. Zimmerman, **P. J. Williams**, and P. Stine 2008. Acute effects of canopy reduction on California spotted owls: challenges for adaptive management. Technical Report to USFS.

Presentations

Invited

Williams, P. J., M. B. Hooten, J. N. Womble, G. G. Esslinger, and M. R. Bower. Modeling and monitoring sea otters in Glacier Bay. University of Alaska Fairbanks, College of Fisheries and Ocean Sciences, Juneau, AK. Sep 2017.

Williams, P. J., M. B. Hooten, J. N. Womble, G. G. Esslinger, and M. R. Bower. A new monitoring program for sea otters in Glacier Bay. Glacier Bay National Park, Gustavus, AK. Sep 2017

Williams, P. J., M. B. Hooten, J. N. Womble, G. G. Esslinger, and M. R. Bower. Optimal dynamic sampling of a spreading population. Joint Statistical Meeting (JSM), Baltimore, MD. Aug 2017.

Williams, P. J., M. B. Hooten, J. N. Womble, G. G. Esslinger, and M. R. Bower. Monitoring dynamic spatio-temporal ecological systems optimally: a case study using sea otters in Glacier Bay, Alaska. NOAA Seminar Series, Silver Spring, MD. Aug 2017.

Williams, P. J., M. B. Hooten, J. N. Womble, G. G. Esslinger, and M. R. Bower. Monitoring dynamic spatio-temporal processes optimally. Department of Statistics, Colorado State University, Fort Collins, CO. Jul 2017.

Williams, P. J., M. B. Hooten, J. N. Womble, G. G. Esslinger, and M. R. Bower. Modeling and monitoring sea otters in Glacier Bay, Alaska. Colorado cooperative fish and wildlife research unit–coordinating meeting, Fort Collins, CO. Mar 2017.

Womble, J. N., **Williams, P. J.**, M. B. Hooten, G. G. Esslinger, M. R. Bower, and H. Coletti. Contemporary models and aerial photographic monitoring methods for a new vital sign: sea otters in Glacier Bay National Park. Centennial Science and Stewardship Symposium, Fairbanks, AK. Oct 2016.

Williams, P. J., M. B. Hooten, J. N. Womble, G. G. Esslinger, and M. R. Bower. Spatio-temporal monitoring and modeling of sea otters in Glacier Bay: past and future. Glacier Bay National Park, Gustavus, AK. Jun 2016

Robb, J. R., B. A. Walker, **P. J. Williams**, and T. A. Gerardot. Management of crawfish frogs (*Lithobates areolatus*) based on experimental pond manipulation, occupancy modeling, and use of habitat at Big Oaks National Wildlife Refuge in southeastern Indiana. PARC Partners on Habitat Symposium, SSAR Annual Meeting, Lawrence, KS. Jul 2015.

Williams, P. J. Population dynamics and management of cackling geese. The Pacific Flyway Council Meeting, San Diego, CA. Dec 2014.

Williams, P. J. A decision tool for managing cackling geese across their range. Adaptive Management Conference Series, Fort Collins, CO. May 2014.

Williams, P. J. Adaptive management of cackling geese. Pacific Flyway Council Meeting, Reno, NV. Jul 2013.

Williams, P. J. A comprehensive research program for the crawfish frog - A Species of Conservation Concern. Hanover College, Biological Seminar Series. Hanover, IN. Sep 2010.

Williams, P. J. The spotted owl: a quarter century of controversy and contributions to wildlife science. Invited talk, Big Oaks Conservation Society, Biological Seminar Series. Madison, IN. Mar 2010.

Williams, P. J. Habitat use by the northern crawfish frog. Southeastern Partners in Amphibian and Reptile Conservation Annual Meeting. Altoona, FL. Feb 2010.

Williams, P. J. Activity patterns by the northern crawfish frog. Southeastern Partners in Amphibian and Reptile Conservation Annual Meeting. Altoona, FL. Feb 2010.

Williams, P. J. Home range and habitat selection of the California spotted owl in the central Sierra Nevada. University of California Berkeley, Blodgett Forest Experimental Research Station. Georgetown, CA. Aug 2007.

Contributed

J. N. Womble, **Williams, P. J.**, M. B. Hooten, G. G. Esslinger, L. Taylor-Thomas, M. R. Bower, and H. Coletti. Combining contemporary spatiotemporal models and aerial photographic techniques to estimate sea otter colonization and abundance in Glacier Bay National Park, Alaska. Society for Marine Mammalogy–22nd Biennial Conference on the Biology of Marine Mammals, Halifax, Nova Scotia, Canada. Oct 2017.

Williams, P. J., M. B. Hooten, J. N. Womble, G. G. Esslinger, and M. R. Bower. Optimal dynamic sampling of a spreading population. The Wildlife Society Annual Conference, Albuquerque, NM. Sep 2017.

Williams, P. J., M. B. Hooten, J. N. Womble, G. G. Esslinger, and M. R. Bower. A spatio-temporal model to infer colonization dynamics, and inform monitoring of sea otters in Glacier Bay, Alaska. The Wildlife Society Annual Conference, Raleigh, NC. Oct 2016.

Williams, P. J., M. B. Hooten, J. N. Womble, G. G. Esslinger, and M. R. Bower. A spatio-temporal model for ecological colonizations. Joint Statistical Meeting (JSM), Chicago, IL. Aug 2016.

Williams, P. J., M. B. Hooten, J. N. Womble, G. G. Esslinger, and M. R. Bower. A spatio-temporal model to infer colonization dynamics, of sea otters in Glacier Bay, Alaska. International Statistical Ecology Conference (ISEC), Seattle, WA. Jul 2016.

Williams, P. J. Combining statistical inference and decisions in ecology. Defense Seminar, Department of Statistics, Colorado State University, Fort Collins, CO. Oct 2015.

Williams, P. J. Incorporating population dynamics, multi-objective optimization, and decision theory to inform wildlife management: a case study using cackling geese. Defense Seminar, Department of Fish, Wildlife, and Conservation Biology, Colorado State University, Fort Collins, CO. Mar 2015.

Williams, P. J., C. R. Ely, W. L. Kendall, M. B. Hooten, and J. A. Schmutz. Population dynamics and management of cackling geese. The Wildlife Society Annual Conference, Pittsburgh, PA. Oct 2014.

Lesmeister, D. B., S. M. Blomquist, E. V. Lonsdorf, D. Wood, **P. J. Williams**, B. Pendley, K. Mangan, and B. A. Walker. Adaptive management of invasive forest plants. Midwest Invasive Plants Council. Dec 2011.

Williams, P. J. Merging quail management with grassland songbirds. Bobwhite Quail Management Workshop - Indiana Chapter of the Wildlife Society. Madison, IN. Sep 2010.

Williams, P. J. Henslow's sparrow response to prescribed fire in southeastern Indiana. The Indiana Chapter of the Wildlife Society. Terre Haute, IN. Apr 2010.

Williams, P. J. Burrow selection by crawfish frogs (*Lithobates areolatus*) in southeastern Indiana. Indiana Academy of Science. Kokomo, IN. Oct 2009.

Williams, P. J. Activity patterns of the crawfish frog (*Lithobates areolatus*) at crayfish burrows in Big Oaks National Wildlife Refuge, southeastern Indiana. Indiana Academy of Science. Kokomo, IN. Oct 2009.

Williams, P. J. Home range and habitat selection of the California Spotted Owl in the central Sierra Nevada. Thesis Defense Seminar, University of Minnesota. Saint Paul, MN. Dec 2008.

Williams, P. J. Geographic song patterns of the dickcissel (*Spiza americana*). Honors Presentation, Saint Olaf College, Northfield, MN. Dec 2005.

Williams, P. J. Local song dialects of the dickcissel (*Spiza americana*). Kansas State University, Manhattan, KS. Aug 2005.

Grants

National Park Service ($200,000), co-PI. 2015-2017. *Optimal spatio-temporal monitoring designs for sea otters in Glacier Bay.*

National Park Service ($40,000), co-PI. 2017-2018. *Refinement, testing, and documentation of methods for monitoring sea otter spatial distribution and abundance in Glacier Bay National Park and Katmai National Park.*

Teaching

Instructor

FW 471 (Capstone Course: Wildlife Data Collection and Analysis), Fall 2015
students: 28, lecture hours per week: 8, total hours per week: 40
Department of Fish, Wildlife, and Conservation Biology, Colorado State University.

Graduate Teaching Assistant

STAT 201 (General Statistics), Spring 2015
students: 200+, lecture hours per week: 2, total hours per week: 20
Department of Statistics, Colorado State University.

STAT 301 (Introduction to Statistical Methods), Spring 2015
students: 20, lecture hours per week: 0, total hours per week: 5
Department of Statistics, Colorado State University.

Guest Lectures

STAT 673 (Hierarchical Modeling in Ecology), 2 lectures, Fall 2017
Students: 20, (2 hrs 30 min)
Department of Statistics, Colorado State University.

FW 696 (Graduate School Orientation), Fall 2017
Students: 11, (1 hr 15 min)
Department of Fish, Wildlife, and Conservation Biology, Colorado State University.

FW 475 (Conservation Decision Analysis), Spring 2015
Students: 15, (1 hr 15 min)
Department of Fish, Wildlife, and Conservation Biology, Colorado State University.

FW 551 (Design of Fish and Wildlife Studies), Fall 2014
Students: 10, (2 hours)
Department of Fish, Wildlife, and Conservation Biology, Colorado State University.

Workshops and Short Courses

Spatio-temporal dynamic statistical modeling in practice, Western North American Region (WNAR) of The International Biometric Society, Santa Fe, NM, 1 day, 2017. (Organizer and Instructor).

Beginner R Workshop, The Wildlife Society Annual Meeting, Albuquerque, NM, 1 day, 2017. (Organizer and Instructor).

Building Capacity in Bayesian Modeling for Ecologists, National Science Foundation, Fort Collins, CO, 10 days, 2016. (Teaching Assistant).

Bayesian Decision Theory and Model Selection, International Statistical Ecology Conference (ISEC), Seattle, WA, 1 day, 2016. (Organizer and Instructor).

R Workshop, Colorado State University, Fort Collins, CO, 1 day, 2016. (Organizer and Instructor).

R for Wildlife Biologists, Annual Meeting of the Central Mountains and Plains Section of The Wildlife Society, Steamboat Springs, CO, 1 day, 2016. (Organizer and Instructor).

Emacs tutorial, Colorado State University, Fort Collins, CO, 1 day, 2014. (Organizer and Instructor).

Introduction to Structured Decision Making, National Conservation Training Center, Shepherdstown, WV, 5 days, 2012. (Instructor).

Journal Referee

Condor

Copeia

Ecological Applications

Ecology

Herpetological Conservation and Biology

Journal of Agricultural, Biological, and Environmental Statistics

Methods in Ecology and Evolution

The Journal of Raptor Research

The Journal of Wildlife Management

PLoS ONE

The Wildlife Society Bulletin

Professional Affiliations

American Statistical Association

- Section on Statistics and the Environment (ENVR)

Society for Conservation Biology

The Wildlife Society

- TWS-Biometrics Working Group

Service Activities / Partnerships

Researcher/Member, STATMOS: statistical methods for atmospheric & oceanic sciences. (Link)

Nominated, The Wildlife Society, Biometrics Working Group Board Member, 2017.

Symposium organizor, *Optimal monitoring for wildlife biologists*, *Submitted to:* The Biometrics Working Group section of The Wildlife Society Annual Meeting, Cleveland, OH. Sep 2018.

Session Chair, Ecology and Environmental Policy Symposium, Environmental Statistics (ENVR) section of Joint Statistical Meeting (JSM), Baltimore, MD. Aug 2017.

Invited participant, Powell Center Working Group: Elucidating mechanisms underlying amphibian declines in North America using hierarchical spatial models. Fort Collins, CO. Nov 2014.

Invited participant, Powell Center Working Group: Modeling species response to environmental change: development of integrated, scalable Bayesian models of population persistence. Fort Collins, CO. Sep 2014.

Leader, USFWS Eastern Broadleaf Forest Biological Network, 2009–2011.

Wildlife Recovery and Reconnaissance, Deepwater Horizon/ BP oil spill, Dennis Pass, LA. Jul–Aug 2010.

Project Committee, Southern Indiana Cooperative Weed Management Area. Feb 2009–Aug 2011.

Awards/ Honors

Eugene Decker Fellowship, Colorado State University, 2015.

The Wildlife Society, Biometrics Working Group *Student Travel Grant*, 2014.

Department of the Interior *STAR Award*, 2011.

Department of the Interior *STAR Award*, 2010.

Finalist, U.S. Fish and Wildlife Service - *Biologist of the Year*, 2010.

Cum laude, Saint Olaf College. 2006

Distinction in Biology, Saint Olaf College. 2006

Student Naturalist, Saint Olaf College, 2005–2006

Dean's list, Saint Olaf College. 2004–2006

Additional Information

Proficient in: Linux, OS X, Windows, R, LaTeX, Emacs, C++, MatLAB, JAGS, ArcMap.

Last updated: February 7, 2018

Professional References

Dr. Mevin B. Hooten (mevin.hooten@colostate.edu)
Assistant Unit Leader
U.S. Geological Survey–Colorado Cooperative Fish and Wildlife Research Unit
Associate Professor
Department of Fish, Wildlife, and Conservation Biology
Department of Statistics
Colorado State University

Dr. William L. Kendall (william.kendall@colostate.edu)
Assistant Unit Leader
U.S. Geological Survey–Colorado Cooperative Fish and Wildlife Research Unit
Assistant Professor
Department of Fish, Wildlife, and Conservation Biology
Colorado State University

Dr. R. J. (Rocky) Gutiérrez (gutie012@umn.edu)
Professor Emeritus and former Gordon Gullion Endowed Chair
Department of Fish, Wildlife, and Conservation Biology
University of Minnesota