JACOB PETERSON

EDUCATION

2019

Ph.D. Student, Quantitative Ecology

Purdue University
Advisor: Dr. Pat Zollner

West Lafayette, IN

- Dissertation: Developing an agent-based model to estimate the effectiveness of chronic wasting disease management methods in white-tailed deer
- Graduate Teaching/Research Assistant
- Began coursework to pursue a secondary M.Sc. in Applied Statistics

2018 | 2016

M.Sc., Natural Resources Ecology and Management

Oklahoma State University
Advisors: Dr's. Julia Earl & Sam Fuhlendorf

Stillwater, OK

- Thesis: Examined the effects of the Conservation Reserve Program (CRP) and anthropogenic structures on the long-distance movements of lesser prairie-chickens (Tympanuchus pallidicinctus)
- Graduate Research Assistant

2015 | 2012

B.S., Fish, Wildlife and Conservation Biology

Colorado State University

Fort Collins, CO

- Concentration: Wildlife Biology
- Minor: Spatial Information Management (SIM)

2015

GRE Scores

- Quantitative Reasoning: 157
- Verbal Reasoning: 156
- Analytical Writing: 4.0

RESEARCH EXPERIENCE

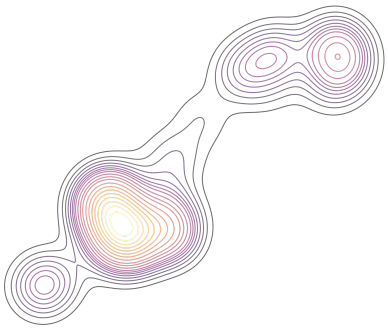
2019

Research Assistant

Zollner Lab

Purdue University

- Create and parameterize an agent-based model to simulate the distribution and movement of white-tailed deer.
- Simulate chronic wasting disease spread in the population and discover what control methods may stop or slow the disease expansion.
- Utilized machine learning methods such as random forests and decision trees to draw conclusions from the simulation results.



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CONTACT

jacobmpeterson12@gmail.com
PetersonJacobM
github.com/jacpete
+1 (913) 449-1623

SKILLS

Highly experienced with

- Program R
- ArcGIS
- Linux/Bash
- R Markdown

Experience with

- Python
- SQL
- QGIS
- Netlogo

*Made with the R package **pagedown**.*

The source code is available at github.com/jacpete/Resume_CV.

Last updated on 2019-12-11.

2018 | 2016

Research Assistant

Fuhlendorf and Earl Labs — Oklahoma State University

- Created an algorithm in R to separate long-distance movement tracts from home range movements using GPS locations of 350 individual lesser prarie-chickens.
- Utilized resource selection function's (mixed-model logistic regression), semi-variogram-based movement models, and a cumulative distribution function-based method to estimate selection-avoidance-neutral trends in response to features in the landscape.
- This information was used to inform models of connectivity between LPC populations and allow for the management of gene flow and dispersal in a fragmented landscape.

2015 | 2012

Human Dimensions Technician

Supervisor: Dr. Stacy Lischka — Colorado Parks and Wildlife

- *Projects:* Examining angler satisfaction in Colorado, assessing motivations of Colorado big game hunters, black bear exploitation of urban environments, assessing motivations of Colorado waterfowl hunters, examine the outdoor oriented values of elementary students using an Outdoor Wilderness Lab, track the effect of implementing a novice hunter program in Colorado
- Worked on a variety of projects to create summary reports for survey data, literature reviews, statistical and spatial analysis of data, and Access database design and management.

2015

NSF – Research Experience for Undergraduates Fellow

Reuman Lab — University of Kansas

- Used SQL and R to data mine a 150 year-old fish stomach database to create a food web for the North Atlantic Ocean and test for correlation in these interspecific relationships with meta-population synchrony.

2015

GIS & Human Dimensions Independent Study

Supervisor's: Dr's. Stacy Lischka and Yu Wei

Colorado Parks and Wildlife & Colorado State University

- Worked to develop a method to spatially model and predict human attitudes and tolerance to black bears using survey response data.
- Experience using SQL to interface with a database and Python & R to script a spatially-explicit model.

2014

Predictive Model for Archeological Sites Affected by Flood Damage

SIM Minor Capstone Project — Colorado State University

- Designed a predictive model to locate prehistoric and historic cultural sites in the Eastern foothills of the Rocky Mountains in Colorado using ArcGIS and python scripts.
- Created for National Forest Service archeologists.
- This initial model was designed to be scalable in order to locate cultural sites in a variety of terrains.

FIELD EXPERIENCE

My research experience has allowed me to develop and hone my skills in programming, data management, statistics, GIS that will be transferable to any field.

2016 | 2015

Field Technician - White-tailed Deer Capture

Missouri Department of Conservation — Rea, MO
Supervisor: Jon McRoberts

- Captured, measured, and collared adult deer using Clover traps and rocket nets. VITs were inserted in does for neonate capture. Used telemetry and GPS to locate dropped collars and find mortalities.
- Neonates were captured and collared using GPS locations retrieved from collars and monitoring VIT and doe collar VHF frequencies.
- All collared deer were monitored for mortality using Iridium GPS network or VHF signals.

2014

Field Technician - Mule Deer Neonate Capture

Colorado Parks and Wildlife — Piceance State Wildlife Area, CO
Supervisor: Mark Peterson

- Used telemetry and GPS to locate does and monitor for birth timing. Captured, measured, and collared mule deer neonates. Monitored collared fawns for mortality signals and investigated the cause of death.

My field experience includes working alone and as a small team in difficult terrain in a large range of weather conditions. I have used a multiple models of Garmin and Trimble GPS's and VHF reciever systems.

TEACHING EXPERIENCE

2019

Vertebrate Population Dynamics

Purdue Department of Forestry and Natural Resources — West Lafayette, IN

- TA
- Covered introduction to statistics in R, distance sampling using Program Distance and mark-recapture analysis with Program MARK
- Senior-level undergraduate course

2019

Big Data in Forest Research - Guest Lecture

Purdue Department of Forestry and Natural Resources — West Lafayette, IN

- Guest lecture on using R as a GIS.
- Covered an introduction to the `tidyverse`, the differences between packages `sp` and `sf`, using package `raster`, and mapping with `ggplot` and `tmap`.
- Graduate level course

I have a passion for teaching those that traditionally would consider themselves non-programmers how scripting and programming can make them more efficient at their jobs. I am also a advocate for free and open source options that allow fully reproducable science.

POSTERS & TALKS

2019

Engaging stakeholders in chronic wasting disease management through agent-based models

Midwest Deer and Wild Turkey Study Group Meeting — Nashville, IN

- Authors: **Peterson, J. M.**, P. A. Zollner, J. Caudell
- Invited Talk

2019

Effects of Anthropogenic Features and Landcover on the Long-Distance Movements of Lesser Prairie-Chickens

Quantitative Ecology Working Group at Purdue Department of Forestry and Natural Resources

West Lafayette, IN

- Authors: **Peterson, J.**, J. Earl, S. Fuhlendorf, D. Elmore, A. M. Tanner, D. Haukos, S. Carleton

2019

Landscape factors affecting large-scale population connectivity in a grassland obligate grouse species

Indiana State Chapter of The Wildlife Society

Indianapolis, IN

- Authors: **Peterson, J.**, J. Earl, S. Fuhlendorf, D. Elmore, A. M. Tanner, D. Haukos, S. Carleton

2018

An astronomical event reveals the role of landscapes as thermal moderators.

Ecological Society of America

New Orleans, LA

- Authors: Tanner, E. P., S. D. Fuhlendorf, J. A. Polo, and **J. M. Peterson**

2018

Response of Lesser Prairie-Chickens to Anthropogenic Structures During Long-Distance Movements

International Association for Landscape Ecology - North America

Chicago, IL

- Authors: **Peterson, J.**, J. Earl, S. Fuhlendorf, D. Elmore, A. M. Tanner, D. Haukos, S. Carleton
- Invited Symposium on Behavioral Landscape Ecology

2018

Effects of Anthropogenic Structures on the Long-Distance Movements of Lesser Prairie-Chickens

Midwest Fish and Wildlife Conference

Milwaukee, WI

- Authors: **Peterson, J.**, J. Earl, S. Fuhlendorf, D. Elmore, A. M. Tanner, D. Haukos, S. Carleton

PUBLICATIONS

2019

Estimating response distances of lesser prairie-chickens to anthropogenic features during long-distance movements

Ecosphere

- Authors: **Peterson, J.**, J. Earl, S. Fuhlendorf, D. Elmore, A. M. Tanner, D. Haukos, S. Carleton
- In Review

2019

An astronomical event reveals the role of landscapes as thermal moderators

- Authors: Tanner, E. P., S. D. Fuhlendorf, J. A. Polo, and **J. M. Peterson**
- In Review