# Dr. Mark E. Bell

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## EDUCATION

**Ph.D. Wildlife Ecology, Utah State University, 2022**

Dissertation: Nest-site selection, success, and response to predators by cinnamon teal and other ground-nesting ducks in the wetlands of Great Salt Lake, Utah.
Dissertation Advisor: Michael Conover, Ph.D.

**B.S. Wildlife Ecology and Management, Utah State University, 2018**

Minor: Criminal Justice

## RESEARCH EXPERIENCE

**Wild Foods Institute, Michigan State University, Feb 2024-Present**
***Research Scientist/Boone and Crockett Fellow***

- Collaborated with state, university, private, and nonprofit individuals to develop, implement, and carry out projects
- Authored white paper (in progress) to inform Michigan Department of Natural Resources of white-tailed deer management methods including potential for regulated commercial harvest
- Authored articles for scientific publications on topics including deer-vehicle collisions, venison donation programs, hyperabundant deer populations, meat processor's attitudes and limitations to participation in meat donation programs, and optimization of meat donation programs in Michigan
- Authored legislative report to inform lawmakers of problems and solutions to hyperabundant white-tailed deer
- Created professional maps and figures for illustration and presentation of data
- Presented findings to diverse audiences at working groups and annual Boone and Crocket meetings
- Collaborated with team members of diverse backgrounds and beliefs to reach work objectives while creating a welcoming and productive atmosphere

**Winterstein Lab, Michigan State University, Feb 2023-Feb 2024**
***Postdoctoral Research Associate***

- Led a team of technicians in the annotation and processing of over 1 million camera trap photos of waterfowl obtained from 19 wetland sites across Michigan DNR during a multiyear study

Collaborated with DNR to disseminate findings to local wetland managers
Developed methods to analyze camera trap photos and create high quality and reliable population estimates of waterfowl in Michigan DNR floodings
Conducted waterfowl population analysis of Michigan floodings using hierarchical Bayesian models to compare populations of birds at sites with natural water regimes verses manipulated water regimes
Authored sections of wetland reports and deliverables for Michigan DNR regarding waterfowl and wetland projects
Created maps and visual data demonstrations of wetlands and waterfowl use in Michigan

**Conover Lab, Utah State University, 2019-2022**
***Graduate Research Assistant***

Assisted in drafting research proposals to obtain research funds
Worked with private, state, and federal agencies and land managers to obtain handling permits and access to private wetlands, Utah waterfowl management areas, and the federal Bear River Migratory Bird Refuge to conduct my studies
Developed novel methods for locating and monitoring duck nests in Great Salt Lake Wetlands
Created a solar powered continuously recording camera system to monitor behaviors of ducks and predators at nests
Developed resource selection models for ground nesting ducks
Created camera trap methods to monitor predator populations and movement at Bear River Migratory Bird Refuge
Conducted monthly aerial bird surveys over Great Salt Lake
Collected and necropsied eared grebe specimens
Performed population counts and nest surveys for eared grebe colonies in Utah wetlands
Analyzed eared grebe migration patterns and pathways using NEXRAD radar data
Led and mentored technicians in fieldwork and data collection

## TEACHING EXPERIENCE

**Lake Superior State University, Jan 2024- Present**
***Adjunct Instructor***
Wildlife Ecology (Junior/Senior Level Course)

Wrote and delivered lectures on general theories of wildlife ecology
Engaged with students to encourage student participation and active learning
Led students in oral presentations
Led students in group projects and cooperative work
Met with students during office hours to answer questions and solve class conflicts
Created assignments, quizzes, and exams for student development and assessment
Provided and maintained a professional and inclusive classroom environment

**Utah State University, 2019-2022**

***Teaching Assistant***

Management Aspects of Wildlife Behavior (Junior Level Course)

- Wrote and presented lectures on the following topics:
  - Evolution and current forms of communication in animals
  - Hiding from predators
  - Environmental control of behavior
  - Genetic control of behavior
  - Mating systems
- Created quiz and test questions
- Created study guides for tests and quizzes
- Led test prep and study sessions outside of class hours
- Maintained class website by posting learning materials and grades
- Mentored students during office hours and supported learning outside of the classroom
- Mentored new teaching assistants on working with students, creating assignments, and maintaining class learning management system

Great Salt Lake Ecology (Graduate Level Course)

- Wrote and presented lectures on the following topics:
  - The north arm of Great Salt Lake, its creation and unique environment
  - Bird use and management of pelagic regions of Great Salt Lake
  - Bird use and management of freshwater wetlands surrounding Great Salt Lake
- Planned and led fieldtrips including:
  - Tours of Bear River Migratory Bird Refuge and review of wetland and bird management strategies
  - Spotlighting trips to count nest predators and review predator management
  - Collection of Eared Grebes on Great Salt Lake for body composition analysis
- Mentored students during office hours and supported learning outside of the classroom

## PUBLICATIONS

**Peer-Reviewed Journal Articles:**

**Bell, M. E.**, and M. R. Conover. In Press. How do daily survival rates of nests change during the incubation period for ducks nesting in Great Salt Lake marshes? Human-Wildlife Interactions.

Conover, M. R., and **M. E. Bell**. 2024. Climate extremes in consecutive years impacted the number and fate of duck nests on Great Salt Lake marshes. Ecology and Evolution 14:e70630

Mason, D. S., **M. E. Bell**, K. F. Kellner, A. Bennet, T. Weston, J. Presgrove, and J. L. Belant. 2024. Wild harvests could aid food insecurity and reduce wildlife hyperabundance. BioScience biae110 https://doi.org/10.1093/biosci/biae110

Conover, M. R., **M. E. Bell**, and J. Luft. 2024. Monthly changes in population size and body composition of eared grebes (*Podiceps nigricollis*) on Great Salt Lake, Utah. Western North American Naturalist 84:165–174.

**Bell, M. E.**, and M. R. Conover. 2023. Nest success of ground nesting ducks in the wetlands of Great Salt Lake, Utah. *Ecology and Evolution* 13:e10384.

**Bell, M. E.**, and M. R. Conover. 2023. Predator and duck behaviours at depredated nests in wetlands of Great Salt Lake, Utah. *Behaviour* 160:463-487, DOI: 10.1163/1568539X-bja10217

**Bell, M. E.**, and M. R. Conover. 2023. Nest-site selection by cinnamon teal and other ground-nesting ducks in Great Salt Lake wetlands. *Wildlife Society Bulletin* 47:e1427 DOI: 10.1002/wsb.1427.

Conover, M. R., **M. E. Bell**, and L. M. Delahoussaye. 2023. Viability and hatchability of brine shrimp (*Artemia franciscana*) cysts after passing through the digestive system of eared grebes (*Podiceps nigricollis*). *Journal of Oceanology and Limnology* 41:1300–1306 DOI: 10.1007/s00343-022-2242-7.

Delahoussaye, L. M., **M. E. Bell**, and M. R. Conover. 2021. Nesting status and chronology of eared grebes along Great Salt Lake, Utah. *Wildlife Society Bulletin* 45:282–289.

**Book Chapters:**

Conover, M. R., and **M. E. Bell**. 2020. Importance of Great Salt Lake to pelagic birds: eared grebes, phalaropes, gulls, ducks, and white pelicans. Pages 239–262 in B. K. Baxter, J. K. Butler editors. *Great Salt Lake Biology*. Springer, Cham, Switzerland.

**Articles In Review:**

**Bell, M. E.**, Mason, D. S., K. F. Kellner, J. E. Hill, C. Stewart, and J. L. Belant. In Review. Nonlinear effects of anthropic drivers on deer-vehicle collisions. Environmental Impact Assessment Review.

Mason, D. S., **M. E. Bell**, K. F. Kellner, C. Stewart, and J. L. Belant. In Review. Wild-harvested game meat donations provide limited food security. People and Nature.

Conover, M. R., and **M. E. Bell**. In Review. Survival rates of duck nests are lower during egg-laying than the incubation periods on Great Salt Lake marshes. Journal of Wildlife Management.

**Articles In Progress:**

Conover, M. R., and **M. E. Bell**. In Progress. Artificial nests accurately mimic the fate of actual duck nests during the egg-laying period on Great Salt Lake marshes.

Kellner, K. F., D. S. Mason, **M. E. Bell**, and J. L. Belant. In Progress. Optimization of venison donations to reduce food insecurity and hyperabundant white-tailed deer in Michigan, USA.

Mason, D. S., **M. E. Bell**, and J. L. Belant. Michigan wild meat processor limitations survey.

**Bell, M. E.**, M. Liberati, S. Winterstein, and D. R. Luukkonen. In Progress. Wetland size and structure effects on waterfowl use in Michigan.

**Bell, M. E.**, and M. R. Conover. In Progress. Analyzing Eared Grebe migrations using NEXRAD weather radar.

## PRESENTATIONS

**Bell, Mark E.** and David Mason (2024). Assessing strategies to manage hyperabundant white-tailed deer in lower Michigan. Michigan Boone and Crockett Meeting.

**Bell, Mark E.** and David Mason (2024). Assessing strategies to manage hyperabundant white-tailed deer in lower Michigan. 48th Annual Midwest Deer and Turkey Study Group Meeting.

**Bell, Mark E.**, and Michael Conover (2023). Nest- site selection and success of cinnamon teal in the wetlands of Great Salt Lake, Utah. Biennial Conference of the Wildlife Damage Management Working Group, The Wildlife Society.

**Bell, Mark E.** (2022). Nest-site selection and success of cinnamon teal in the wetlands of Great Salt Lake, Utah. 29th Annual Conference. The Wildlife Society.

**Bell, Mark E.** (2022). Nest-site selection and success by ground-nesting ducks in Great Salt Lake wetlands. Department of Wildland Resources Graduate Student Symposium, Utah State University.

**Bell, Mark E.** (2021). Impact of predators on success of waterfowl nests located along Great Salt Lake. Biennial Conference of the Wildlife Damage Management Working Group, The Wildlife Society.

**Bell, Mark E.** (2020). Nesting success and nest site selection by ducks at freshwater impoundments surrounding Great Salt Lake, Utah. Ecological Society of America Annual Meeting.

**Bell, Mark E.** (2020). Evaluating behavioral tactics of ducks to reduce nest-depredation rates. Department of Wildland Resources Graduate Student Symposium, Utah State University.

**Bell, Mark E.** (2020). Importance of Great Salt Lake to pelagic birds. Salty Science Series, Great Salt Lake Institute.

## PROFESSIONAL MEMBERSHIPS

The Ecological Society of America

The Wildlife Society

Member of Wildlife Damage Management Working Group

## LICENSES

Class A CDL

Endorsements – double/triples, passenger