



THE GRADUATE SCHOOL | MONTANA STATE UNIVERSITY

Department of Ecology

DEGREES OFFERED

- M.S. in Biological Sciences
- M.S. in Fish and Wildlife Management
- Ph.D. in Biological Sciences
- Ph.D. in Ecology and Environmental Sciences (Interdepartmental with ARNR, ESCI, LRES, MBI, and PSPP)
- Ph.D. in Fish and Wildlife Biology



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Ecological knowledge is critical to conservation and management of the state's resources, including fish, wildlife, plants, and the ecosystems and landscapes that sustain them. Through ongoing research, outstanding teaching, and community outreach, students and faculty in the Department of Ecology seek to learn about these resources and tackle fundamental and applied questions that address ecological and natural resources questions for Montana and a wide variety of ecosystems across the globe.

The Department of Ecology's contributions to ecological research and natural resource management are profound. Using funding from sources such as the National Science Foundation and Montana Fish, Wildlife & Parks, departmental research represents the balance between cutting-edge basic research in ecology and local applied research focused on the land-grant mission of MSU. The Ecology Department is committed to addressing the research needs of the State of Montana to preserve the extraordinary resources and amenities that underlie the current and future economy of Montana.

Ecology is an extremely research-active department, with one of the largest research-based graduate programs in science at MSU. The Department conducts research for over 50 federal and state agencies and NGOs in Montana, the Greater Yellowstone Ecosystem, and around the world, including eastern Africa and Antarctica. Exceptional faculty and location of MSU make the department highly competitive with peer institutions, allowing its research to meet the challenges of contemporary scientific inquiry and natural resource management.

continued



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ADMISSION

The Department of Ecology admits a limited number of students into its graduate programs each year. Ecology faculty advise an average of four graduate students per tenure track faculty member, with its graduate students comprising 12 percent of all graduate students in the College of Letters and Science. Potential students must meet minimum requirements based on their academic performance, graduate record examination (GRE) scores, recommendation letters, relevant experience, and potential for scientific and professional excellence. Qualified students must secure a position with a faculty member who agrees to serve as their graduate advisor for their degree. Generally, faculty will identify a research project and possible sources of funding, advertise the position in their chosen venue, and review requested application materials. Once chosen, faculty invite applicants to apply to The Graduate School at MSU. Admissions applications are not considered if submitted without approval by a faculty member.

PROGRAM REQUIREMENTS

The minimum credit requirement for a master's degree is 30 credits, and at least 20 credits must be from course work other than thesis work. A minimum of 10 thesis credits must be successfully completed. The minimum credit requirement for a doctoral degree is 60 credits beyond the bachelor's degree, and at least 42 credits must be from course work other than thesis work. A minimum of 18 thesis credits must be successfully completed. A maximum of 30 credits from a previously earned Master's degree may be applied toward the 60 credit requirement for a doctoral degree.

FINANCIAL ASSISTANCE

Most Ecology graduate students are supported on Graduate Research Assistantships provided by their faculty advisor from grant funds. Assistance is based on individual need, available funding for the project, and agreement between student and advisor. A limited number of Graduate Teaching Assistantships are available each academic year and are reflective of departmental teaching needs and financial assistance available. Students are chosen the semester before the teaching assistantship. In addition to assistantships, the Ecology Department announces a small number of locally-funded scholarships each fall semester, and announces other funding opportunities as they become available throughout the year.

FACULTY

DEPARTMENT HEAD

David Roberts

PROFESSORS

Scott Creel - Behavioral endocrinology, conservation biology, population biology, social evolution, biology of carnivores

Robert Garrett - Ecology, population dynamics, management and conservation of mammalian species

Christopher Guy - Applied fisheries science, population ecology, predator-prey interactions, fisheries management

Andrew Hansen - Landscape ecology and management, land use effects on biodiversity, sustaining greater park ecosystems, conservation biology

Steven Kalinowski - Conservation and evolutionary genetics

Thomas McMahon - Wild trout management, fish-habitat relationships, winter ecology, conservation biology of salmonids

David Roberts - Vegetation ecology, ecological modeling, multivariate analysis of ecological data

Jay Rotella - Ecology, population dynamic, habitat relationships, management of vertebrate species

Alexander Zale - Aquatic wild life management and ecology

ASSOCIATE PROFESSORS

Wyatt Cross - Aquatic ecosystem ecology, food-web ecology, global change

Andrea Litt - Effects of human activities on wildlife including invasive species, disturbance, and land use; restoration ecology; quantitative ecology

ASSISTANT PROFESSORS

Lindsey Albertson - Freshwater organism ecology and physical stream geomorphology; feedbacks between animals and sediment erosion; impacts of changing flow regimes and species invasions on ecogeomorphic linkages.

Laura Burkle - Community ecology; plant-animal interactions; pollination ecology; effects of natural & anthropogenic disturbances; conservation

Jia Hu - Plant physiological ecology, quantifying climate change impacts, isotope biogeochemistry, ecohydrology

Ben Poulter - Terrestrial ecosystem modeling, carbon cycle, disturbance, land cover and climate change impacts

