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Engineering & Scientific Consulting

Victoria Prescott, Ph.D.

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Professional Profile

Dr. Prescott is an ecologist with expertise in assessing methods used to study the impacts of anthropogenic stressors such as climate change and habitat loss on biodiversity. She also has experience integrating fieldwork with data science techniques to model complex systems. She has worked with a variety of environmental data including satellite and climate data as well as a variety of aquatic and terrestrial biodiversity data. As a postdoctoral researcher, she critically examined the accuracy of a risk assessment tool used by resource agencies that predicts species distributions under various climate change scenarios, comparing the outputs of the tool to outputs generated using machine learning methods. This research focused on freshwater species from a variety of taxonomic groups inhabiting different geographical areas of the world, including Asian clam, silver carp, rusty crayfish, Cuban tree frog, and water hyacinth. Her research concluded this tool prioritizes ease of use over model accuracy, potentially resulting in misinformed policy decisions or resource allocation.

Dr. Prescott's dissertation research combined survey data with satellite imagery data to assess odonate (dragonfly and damselfly) diversity across an urban-rural landscape and to identify the environmental factors that influence community composition. Utilizing a bird survey technique to conduct the odonate surveys, her research provided researchers with a new method for surveying dragonflies. Further, Dr. Prescott has leveraged satellite imagery data to identify important habitat corridors that maintain gene flow between wolf spider populations across an urban landscape. She has also modeled extinction risk in odonate species found throughout the United States by identifying ecological traits (e.g., geographic range size and length of flight period) that correlate with NatureServe's global conservation status.

Having obtained her Project Management Professional certification in December 2020, Dr. Prescott uses her skillset to provide high quality, timely deliverables to clients. She has supported both federal and industry clients in developing robust data collection processes and data pipelines to meet scientific business needs.

Academic Credentials & Professional Honors

Ph.D., University of Louisville, 2016

B.S., Biology, Baylor University, 2011

Licenses and Certifications

Project Management Professional (PMP)

Prior Experience

Lead Scientist, Booz Allen Hamilton, 2019–2023

Statistical Analyst II, Biostat Solutions Inc, 2018–2019

Postdoctoral Fellow, Loyola University Chicago, 2017–2018

Publications

Prescott, V.A. and P.K. Eason (2018) Lentic and lotic odonate communities and the factors that influence them in urban versus rural landscapes. Urban Ecosystems, 21:737-750

Presentations

Prescott VA, Keller RP. Combining Invasive Species Risk Assessments with Climate Change Scenarios to Predict Future Invaders in the Great Lakes. Oral presentation, Midwest Fish and Wildlife Conference, Milwaukee, WI, 2018.

Prescott VA, Keller RP. Climate Change and Ecological Risk Assessment For Predicting Future Great Lakes Crayfish Invasions. Oral presentation, 61st Annual Conference on Great Lakes Research, Toronto, Ontario, 2018.

Prescott VA, Keller RP. Risk assessment combined with climate change scenarios to predict future invaders in Lake Michigan. Oral presentation, State of Lake Michigan Conference, Green Bay, WI, 2017

Prescott VA, Eason PK. Determinants of odonate diversity in ponds versus streams across an urban landscape and the ecological traits that make them resilient to extinction. Oral presentation, Invited seminar at Campbellsville University, Campbellsville, KY, 2016.

Prescott VA, Eason PK. Dragonflies of pond and stream communities respond similarly to urbanization. Oral presentation, 101st Annual Meeting Kentucky Academy of Science, Highland Heights, KY, 2015.

Prescott VA, Eason PK. Pond and stream dragonfly communities respond differently to urban development. Poster presentation, Midwest Ecology and Evolution Conference, Bloomington, IN, 2015.

Prescott VA, Eason PK. Dragonfly diversity across an urban-rural gradient: Odonates in ponds and streams respond differently to altered habitats. Poster presentation, 100th Annual Meeting Kentucky Academy of Science, Lexington, KY, 2014.

Project Experience

· Supported the modernization of scientific data pipelines for federal clients by tracking project timelines, monitoring risks and dependencies, and forecasting monthly project costs.

· Integrated data from across client programs to uncover actionable insights and to support data-driven decision-making; Led teams of scientists, and business analysts to develop robust data architectures for federal clients; Provided guidance on data collection methodologies and best practices to eliminate redundant data collection procedures, enhance data quality, and streamline business processes.

· Collected and organized data from various paper and digital sources of laboratory information to identify trends across quality control analyses.

· Assessed impacts of climate change on aquatic species invasions across three different modeling tools including an ArcGIS package developed by U.S. Fish and Wildlife and two machine learning methods, boosted regression trees and maximum entropy.

· Developed 450 species distribution maps based on bioclimatic rasters from Worldclim.org for the current climate and climate projections for 2050 and 2070; Collected species occurrence data from an online database via an R-based application programming interface; Developed models using occurrence and pseudo-absence points obtained from local adaptive convex hulls.

· Assessed impact of land use on odonate community composition and species richness across an urban-rural gradient using CCA, NMDS, and PERMANOVA analyses; Utilized data from the National Land Cover Database 2011 to obtain detailed descriptions of environmental parameters.

· Examined effects of urban landscape on rabid wolf spider genetic diversity by incorporating population genetics results with habitat connectivity models.

· Mined odonate biological data from field guides and online databases to define species distributions, categorize whether species are habitat generalists vs specialists, and quantify length of flight seasons; Correlated ecological traits with NatureServe conservation ranks using ordinal logistic regression to identify predictors of extinction risk in odonates.