



School of Natural Resources and Environment: Resource Ecology and Management

Human populations have dramatically altered most ecosystems on earth, yet continue to rely on these ecosystems for food, water, fiber and recreation. Managing the multiple uses of our ecosystems creates an ever increasing demand for scientists trained in the sustainable management of natural resources. Such scientists may focus on particular resources, such as forests, fishes or wildlife, but also must understand interactions between these organisms and the environment, including natural and human influences.

The School of Natural Resources and Environment is an international leader in educating and training students to become competent and productive environmental managers, scientists, policy makers, and advocates. The School's

interdisciplinary orientation trains undergraduate and graduate students to analyze resource management and environmental problems from many perspectives. Students become familiar with local, regional, national and international environmental issues ranging from urban settings to wilderness areas.

The School of Natural Resources and Environment's programs develop expertise in the biophysical/technical aspects and the socio-behavioral/policy aspects of natural resources and environmental issues. Courses in applied ecology, statistics, natural resource economics, resource policy and administration, environmental conflict management, social change and natural resources, environmental psychology, and environmental education prepare students to pursue a variety of careers.

SKILLS & ABILITIES

The curriculum in the Resource Ecology and Management prepares students for either research careers focusing on specific species, ecosystems, or ecological problems or management careers requiring skills in policy and economic analysis, the application of scientific knowledge to management problems, and related administrative skills. An important component of the training is an increased

awareness of how knowledge and skills from several disciplines can be integrated to solve natural resource and environmental problems. For example, a research scientist, watershed management specialist, or an environmental consultant might use analytical thinking skills on a daily basis, although for different purposes. A sampling of representative skills and abilities follows.

Organization

- Theory development
- Evaluating policies
- Understanding economic & legal issues
- Logical reasoning
- Group leadership
- Budgeting

Quantitative & Analytical

- Research design
- Gathering and interpreting information
- Scientific analysis
- Data/computer modeling
- Biometrics
- Applying statistical methods
- Interdisciplinary & causal analysis

Scientific/Field

- Laboratory methods
- GIS/Remote Sensing
- Species identification
- Soil & water sampling
- Measurements

Communication

- Speaking & writing effectively
- Collaborating with others
- Writing research reports
- Understanding prejudice
- Conveying complex information

OCCUPATIONAL OPPORTUNITIES

Graduates in Resource Ecology and Management are able to use the skills and abilities acquired through the concentration as building blocks toward any number of occupations and career paths. Students have the opportunity to study: Aquatic Ecology & Management, Wildlife Ecology & Management, Terrestrial Ecology & Management, Fisheries Ecology & Management, and GIS/Remote Sensing.

The following list of occupations corresponds to the employment sectors where School of Natural Resources and Environment students have obtained employment. An undergraduate degree in Natural Resources and Environment provides a foundation for all the occupations listed. Some require an advanced degree; those have been marked with a • on the following list.

Government

Area Forester
Fish & Wildlife Biologist
Protection Specialist
Wildlife Habitat Specialist
•Remote Sensing Specialist
Wetland Ecologist
Refuge Manager
Park Ranger
•Park Manager

Private Sector

Environmental Biologist
Consultant
•Consulting Forester
Fisheries Biologist

Non-profit

Water Resource Specialist
•Ecologist
•Urban Forester
•Habitat Restoration Specialist

Academic/Research

Laboratory Researcher
Sea Turtle Researcher
Environmental Scientist
•Professor/Lecturer
•Aquatic Ecologist

CURRICULUM REQUIREMENTS

The Bachelor of Science degree in Natural Resources and Environment requires a minimum of 120 credit hours including at least 50 credits from the School of Natural Resources and Environment. The Master of Science degree in Natural Resources and Environment requires a minimum of 36 credit hours including at least 19 credits from the School of Natural Resources and Environment.

The interdisciplinary nature of the resource ecology and management program is reflected in the curriculum which includes course work for the bachelor of science degree in economics, calculus, biology, chemistry, general and applied ecology, environmental policy, computer applications, applied social and behavioral science, resource management, and specific concentration courses. For the master of science degree course work includes analytical skills, ecology, a required core, and a capstone thesis, project or practicum.

FOR MORE INFORMATION

For more information about choosing a career, graduate or professional school, internships or job descriptions; and for library resources contact:

The Career Center
3200 Student Activities Building
Ann Arbor, MI 48109-1316
734/764-7460

<http://careercenter.umich.edu/>

For information about the concentration and degree requirements contact:

School of Natural Resources and Environment
Dana Building
440 Church Street
Ann Arbor, MI 48109-1041
734/764-6453

<http://www.snre.umich.edu/>