MICHIGAN STATE UNIVERSITY

MS Research Position

Standardized Deer Density Estimation for CWD Management

Title: Standardized Deer Density Estimation to Support Evaluation of CWD and White-Tailed Deer Management

Description: We seek a motivated master's student to join the Christensen Lab in the Department of Fisheries and Wildlife at Michigan State University. The successful applicant will conduct research on standardized roadside distance sampling for estimating white-tailed deer density in areas managed for chronic wasting disease (CWD). This position is funded through a research assistantship on a USDA-funded project. The selected candidate will work with a team of collaborators from Michigan State University, state wildlife agencies, and USDA partners.

Project Description: This position is part of Standardizing Deer Density Estimation to Support Multi-State Evaluation of CWD and White-Tailed Deer Management, a USDA-funded project led by Michigan State University (MSU). The project will use data from standardized roadside distance sampling surveys in 24 paired treatment and control units across Michigan, Missouri, Ohio, and Wisconsin to establish baseline deer density estimates and will develop the protocols, training materials, and centralized data infrastructure needed to evaluate deer population responses to management over time among Midwest states. This project is in conjunction with a broader effort by the CWD Research Consortium's Objective 4 adaptive management project and builds on earlier USDA-supported MSU research that evaluated methods for estimating white-tailed deer density. In Michigan, the work is coordinated with complementary projects in the same units, including the MSU and Michigan DNR project Evaluating New Approaches to Deer Overabundance and CWD Management. Collaborators include the Michigan Department of Natural Resources, Missouri Department of Conservation, Ohio Division of Wildlife, Wisconsin Department of Natural Resources, the Montana Cooperative Wildlife Research Unit, and the USDA APHIS National Wildlife Research Center.

Research Objective: Generate standardized estimates of deer density from roadside distance sampling within paired treatment and control units, and evaluate how these estimates compare with other density estimation approaches (e.g., camera surveys, drone surveys, and harvest-based estimates) where overlapping data are available. Scale our estimation recommendations to township-level assessments for regional state wildlife agencies and develop a centralized data infrastructure for multi-state comparisons.

Responsibilities: The selected Master's Research Assistant will be responsible for:

- Conducting standardized roadside distance sampling surveys within Michigan treatment and control units (approximately 36 square miles each).
- Contributing to survey protocols, observer training materials, and quality assurance procedures used across participating states.
- Communicating with state agency partners and research collaborators in a timely and professional manner.
- Analyzing survey data using distance sampling methods to estimate detection functions and deer density with associated measures of precision.
- Comparing roadside distance sampling estimates with other available density datasets.
- Contributing to centralized data management and the integration of density estimates with harvest, human dimensions, and CWD surveillance data.
- Collaborating with agency partners in Michigan, Missouri, Ohio, and Wisconsin.
- Preparing a thesis and manuscripts for publication, and presenting results at conferences.

Qualifications:

- A bachelor's degree in a relevant field (e.g., wildlife biology, ecology, epidemiology, statistics, or related field).
- Experience with distance sampling or other wildlife population survey methods preferred.
- Strong quantitative and analytical skills/aptitude.
- Experience with statistical software preferred (e.g., R, Python).
- Excellent communication skills, both written and oral.
- Ability to work independently and as part of a collaborative research team.
- Passion for wildlife conservation, management, and research.
- Experience working with state wildlife agencies is preferred.

Program Support: The selected Master's Research Assistant will receive:

- Full tuition remission, health benefits, and a bi-weekly stipend (see below) for two years, one semester of Teaching Assistantship may be possible.

Applications: Interested candidates should submit the following materials to Dr. Sonja Christensen (chris625@msu.edu). IMPORTANT: Submit applications with "MS Application: Wildlife Estimation and Health" in the subject line (*single merged PDF file is preferred*):

1. A cover letter outlining your research interests and goals.
2. A resume or curriculum vitae.
3. GRE scores preferred but not required
4. TOEFL scores (for non-native English speakers only).
5. Academic transcripts (unofficial copies are acceptable at this stage).
6. Contact information for three references.
7. One representative first-authored publication or report if one exists.

Application Deadline: Review of applications will begin immediately and the final deadline for submission is October 30th, 2026.

Salary and Start Date: Minimum annual stipend starting at $33,276, plus tuition and health benefits. Start date is January 2027. Funding is available for 2 years, and the option to TA to cover an additional semester may be considered if the student is in good academic standing.

Contact Information: For inquiries about the position or the research project, please contact Dr. Sonja Christensen (chris625@msu.edu) or reach out to members of my lab. Please allow time for email response.

More about the Christensen Lab: Join our team at the Christensen Lab and contribute to critical research that addresses the challenges posed by high-density deer populations, CWD, and its impact on wildlife population health. We look forward to welcoming a dedicated MS student to our project and our dynamic research group. Our lab focuses on evaluations of wildlife population health and understanding the dynamics of infectious diseases in wildlife populations to develop strategies for their management and conservation. We employ cutting-edge field research, quantitative modeling, and interdisciplinary approaches to address critical challenges in wildlife health. For more information about our lab, please visit our website: www.christensen-lab.org. Further, Michigan State University's Department of Fisheries and Wildlife is one of the largest programs of its kind, with 45 core faculty (http://canr.msu.edu/fw).

