

# Natural Resource Sciences

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## Department Information

- **Program Director:**  
Shawn DeKeyser, Ph.D.
- **Email:**  
Edward.Dekeyser@ndsu.edu
- **Department Location:**  
School of Natural Resource Sciences, Hultz 202
- **Department Phone:**  
(701) 231-5368
- **Department Web Site:**  
[www.ndsu.edu/snrs/](http://www.ndsu.edu/snrs/) (<http://www.ndsu.edu/snrs/>)
- **Application Deadline:**  
International applications are due May 1 for fall semester and August 1 for spring semester. Domestic applicants should apply at least one month prior to the start of classes.
- **Credential Offered:**  
Ph.D., M.S., M.N.R.M.
- **English Proficiency Requirements:**  
TOEFL iBT 71, IELTS 6; Duolingo 105

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The Natural Resource Sciences (NRS) program prepares students for the environmental challenges of the 21st century. The Master of Natural Resources Management (M.N.R.M.), Master of Science (M.S.) and the Doctor of Philosophy (Ph.D.) degrees are interdisciplinary and offer a broad, systems- based approach toward managing natural resources. NRS graduates are prepared to compete for and be productive in jobs where issues reach beyond a single discipline or subject area. They have the skills necessary to address problems from a sustainable social-ecological perspective. Flexible interdisciplinary wide-reaching

The M.S. and Ph.D. programs four sub-plan options:

- Entomology
- Natural Resource Management
- Precision Agriculture
- Rangeland Ecology and Wildlife Management
- Soil Science

The M.N.R.M program is coursework only and can be done in-person or online. Through the NRS graduate program, students gain a breadth of knowledge in relevant planning, analysis, and management in a wide variety of natural resource fields from pollinators to pest management, cropping systems to soil health, wetlands to wildlife, and restoration to grazing management.

The NRS graduate program is to provide formal education in a chosen specialty area, introductions to other subject areas, appropriate course work in analytical methods, and research and writing experiences in the general area of natural resource management. Problem recognition, definition, analysis and resolution, along with critical thinking are the ultimate learning objectives.

## Admissions Requirements

The graduate program in Natural Resources Sciences is open to qualified graduates of universities and colleges of recognized standing and meet the Graduate College requirements.

## Financial Assistance

Both research and teaching assistantships may be available through the participating academic units. Application for an assistantship must be made directly to a department. Applicants are considered based on scholarship and potential to undertake advanced study and research. Limited scholarships are available.

To qualify for the M.N.R.M. degree, the candidate must satisfactorily complete a minimum of 30 semester credits of course work in the selected curriculum. This can be done in person or online.

To qualify for the M.S. degree, the candidate must satisfactorily complete a minimum of 30 semester units in the selected curriculum, an oral examination, and a thesis or comprehensive study paper.

To qualify for the Ph.D. degree, the candidate must satisfactorily complete a course of study of no less than 90 semester credits (including 30 semester credits from the M.S. degree or equivalent), both a written and an oral preliminary examination, a research-based dissertation, and an oral final examination on the dissertation. In addition, the candidate presents final public seminar based on the dissertation research. For more specific information, please refer to the School of Natural Resource Sciences website.

Courses are offered by the School of Natural Resource Sciences and other participating academic units. These include:

- Agribusiness and Applied Economics
- Agricultural and Biosystems Engineering
- Agricultural Systems Management
- Anthropology
- Biology
- Botany
- Civil Engineering
- Communication
- Computer Science
- Economics
- Entomology
- Geosciences
- Industrial and Manufacturing Engineering
- Mathematics
- Microbiology
- Philosophy
- Plant Pathology
- Plant Sciences
- Political Science
- Range Science
- Sociology
- Soil Science
- Statistics
- Zoology

Master of Science

### Plan A - Master's Thesis Option

Code	Title	Credits
<b>Entomology, Natural Resource Management, Rangeland Ecology and Wildlife Management, and Soil Science Sub-plans</b>		
Electives (must be didactic credits and approved by advisor)		21
Master's Thesis (ENT 798, NRM 798, RNG 798, SOIL 798)		9
<b>Total Credits</b>		<b>30</b>

Code	Title	Credits
<b>Precision Agriculture Sub-plan</b>		
ABEN 682	Instrumentation & Measurements	3
ABEN 790	Graduate Seminar	1
PAG 654	Applications of Precision Agriculture	3
Electives (must be approved by advisor and include at least 10 didactic credits)		17
PAG 798		6
<b>Total Credits</b>		<b>30</b>

### Plan B - Master's Paper Option

Code	Title	Credits
<b>Entomology, Natural Resource Management, Rangeland Wildlife and Ecology Management, and Soil Science Sub-plans</b>		
Emphasis Area Courses (ENT, NRM, RNG or SOIL)		5

Electives (must be approved by advisor and include at least 21 didactic credits)	21
Master's Paper (ENT 797, NRM 797, RNG 797, SOIL 797)	4
<b>Total Credits</b>	<b>30</b>

Code	Title	Credits
<b>Precision Agriculture Sub-plan</b>		
ABEN 790	Graduate Seminar	1
PAG 654	Applications of Precision Agriculture	3
Electives (must be approved by advisor and include at least 18 didactic credits)		24
PAG 797		2
<b>Total Credits</b>		<b>30</b>

## Emphasis Areas:

- Entomology
- Soil Science
- Natural Resource Management
- Rangeland Ecology and Wildlife Management

Minimum credit requirements are listed below. Specific courses shall be decided by the students' advisor and committee.

Code	Title	Credits
<b>Master's to Ph.D.</b>		
Didactic coursework (700-789, 791; 800-889, 891)		15
Additional Courses		
Doctoral Dissertation (899)		

Code	Title	Credits
<b>Bachelor's to Ph.D.</b>		
Didactic coursework (601-689,691; 700-789, 791; 800-889, 891)		27
15 must be at the 700 or 800 level		
Additional Courses		
Doctoral Dissertation (899)		

**Adnan Akyuz, Ph.D.**

University of Missouri-Columbia, 1994

Research Area/Activity: Applied Climatology and Microclimatology/Climate Based Agricultural Management

**Larry J. Cihacek, Ph.D.**

Iowa State University, 1979

Research Area/Activity: Erosion and Productivity Relationships, Conventional and Alternative Crop Management, Carbon Sequestration, Nutrient Management

**Dennis Cooley, Ph.D.**

University of Rochester, 1995

Research Area/Activity: Ethics (Bioethics, Environmental, Agricultural, Business, Professional, and Theoretical)

**Edward (Shawn) DeKeyser, Ph.D.**

North Dakota State University, 2000

Research Area/Activity: Wetland Ecology, Wetland Assessment and Monitoring, Invasive Species Ecology and Management, Native Prairie and Wetland Restoration

**Tom DeSutter, Ph.D.**

Kansas State University, 2004

Research Area/Activity: Trace Elements, Land Application of Byproducts, Inorganic Soil Chemistry, Soil Environmental Condition

**Paulo Flores, Ph.D.**

Federal University of Rio Grande do Sul, Brazil

Research Area/Activity: Precision Agriculture, Applications of UASs/Drones in Agriculture, UASs/Drone Imagery Analysis, GIS Applications for Precision Agriculture

**Caley Gasch, Ph.D.**

University of Wyoming, 2013

Research Area/Activity: Soil Ecology, Restoration, Reclamation, Monitoring of Degraded Soils

**Benjamin Geaumont, Ph.D.**

North Dakota State University, 2009

Research Area/Activity: Evaluation of Upland Bird Survival Habitat Use, Upland Game Species

**Kelsey Griesheim, Ph.D.**

University of Illinois - Urbana-Champaign, 2022

Research Area/Activity: Soil Fertility, Resource Management, Fertilizer Efficiency, Nitrogen Management

**Christina Hargiss, Ph.D.**

North Dakota State University, 2009

Research Area/Activity: Wetland Assessment, Water Quality, Water Use, and Urban Ecosystems

**Robert Hearne, Ph.D.**

University of Minnesota, 1995

Research Area/Activity: Water Resources Management Institutions, Water Markets, Protected Area Management, Economic Valuation of Environmental Goods and Services

**Torre Hovick, Ph.D.**

Oklahoma State University, 2014

Research Area/Activity: Global change, Avian Ecology, Fire Ecology, Rangeland Management

**Xinhua Jia, Ph.D.**

University of Arizona, 2004

Research Area/Activity: Soil and Water Engineering, Hydrology

**Zhulu Lin, Ph.D.**

University of Georgia, 2003

Research Area/Activity: Water and Soil Resources, Environmental Modeling

**Lindsay Malone, Ph.D.**

University of Wisconsin - Madison, 2022

Research Area/Activity: Climate Smart Approaches to Agriculture, Soil Management, Soil Health, Science Communication

**Jack E. Norland, Ph.D.**

North Dakota State University, 2008

Research Area/Activity: Restoration Ecology, Application of Remote Sensing to Natural Resources Management, Study of Natural Resources Management Problems in a Socio-Ecological Setting Including Urban Systems

**Deirdre Prischmann-Voldseth, Ph.D.**

Washington State University, 2005

Research Area/Activity: Integrated Pest Management, Biological Control, Insect Ecology

**David A. Rider, Ph.D.**

Louisiana State University, 1988

Research Area/Activity: Insect Systematics

**David Ripplinger, Ph.D.**

North Dakota State University, 2012

Research Area/Activity: Bioproducts / Bioenergy Economics

**David Roberts, Ph.D.**

Oklahoma State University, 2009

Research Area/Activity: Agricultural Production Methods, Precision Agriculture Technologies, Biofuels Policy

**Travis Seaborn, Ph.D.**

Washington State University, 2019

Research Area/Activity: Conservation Biology, Climate Change, Genetics, Social-Ecological Systems, Fish and Wildlife

**Kevin Sedivec, Ph.D.**

North Dakota State University, 1994

Research Area/Activity: Plant Community Ecology, Grazing and Wildlife Interaction, Reclamation of Energy Developed Lands, Range Nutrition, Range Monitoring

**Dean D. Steele, Ph.D.**

University of Minnesota, 1991

Research Area/Activity: Irrigation and Environmental Engineering

**Joseph D. Zeleznik, Ph.D.**

Michigan State University, 2001

Research Area/Activity: Dendrochronology of Ponderosa Pine and Bur Oak, Bur Oak Regeneration, Riparian Forest Restoration