



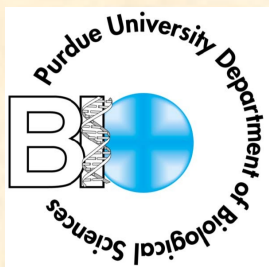
The Reserve is the Living Laboratory of the Department of Biological Sciences, as envisioned by founder Alton Lindsey in 1949, integrating field research, teaching, and outreach in ecology.

Ross Reserve Quick Facts

- 92 acres of mature forest on the Wabash River
- Alton A. Lindsey Field Laboratory for classes and research
- 60-year database on forest composition in a surveyed grid
- 100+ species of vertebrate animals and 400+ species of vascular plants
- 35+ undergraduate researchers and 150+ class projects annually
- 500+ students experience the Reserve each year during field trips
- 30 PhD dissertations, 120 scientific publications, and 60+ Masters & Honors theses
- 14 faculty use the Reserve for teaching, research and outreach
- Outreach to K-12 schools: 150 students and teachers annually
- A graduate “ecologist in residence” facilitates research, teaching and outreach



The Reserve is a center for community outreach promoting scientific literacy and understanding of the natural world



Website: ecology.bio.purdue.edu/ross-reserve
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Current Research Highlights



Do birds see the world differently?

Birds are highly visual and vary a lot in their visual systems depending on the habitat they occupy, their food preferences, and their avoidance of predators. Research by **Dr. Esteban Fernandez-Juricic** and students has implications for making the color and shape of objects more attractive (bird feeders) or less attractive (airplanes) to birds.



How will climate change affect spring wildflowers in Indiana woodlands?

The first plants and insects to emerge each spring are particularly sensitive to environmental cues such as temperature and the timing of leaf-out by the trees. Cues are shifting with climate change, yet we have a limited understanding of the impacts of these shifts. **Dr. Nancy Emery** and students are examining the effects of temperature and canopy closure on the interactions between Spring Beauty wildflowers, their co-flowering plant neighbors, and their pollinators to develop a community-level understanding of the ecological consequences of climate change.



Has hearing in songbirds co-evolved with song?

We know relatively little about how birds process vocal signals. This is particularly relevant with the increasing levels of anthropogenic sources of noise. **Dr. Jeffrey Lucas** studies hearing in song birds, species differences, seasonal differences and sex-related differences in the processing of auditory inputs. These studies test fundamental ideas about communication and information processing that also apply to human hearing and vision systems.



How do unisexual vertebrates reproduce?

Seventeen types of hybrid salamanders in the northern U.S. lack males and can contain three or more sets of chromosomes.. Sperm are still required for eggs to develop, but all male chromosomes are usually destroyed afterward. **Dr. Richard Howard** and students are asking how females get sperm from males of another species.

Do invasive plants inhibit native species? Researchers from other departments also use the Reserve, including **Dr. Michael Jenkins** and students of Forestry and Natural Resources, who are studying the impacts of

Amur honeysuckle. These research programs and others involve many undergraduate independent study and honors students. Courses like Field Ecology also generate a wide variety of research at the Reserve, including studies this year of the correspondence of whole plant communities and soils and the long-term resilience of the forest.

