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## Field Research and Conservation

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# FIELD RESEARCH AND CONSERVATION



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## ♦ CLASS OVERVIEW

The Field Research & Conservation class emphasizes long-term field research experiences, examines ecosystem processes, and investigates the evolution of American perspectives about nature. Our time spent at the UW-NPS research station was divided between pursuing behavioral ecology research and exploring Grand Teton National Park and the surrounding area to gain understanding of how the region was shaped, both by geological and biological process as well as political processes that have been shaped by America's ever-changing conservation ethic.



This year we performed a preliminary field study on a population of sagebrush crickets (*Cyphoderris strepitans*) at Lower Deadman's Bar that investigated the role of female choice in the promotion of calling behaviors by males. To gather baseline data, we built a circular, 0.5 meter diameter pen around the "home sagebrush" of each of the twenty males in our study. Over four nights, we observed and scored the frequency of male calling and how quickly their calling resumed when disturbed. These data were then used to separate the males into two groups: bold and timid.



We hypothesized that the males' behaviors would be consistent with baseline data when a bold male, a timid male, and a female were placed in a pen together. We also hypothesized that females would mate with bold males more often than timid males. Paired t-tests indicate that neither bold nor timid males changed their recovery-from-interruption behaviors significantly ( $p = 0.14$  and  $0.17$ , respectively) while in a pen together. However, timid males showed a significant increase in their calling frequency ( $p < 0.04$ ) while bold males showed no significant differences in this regard ( $p = 0.13$ ). Observations of the crickets in these compressed densities suggest that timid males are stimulated to call in response to the calls of a bold male nearby. Although females did mount bold males more often than timid males, chi-square analysis indicates the differences were not statistically significant ( $p = 0.26$ ). We wonder if this was influenced by the increased calling frequency of the timid males.



Students read numerous articles from Behavioral Ecology, Animal Behaviour, Physiological Zoology, and other professional periodicals. After discussing articles in detail with their instructors, students used their newfound understandings to complete a poster of our major findings in 2013. Their poster was presented at the 2014 Phi Sigma Research Symposium hosted by Illinois State University.

Living within a community of research scientists had tremendous benefits to my students. On numerous occasions we conversed with researchers about their work and gained valuable insights concerning the design and implementation of scientific studies. More specifically, we were introduced to research involving disease transmission in local species of birds.

Aside from conducting research, we explored Grand Teton and Yellowstone National Parks while learning about ecosystem dynamics, the role of disturbance and succession, local flora and fauna, and the influences of geologic process in shaping landscapes and the communities that occupy them.

