Brandi Van Roo's Research Page

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Education

PhD Indiana University, Bloomington IN
BS SUNY College of Environmental Science and Forestry

Research Interests

My research interests are broad, but originate from the integrative study of animal behavior, ecology, & evolutionary biology.

Hormones & Behavior

I study the role that circulating hormones play in stimulating breeding behaviors and the corresponding tradeoffs with other behaviors, immune function, or breeding success.

These studies require target-catching birds: luring them to mist nets with song playbacks and models. Once caught, birds are banded with unique color-combinations and a blood sample is collected for hormone analysis. Birds are then released and their breeding behaviors are studied.

Host Ejection of Brood-Parasite Eggs

Warbling vireos (WAVIs) are the smallest bird in North America to eject Brown-headed cowbird eggs from their nest. Sealy and colleagues documented geographic variation in acceptance vs. ejection of parasitic cowbird eggs among WAVI populations, and the distribution matched the subspecies distribution of *Vireo gilvus swansoni* on the west coast and *V. g. gilvus* in the central/midwest U.S. Studies were needed in the east. I documented ejection behavior in WAVIs in Massachusetts, lending further support that cowbird egg ejection evolved in the *V. g.* gilvus subspecies.

Breeding Bird Surveys (MAPS)

Each summer, my students and I survey breeding birds and their young at two banding stations, one forested and the other maintained as grassland & meadow. These data contribute to the national database: Monitoring Avian Productivity & Survival (MAPS) at the Institute for Bird Populations.

Migrant Bird Surveys

Each semester, my students and I survey migrant songbirds at a banding station near campus. We document the species, age, and sex of each bird prior to banding and release. These data contribute to student research projects as well as the national database at USGS Bird Banding Laboratory.

Wildlife Surveys at Solar Arrays

Solar panel arrays are being constructed at a staggering pace. This is good news for greener sources of energy but there is no published science on the impacts of these panel arrays on wildlife communities, especially when they are replacing open spaces like forests, fields, or agricultural farmlands. I am comparing wildlife surveys (mammals, birds, & arthropods) on three land uses: solar arrays, agricultural cropland, and fields managed for wildlife.

I surveyed mammals with catch and release traps, track plates, and infrared cameras. I surveyed birds with mist nets and point counts. I surveyed arthropods with sweep nets and drop cups. Bryan Connolly, a botanist, performed plant surveys.

Other Research Interests

- Nest Building Materials
- Integumental UV Reflectance

Other Professional Activities

- Tree Climbing: Exploring the Canopy
- Prescribed Burns: Creating Early Successional Habitats

Professional Societies

- Animal Behavior Society
- The Wildlife Society
- Ecological Society of America
- Eastern Bird Banders

Professional Certifications

- Advanced Bird Banding, PARC
- Hunter Education, MA DFW
- Prescribed Fire Crew Member (RXCM)
- New England Tree Climber

Current Bird Banding Sub-Permittees

Gabby Suazo

Rowan Coltey-Reeves

Past Research Trainees

Courses Taught

BIOL 160 Introduction to Organismal Biology
BIOL 212 Wildlife Specimen Preparation Techniques
BIOL 233 Comparative Vertebrate Anatomy
BIOL 248 Principles of Ecology
BIOL 291 Principles of Tropical Ecology and Conservation: Field Study
BIOL 320 Animal Behavior
BIOL 335 Principles of Wildlife Biology
BIOL 336 Ornithology
BIOL 360 Wildlife Management and Conservation Topics
BIOL 460 Research Experience in Biology