

Peter J. Mahoney

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Education

Pres. **Ph.D. Candidate in Ecology** *Utah State University* Logan, UT
Department of Wildland Resources and the Ecology Center
GPA – 4.0

Objective: To improve our understanding of competitive dynamics between coyotes (Canis latrans) and cougars (Puma concolor) in a managed prey system.

2011 **M.S. Wildlife Sciences** *Auburn University* Auburn, AL
School of Forestry and Wildlife Sciences
GPA – 4.0

Objective: To improve our understanding of Red Wolf (Canis rufus) persistence potential within the current recovery area in northeastern North Carolina.

2001 **B.A. Biology** *New College of Florida* Sarasota, FL
Division of Natural Sciences
GPA – 4.0 (equivalent)

Peer-reviewed Publications

* *Personal contribution equivalent to first author*

Mahoney, P.J. and J.K. Young. *In review*. Uncovering behavioral states by integrating site fidelity and activity. *Methods in Ecology and Evolution*.

*Benson, J.F., **P.J. Mahoney**, J.A. Sikich, L.E.K. Serieys, J.P. Pollinger, H.B. Ernest, and S.P.D. Riley. *In review*. Interactions between demography, genetics, and landscape connectivity increase extinction probability for a small population of large carnivores in a major metropolitan area. *Proceedings of the Royal Society B*.

*Tingley, R., **P.J. Mahoney**, K.H. Beard, A.M. Durso, *et al.* 2016. Extinction and invasion success in reptiles, are they two sides of the same coin? *Global Ecology and Biogeography*.

Benson, J.F., **P.J. Mahoney**, and B. Patterson. 2015. Spatiotemporal variation in selection of roads influences mortality risk for canids in an unprotected landscape. *Oikos* 124:1664-1673.

Mahoney, P.J., K.H. Beard, A.M. Durso, *et al.* 2014. Introduction effort, climate matching and species traits as predictors of global establishment success in non-native reptiles. *Diversity and Distribution* 21:64-74.

Benson, J.F., B. Patterson, and **P.J. Mahoney**. 2014. A protected area influences genotype-specific survival and the structure of a *Canis* hybrid zone. *Ecology* 95:254-264.

Mahoney, P.J., K.D. Meyer, G.M. Zimmerman, and C.E. Cattau. 2010. An aquatic Bal-Chatri for trapping Snail Kites (*Rostrhamus sociabilis*). *Southeastern Naturalist* 9:721-730.

Publications in Preparation

* *First authorship may change depending on time constraints*

Mahoney, P.J., J.K. Young, D. Stoner, K. Hersey, and L. McFarlane. *In prep.* Assessing aerial removal risk in western coyotes (*Canis latrans*) and the implications for mule deer (*Odocoileus hemionus*) population dynamics using spatially-explicit Bayesian hierarchical models. *Ecological Applications*.

Mahoney, P.J. and J.K. Young. *In prep.* Cats and Dogs: behavioral responses of a subordinate canid to carrion subsidies associated with simulated large felid prey caches. *Animal Behaviour*.

Mahoney, P.J., D. Stoner, L. McFarlane, and J.K. Young. *In prep.* Functional responses in cougar (*Puma concolor*) space use in relation to human hunting pressure.

Mahoney, P.J., D. Stoner, L. McFarlane, and J.K. Young. *In prep.* Catch a lion by the tail: the dynamics of concurrent space use in coyotes (*Canis latrans*) and mountain lions (*Puma concolor*). *Ecology*.

***Mahoney, P.J.**, D. Schaible, K. Hersey, and J.K. Young. *In prep.* Elk (*Cervus elaphus*) movement ecology in southern Utah: assessing the relative contributions of human and environmental factors on elk resource utilization using a combination of step-selection and hidden Markov models.

Breck, S.W., **P.J. Mahoney**, and J.K. Young. *In prep.* Dynamic behavioral responses in coyotes (*Canis latrans*) to novel objects along an urban-rural gradient.

Kleuver, B, **P.J. Mahoney**, S.J. Dempsey, and E.M. Gese. *In prep.* The influence of dynamic water sources on coyote (*Canis latrans*) space use in desert environments.

Other Publications

Murray, D.L., T.D. Steury, and **P.J. Mahoney**. 2012. Viability of the reintroduced red wolf population in North Carolina. Final Report, U.S. Fish and Wildlife Service.

Mahoney, P.J., T.D. Steury, and D. Murray. 2011. The role of behavior in predicting red wolf (*Canis rufus*) persistence potential: an individual-based modeling approach. Auburn University, Master's Thesis.

Mahoney, P.J., T.D. Steury, and D. Murray. 2011. Predictive accuracy in population viability models: the red wolf as a model system. Auburn University, Master's Thesis.

A plate in: Demski, L.S. 2003. In the Fish's Mind's Eye: The Visual Pallium of Teleosts. In: Sensory Processing in Aquatic Environments (Collin, S.P. and Marshall, N.J., eds.), pp. 404 – 419, Springer-Verlag.

Mahoney, P. 2001. The cytoarchitecture of the telencephalon of a cichlid fish: *Cichlasoma cyanoguttatum*. New College of Florida, Undergraduate Thesis.

Teaching Experience

Workshop Instructor

- “Assessing resource utilization in program R: from machine learning to multi-level Bayesian GLMs”, Peter Mahoney and Michel Kohl, USU Workshop, Spring 2016

- “Known-fate modeling”, Peter Mahoney and John Benson, TWS - Colorado Chapter, February 2016
- “Intro to Rstan: the basics of Bayesian programming in R”, Peter Mahoney, USU Ecolunch, December 2015
- “Known-fate modeling”, Peter Mahoney and John Benson, National TWS, October 2015
- “AIC model selection and multimodal inference”, Peter Mahoney, USU Workshop, Spring 2013

Guest Lecturer / Teaching Assistant

Sept 2011 – Present

Utah State University

Logan, UT

- “Evaluating avian movement and home range utilization”, *USU Guest Lecturer* for Dr. Frank Howe, Spring 2016.
- “Program MARK”, *Teaching Assistant* for Dr. Mary Conner, Spring 2015
- “Species diversity and abundance”, *USU Guest Lecturer* for Dr. Dustin Ranglack, Spring 2015
- “Dynamics of predator-prey systems”, *SUU Guest Lecturer* for Dr. Nicki Frey, Spring 2014
- “Population viability analyses”, *USU Guest Lecturer* for Dr. Karen Beard, Spring 2013
- “Base R Programming” for Utah Division of Wildlife Biologists, *Teaching Assistant* for Dr. Tom Edwards, Spring 2012
- “Computer programming and database management for biologists”, *Teaching Assistant* for Dr. Ethan White, Spring 2012

Graduate Teaching Assistant

Jan. 2009 – May 2011

Auburn University

Auburn, AL

- Taught laboratory extensions for Principles of Wildlife Ecology and Wildlife Management II.
- Guest lecturer:
 - “Red Wolf Recovery : the past and future”
 - “Historical reintroductions in the United States”

Secondary Education Science Instructor

Jan. 2003 – June 2005

Hardee Senior High School

Wauchula, FL

Aug. 2001 – Aug. 2002

Booker High School

Sarasota, FL

Undergraduate Teaching Assistant

Jan. 2001 – May 2001

Aquarium Science

Sarasota, FL

Aug. 2000 – Dec. 2000

Ichthyology

Professional Field Experience

Graduate Research Assistant

Aug. 2011 – Present

Utah State University

Logan, UT

- Managed field logistics and data collection for all cougar research in the state of Utah.
- Assist state houndsman with cougar captures via horseback.
- Conduct non-invasive surveys for cougars and coyotes throughout Monroe Mountain, Fishlake National Forest, Utah.
- Conduct small mammal (Sherman trap grids) and lagomorph (spotlight) surveys in order to estimate alternative prey abundance.
- Capture coyotes using Victor 3 soft-catch leg hold traps and cable restraints.
- Monitor study animals year-round using telemetry at elevations between 4,500 – 11,000 feet.
- Assist with deer and elk helicopter captures (200+), which included VIT tagging, radio-collaring, and determining body condition through ultrasounds of rump and loin fat.

Field Biologist

May 2011 – Aug. 2011

US Forest Service

Lander, WY

- Managed volunteers for a statewide ferruginous hawk project.
- Assisted with study design.
- Surveyed small mammal abundance near hawk nesting sites.
- Monitored hawk nesting success.

Eastern Wolf Den Crew Technician

May 2010 – June 2010

Trent University

Ontario, Canada

- **Volunteered the two prior seasons for a total of three seasons.**
- Aided and advised a Trent University student with field logistics.
- Captured wolf pups and assisted veterinarians in implanting VHF transmitters.
- Monitored transmitted wolves from the ground and air.
- Recovered mortalities and determined cause of death.

Avian Field Technician

March 2006 – Aug. 2008

Avian Research and Conserv. Inst. (ARCI)

Gainesville, FL

- Managed field logistics for a large number of avian research projects, including several with an emphasis on endangered and threatened species.
- Assisted in project development, implementation, and data organization.
- Coordinated various field activities with project leaders and non-employee personnel.
- Supervised volunteers and technicians.
- Vehicle maintenance (all types).

Volunteer and Internship Experience

Eastern Wolf Den Crew Technician, Trent University

Spring '08-'09

Gray Wolf Survey Intern, Audubon Center of the NW

Winter 2000

Pritzker Marine Laboratory Intern, New College of Florida

2000

Assistant Curator, Allyn Museum of Entomology

2000

Assistant Manatee Trainer and Research Technician, Mote Marine Laboratory

1998 – 1999

Presentations

Benson J.F, **P.J. Mahoney**, J.A. Sikich, L.E.K. Serieys, J.P. Pollinger, R.K. Wayne, H.B. Ernest, and S.P.D. Riley. Modeling population viability and inbreeding dynamics of a small, isolated mountain lion population adjacent to Los Angeles. The Wildlife Society, *February 2016*, Colorado Springs, CO.

Mahoney, P.J., J.K. Young, and D.C. Stoner. Evaluating coyote removal risk: Spatial implications for mule deer. The Wildlife Society, *October 2015*, Winnipeg, Manitoba, Canada. Poster.

Benson J.F, **P.J. Mahoney**, J.A. Sikich, L.E.K. Serieys, J.P. Pollinger, R.K. Wayne, H.B. Ernest, and S.P.D. Riley. Modeling population viability and inbreeding dynamics of a small, isolated mountain lion population adjacent to Los Angeles. The Wildlife Society, *October 2015*, Winnipeg, Manitoba, Canada.

Benson J.F, **P.J. Mahoney**, J.A. Sikich, L.E.K. Serieys, J.P. Pollinger, R.K. Wayne, H.B. Ernest, and S.P.D. Riley. Modeling population viability and inbreeding dynamics of a small, isolated mountain lion population adjacent to Los Angeles. International Urban Wildlife Conference, *May 2015*, Chicago, Illinois, USA.

Beard, K.H., R. Tingley, **P.J. Mahoney**, A.M. Durso, A.G. Tallian, and A. Morán-Ordóñez. Extinction and invasion risk are not two sides of the same coin, at least for reptiles. International Congress for Conservation Biology, *Aug 2015*, Montpellier, France.

Beard, K.H., **P.J. Mahoney**, A.G. Taillan, A.L. Long, A.M. Durso, R.J. Kindermann, N.E. Nolan, D. Kinka, and H.E. Mohn. Getting to the bottom of reptile establishment success. North American Congress for Conservation Biology, *July 2014*, Missoula, Montana, USA.

Mahoney, P., K.H. Beard, A.M. Durso, A. G. Taillian, A. L. Long, R. J. Kindermann, N. E. Nolan, D. Kinka, and H. E. Mohn. Introduction effort, climate matching, and species traits as predictors of global establishment success in non-native reptiles. Joint Meeting of Ichthyologists & Herpetologists, *August 2014*, Chattanooga, Tennessee, USA.

Mahoney, P.J., J.K. Young, and J.A. Shivik. Program Cluster: Identifying Predation Events Through Clustered GPS Data. Eleventh Mountain Lion Workshop, *12 – 15 May 2014*, Cedar City, Utah, USA.

Young, J.K., **P.J. Mahoney**, and J.A. Shivik. Cougar space use on a landscape with high levels of anthropogenic disturbance in southcentral Utah. Eleventh Mountain Lion Workshop, *12 – 15 May 2014*, Cedar City, Utah, USA.

Mahoney, P.J. and J.K. Young. Cougar predation of coyotes: Implications for mule management. Gordon Research Conference on Predator-prey Interactions, *5 – 10 January 2014*, Ventura, California, USA. Poster.

Mahoney, P.J., J.K. Young, D.C. Stoner, J.A. Shivik, S.M.C. Cavalcanti, and E.M. Gese. Find that Cache: Identifying Predation Events Through Clustered GPS Data. The Wildlife Society, Utah Chapter, 20 March – 22 March 2013, Bryce City, Utah, USA. **(See Awards)**

Mahoney, P.J., T.D. Steury, and D. Murray. A re-assessment of Red Wolf (*Canis rufus*) viability using stage-structured, stochastic population models. Carnivores, 15 – 18 November 2009, Denver, Colorado, USA.

Grants

USU Ecology Center Student Award, \$4,000	2012
Drummond Company Fellowship, \$1,500	2010
Graduate Research Fellowship, University of Queensland, \$22,000 per year	2003
Sarasota County, Florida Grant, \$5,000 to measure the productivity of artificial reefs in Sarasota Bay	1999

Awards

Travel Awards (USU Ecology Center, Dept. of Wildland Resources, USU College of Natural Resources)	2014
Best Student Paper for The Wildlife Society, Utah Chapter	2013
Auburn University Outstanding Master's Student of the Year	2010
School of Forestry and Wildlife Science Outstanding Master's Student of the Year	2010
Alumni representative on the Pritzker Marine Laboratory Advisory Committee	2001-2002

Professional Service

Reviewer:

Animal Behaviour

Biological Conservation

Ecosphere

Global Ecology and Biogeography

Journal of Herpetology

Society for Conservation Biology

Wild Felid Association - Utah Student Representative

2013-2015

Pritzker Marine Alumni Representative, New College of Florida

2002-2003

Natural Sciences Student Representative, New College of Florida

1998-1999