Austin M. Smith, Ph.D.

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EDUCATION

Doctor of Philosophy – Integrative Biology (Ecology & Evolution)
University of South Florida, Tampa, FL (Expected December 2024)
Dissertation: *"Species distribution models with environmental time series data and deep learning"*
Advisor: Andrew M. Kramer

Master of Science – Interdisciplinary Ecology (Wildlife Ecology & Conservation)
University of Florida, Gainesville, FL (May 2018)
Thesis: *"A comparison of machine learning methods to classify Chukar Partridge (Alectoris chukar) establishment patterns in Washington state"*
Advisors: Wendell P. Cropper Jr.; Michael Moulton

Bachelor of Arts – Mathematics
University of Florida, Gainesville, FL (August 2013)
Minor: Secondary Education

WORK EXPERIENCE

Graduate Research Associate
University of South Florida, Department of Integrative Biology | May 2020 – December 2024

- **Contributed Projects**:
  - Lead researcher on integrating time series analysis into long-term species distribution models, combining environmental time series data with deep learning to improve predictive models for species distribution.
  - Lead researcher on correlating environmental factors to the presence of Chronic Wasting Disease, analyzing environmental variables in relation to disease prevalence.
  - Analyzed spatial modeling protocols for species conservation practices, comparing various methodologies to determine the best strategies for wildlife conservation.
  - Collaborated on nowcast modeling of Covid-19 infections with the Center for Ecology of Infectious Diseases - University of Georgia, using real-time data to model infection trends.

- Utilized Python, R, remotely sensed data, and GIS tools to build and apply deep learning models, conduct statistical analyses, and visualize data.
- Managed GitHub repositories for reproducible coding objectives and assisted in writing research papers and reports.

Lab Instructor
University of South Florida, Department of Integrative Biology | August 2019 – December 2024

- Prepared course materials, delivered lectures, and monitor student participation.
- Graded assignments, exams, and lab reports while providing academic support to students.

Assistant Researcher
University of South Florida, Department of Integrative Biology | November 2018 – January 2020

- Contributed to research on statistical protocols for invasive species spatial distributions.
- Conducted geospatial analysis and machine learning applications using R and Python.

Graduate Assistant
University of Florida, Department of Wildlife Ecology & Conservation | August 2015 – May 2018

- Lead researcher on statistical evaluations of habitat needs for introduced gamebirds, assessing habitat characteristics to support gamebird introduction and establishment.
- Developed machine learning models to analyze ecological data, focusing on predictive models for species habitat suitability.
- Managed data processing and visualization tasks using R and Python, including the use of GIS for spatial analysis.
- Conducted literature reviews, assisted in writing research papers, and contributed to the development of conservation strategies.

GRANTS & FELLOWSHIPS

- **Dissertation Completion Fellowship**, University of South Florida (Aug 2023 – Dec 2023)
- **Conference Travel Award**, University of South Florida (June 2023)
- **Conference Travel Funding**, University of Florida (June 2017)

PUBLICATIONS

- **Smith, A. M.,** Cropper Jr., W. P., Moulton, M. P. (2021). *A quantitative assessment of site-level factors in influencing Chukar (Alectoris chukar) introduction outcomes*. DOI: 10.7717/peerj.11280
- **Smith, A. M.**, Capinha, C., Kramer, A. M. *Incorporating environmental time series into species distribution models*.(In review) Pre-print on bioRxiv

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PRESENTATIONS

- **Smith, A. M.,** Cropper Jr., W. P., Moulton, M. P. (2024). *Introductions of Chukars (Alectoris chukar) in the United States*. 85th Annual Meeting of the Association of Southeastern Biologists.
- **Smith, A. M**., Capinha, C., Kramer, A. M. (2023). *Species distribution modeling with time series data and deep learning*. University of South Florida Artificial Intelligence + X Symposium.
- **Smith, A. M**., Kramer, A. M. (2023). *Assessing deep learning protocols for optimizing time series-based species distribution models*. Ecological Society of America Annual Meeting.
- **Smith, A. M**., Capinha, C., Kramer, A. M. (2021). *Predicting species distributions with environmental time-series data and deep-learning*. Ecological Society of America Annual Meeting. Virtual.

TEACHING EXPERIENCE

- **Instructor** – BSC2011L, Biodiversity (Fall 2024, Spring 2023, Fall 2022, Spring 2020, Fall 2019)
- **Instructor** – PCB3043L, Principles of Ecology (Spring 2022)
- **Teaching Assistant** – BSC2011, Biodiversity (Spring 2023)
- **Teaching Assistant** – WIS 2040, Wildlife Issues in a Changing World (2016–2018)

MENTORING EXPERIENCE

- **Undergraduate Mentorship**
  - Jordan Kaszyk, Spatial modeling of Chronic Wasting Disease (Spring 2020 – Summer 2022)
  - Raquel Gonzalez, Spatial modeling of invasive species (Fall 2019)

PROFESSIONAL SERVICES

- **Journal Reviewer**: Ecosphere, Ornithological Applications
- **Community Educator**: Bird of Prey Aviary, Boyd Hill Nature Preserve (2018 – Present)

PROFESSIONAL AFFILIATIONS

- American Association for the Advancement of Science (2018–2021)
- American Ornithological Society (since 2018)
- British Ecological Society (since 2022)
- Ecological Society of America (since 2017)
- The Wildlife Society (since 2018)