

Natural Resources Management

Department Information

- **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/>)
- **Credential Offered:**
B.S., Minor
- **Official Program Curriculum:**
bulletin.ndsu.edu/undergraduate/program-curriculum/natural-resources-management/ (<http://bulletin.ndsu.edu/undergraduate/program-curriculum/natural-resources-management/>)

With increasing human pressure and a growing need to balance competing demands, we need new and better ways to manage our natural resources. The natural resources management (NRM) undergraduate program gives students flexible and powerful options to pursue their studies. Core courses provide a broad foundation in the biological and physical/earth sciences. Students then choose one of six emphases to further their skills and prepare for a variety of careers.

THE PROGRAM

The NRM undergraduate program is offered by the School of Natural Resource Sciences (SNRS) at North Dakota State University (NDSU). We are an interdisciplinary program that focuses on the science and management of natural resources. The program draws upon courses and resources across SNRS, including Entomology, Natural Resource Management, Range Science, and Soil Science, as well as additional programs and colleges across NDSU.

Students in NRM acquire a broad background in natural resources as well as an in-depth study in an area of interest. This exposure to multiple disciplines helps prepare students to find solutions to complex environmental problems. The undergraduate program curriculum is divided into core classes required of all students and an emphasis selected by the individual student from six areas of interest.

NRM Core – This group of courses provides each student a broad foundation while satisfying NDSU's General Education requirements.

NRM Emphasis – NRM offers six emphasis areas, each with their own combination of course requirements and electives. The emphases allow students to choose courses from a diverse group of approved electives.

- **Entomology** - Entomology is the study of insects and how they interact with people and with the environment. This emphasis area provides a strong scientific foundation with a focus on insects, how they are studied, and their management.
- **Environmental Sustainability, Outreach, and Policy** - Focuses on how to deal with environmental and social changes in a sustainable way. The emphasis area prepares students to work on environmental policy and public outreach combined with strategic thinking to predict sustainable paths on pressing environmental issues.
- **Rangeland Ecology** - Focuses on the broad study of native, non-forested ecosystems that cover more than 50% of the earth's land. These areas are managed as natural ecosystems to provide services that can benefit society. This emphasis area will prepare students by covering a variety of ecological topics including wildlife management, grassland restoration, and fire ecology.
- **Rangeland Livestock Production** - Focuses on the management of rangelands and grasslands for optimum livestock production and environmental benefits for society. Students will cover land management fields, the work of agencies and the private sector, as well as ranching operations.
- **Soil Science** - Soil Science is the study of the soil as a component of natural and man-made systems and is the key factor in food production and is at the forefront of environmental and natural resource issues such as land use, soil contamination, ground water quality and waste disposal.
- **Water, Habitat, and Environmental Management** - Focuses in an interdisciplinary way on the environmental management of ecosystems. This emphasis area teaches basic and hands-on principles in the management of water, habitat (animals and plants), and the environment as a whole.

THE FACULTY

Our faculty come from across the School of Natural Resource Sciences and are dedicated to providing quality instruction and advising.

CAREER OPPORTUNITIES

NRM graduates are prepared with the skills and knowledge for facing complex problems in natural resources, agriculture, and the environment. Common career options include natural resources jobs with government agencies at the federal, state, or local level; agricultural, conservation

and environmental non-profit organizations, extension and outreach positions, and private sector employment, including consulting in addition to preparation for advanced degrees.

Sample Program Guide

Please note this is a sample program guide and not an official curriculum. Actual student schedules for each semester will vary depending on start year, education goals, applicable transfer credit, and course availability. Once admitted, students are encouraged to work with their assigned academic advisor on a regular basis to review degree progress.

First Year			
Fall	Credits	Spring	Credits
BIOL 150 & 150L		4 BIOL 151 & 151L	4
ENGL 110		3 ENGL 120	3
NRM 150		1 Hum. & Fine Arts Elective	3
NRM 225		3 MATH 103	3
RNG 136		3 Wellness Gen Ed	2
		14	15
Second Year			
Fall	Credits	Spring	Credits
CHEM 121 & 121L		4 EMGT, POLS, or SOC elective	3
COMM 110		3 SOIL 210	3
ECON 201		3 STAT 330	3
ENT 210		3 Emphasis Core or Elective Credits	6
RNG 213		3	
		16	15
Third Year			
Fall	Credits	Spring	Credits
ENGL 321, 324, or 459		3 NRM 421	3
PHIL 215 or 225		3 RNG 452 or GEOG 455	3
Emphasis Core or Elective Credits		9 Emphasis Core or Elective Credits	9
		15	15
Fourth Year			
Fall	Credits	Spring	Credits
Emphasis Core or Elective Credits		15 NRM 462, RNG 462, or SOIL 462	3
		Emphasis Core or Elective Credits	12
		15	15

Total Credits: 120

Natural Resources Management Emphasis Areas

Entomology

Code	Title	Credits
BIOL 364	General Ecology	3
BIOL 450	Invertebrate Zoology	3
BIOL 475	Conservation Biology	3
ENT 350	General Entomology	3
ENT 431	Principles of Insect Pest Management	3
ENT 470	Insect Ecology	3
PLSC 110	World Food Crops	3

RNG 450	Range Plants	3
or BIOL 461	Plant Ecology	
or PLSC 380	Principles of Plant Physiology	
Required 6 additional PLSC/SOIL elective credits		6
Required 15 additional elective credits		15
Total Credits		45

environmental sustainability, outreach, and policy

Code	Title	Credits
BIOL 364	General Ecology	3
ECON 481	Natural Resource Economics	3
HIST 434	Environmental History	3
or HIST 435	World Environmental History	
NRM 401	Urban-Ecosystem Management	3
NRM 420	Sustainable Scenarios in Natural Resources Management	3
NRM 431	National Environmental Policy Act & Environmental Impact Assessment	3
200-level or higher POLS, SOC, or EMGT		6
Required 26 additional elective credits		26
Total Credits		50

rangeland ecology

Code	Title	Credits
ANSC 114	Introduction to Animal Sciences	3
BIOL 364	General Ecology	3
BIOL 452	Ichthyology	3
or BIOL 454	Herpetology	
or BIOL 456	Ornithology	
or BIOL 458	Mammalogy	
BIOL 461	Plant Ecology	3
BIOL 475	Conservation Biology	3
or BIOL 476	Wildlife Ecology and Management	
NRM 431	National Environmental Policy Act & Environmental Impact Assessment	3
NRM 453	Rangeland Resources Watershed Management	3
or NRM 454	Wetland Resources Management	
PLSC 380	Principles of Plant Physiology	3
RNG 450	Range Plants	3
RNG 451	Ecology of Fire-Dependent Ecosystems	3
RNG 456	Ecological Restoration	3
RNG 458	Grazing Ecology	3
SOIL 217	Introduction to Meteorology & Climatology	3
SOIL 351	Soil Ecology	3
or SOIL 410	Soils and Land Use	
or SOIL 444	Soil Genesis and Survey	
Required 9 additional approved elective credits		9
Total Credits		51

rangeland livestock production

Code	Title	Credits
ANSC 114	Introduction to Animal Sciences	3
ANSC 220	Livestock Production	3
ANSC 223	Introduction to Animal Nutrition	2
ANSC 357	Animal Genetics	3

NRM 431	National Environmental Policy Act & Environmental Impact Assessment	3
PLSC 315	Genetics	3
PLSC 320	Principles of Forage Production	3
PLSC 323	Principles of Weed Science	3
RNG 450	Range Plants	3
RNG 456	Ecological Restoration	3
RNG 458	Grazing Ecology	3
SOIL 217	Introduction to Meteorology & Climatology	3
SOIL 351	Soil Ecology	3
or SOIL 410	Soils and Land Use	
or SOIL 444	Soil Genesis and Survey	
Required 9 additional approved elective credits		9

Total Credits **47**

soil science

Code	Title	Credits
CHEM 240	Survey of Organic Chemistry	3
or BIOC 260	Elements of Biochemistry	
or MICR 202 & 202L	Introductory Microbiology and Introductory Microbiology Lab	
GEOL 105 & 105L	Physical Geology and Physical Geology Lab	4
MATH 105	Trigonometry	3
PHYS 211 & 211L	College Physics I and College Physics I Laboratory	4
PLSC 110	World Food Crops	3
PLSC 225	Principles of Crop Production (or 300/400 RNG Elective)	3
PLSC 380	Principles of Plant Physiology	3
SOIL 217	Introduction to Meteorology & Climatology	3
SOIL 322	Soil Fertility and Fertilizers	3
SOIL 351	Soil Ecology	3
SOIL 410	Soils and Land Use	3
SOIL 433	Soil Ecohydrology and Physics	3
SOIL 444	Soil Genesis and Survey	3
SOIL/NRM 454	Wetland Resources Management	3
Required 6 additional approved elective credits		6

Total Credits **50**

water, habitat, and environmental management

Code	Title	Credits
BIOL 364	General Ecology	3
BIOL 475	Conservation Biology	3
or BIOL 476	Wildlife Ecology and Management	
ECON 481	Natural Resource Economics	3
HIST 434	Environmental History	3
or HIST 435	World Environmental History	
NRM 264	Natural Resource Management Systems	3
NRM 402	River and Stream Resource Management	3
or NRM 454	Wetland Resources Management	
or SOIL 410	Soils and Land Use	
NRM 431	National Environmental Policy Act & Environmental Impact Assessment	3
NRM 453	Rangeland Resources Watershed Management	3

Required 26 additional approved elective credits	26
Total Credits	50