NATURAL RESOURCES M.S.

All students must meet the Requirements for the Master's Degree

OVERVIEW

The Master of Science in Natural Resources prepares students to pursue studies in advanced disciplinary topics. They will learn scientific and practical methods and develop technical skills for understanding ecological, physical, social, political, and economic aspects of environmental and natural resource issues.

Students choosing to pursue research in this program will take 15 to 27 credits of advanced course work and write and defend a thesis or project. Students will, by default, be enrolled in the degree without a designated concentration area and may pursue a general degree in Natural Resources. Students may also select to further their knowledge and proficiency within 1 of 5 Concentration areas in Natural Resources:

Aquatic Ecology and Watershed Science (p. 2)

Environment, Society and Public Affairs (p. 2)

Environmental Thought and Culture (p. 2)

Forestry (p. 2)

Wildlife Biology (p. 2)

Students and their graduate studies committee work closely together to design these individualized curricula, following the minimum M.S. degree requirements for course and research credits. Students are required to meet all Rubenstein School requirements, plus any additional requirements that may be determined by the Studies/Thesis Committee.

Students may also pursue a MELP/MSNR dual degree with the Vermont Law School.

Students choosing to emphasize advanced course work (27 credits) may pursue a project-based track in which they will often engage in academic and work experiences leading to development of professional skills typically emphasizing conservation leadership, policy, ecological planning, sustainable forestry, and more. At least 3 project research credits and a defendable final project will complement the academic course work.

SPECIFIC REQUIREMENTS

Requirements for Admission to Graduate Studies for the Degree of Master of Science

Completion of the Graduate College Application form. Undergraduate degree in an appropriate field in the sciences, social sciences, or humanities/fine arts, and three letters of recommendation attesting to the candidate's academic potential for graduate work and motivation for pursuing this degree. Most successful applicants to this highly competitive program have strong academic credentials and experience in an environmental or natural resource-related job, internship, or other related activity. A potential faculty advisor holding an appointment in the Rubenstein School of Environment and Natural Resources and the Graduate College who will agree to serve as the student's primary mentor. As of 2018, the Rubenstein School no longer requires a GRE exam for admissions.

Minimum Degree Requirements

The Master of Science requires from 15 to 27 credits of course work in related fields, at least 6 of which must be at the 6000-level or above, including:

Requirement Description		Credits
NR 6070	Applied Ecol., Env. & Society	2
NR 6060	Envisioning a Sust Future	2
A public research seminar presented at the annual graduate student symposium, a research proposal, a comprehensive examination, at least 3 of project research or 6 to 15 credits of thesis research, and an oral defense of the thesis or project are also required.		

COMPREHENSIVE EXAMINATION

A written comprehensive examination is required for all master's students. Generally taken during a student's third or fourth semester, the examination will cover broad knowledge of the student's discipline. The questions and content of the examination and its form (written, or written and oral depending on the requirements of each concentration) are determined by the Studies Committee and will be discussed with the student well in advance of the exam.

The format of the exam will be as follows:

- In no instance will the written exam period be less than 2 days or more than 7. The committee members will specify whether students will have access to outside materials such as books, lecture notes, articles, reading notes, etc., to develop responses. In order to encourage succinct and focused writing, committee members are encouraged to specify a maximum page length for answers to each question.
- A student's primary advisor will collect the questions from each committee member and provide the student 1 set of questions per day (day defined as 8-12 hours). The student will send the answer(s) to the full committee at the end of each day.
- For those in concentrations whose Studies Committees elect to require an oral exam, the oral exam will focus on the subject areas from the written exam, particularly any weak areas. The oral exam, when applicable, will follow within 1 month of satisfactory completion of written exam. The underlying intent is an opportunity to provide clarity to weak areas of the written portion of the exam. Therefore, questions are limited to the subject areas originally designated and seek to discern if you have the knowledge that is essential to understand information in your field of study.

- The oral exam, as applicable, shall be presided over by the Chair of the Studies Committee. Its recommended duration is 2 hours and should not exceed 3.

Requirements for Advancement to Candidacy for the Degree of Master of Science

Successful completion of any required courses, and at least 15 graded graduate credits earned in compilation of the graduate GPA. A GPA of 3.00 or greater is also required. After successfully completing both the Thesis/Project Proposal and Written/Oral Comprehensive Examination, students will be advanced to candidacy for the M.S.

AQUATIC ECOLOGY AND WATERSHED SCIENCE CONCENTRATION

The Aquatic Ecology and Watershed Science concentration provides students with advanced understanding of aquatic ecosystems and their watersheds, and the skills and methodologies required to analyze and solve technical problems concerning the effects of human activities on these systems. Current areas of research emphasis include watershed processes and management; stream and lake ecology; fish ecology and fisheries management; aquatic ecotoxicology; pollutant studies; biogeochemical dynamics, and the modeling of aquatic systems, processes and populations.

Minimum Degree Requirements

In addition to the general M.S. in Natural Resources requirements, this concentration requires at least 11 credits in Aquatic Ecology and Watershed Science, or related fields (approved by the student's studies committee). Either the student or the student's committee may request an oral exam to address any questions or areas of weakness that arise from the written exam.

ENVIRONMENT, SOCIETY AND PUBLIC AFFAIRS CONCENTRATION

Through the M.S. concentration in Environment, Society and Public Affairs, graduate students build theoretical understanding, analytical skills, and applied knowledge in the social dimensions of environmental and natural resource issues. Specific areas in which students may build understanding, skills, and knowledge include:

- environmental policy and planning
- community studies, human behavior, and environmental sociology
- ecological economics
- park and wilderness management
- public participation, conflict resolution, and decision making
- geospatial analysis

Minimum Degree Requirements

In addition to the general M.S. in Natural Resources requirements, this concentration requires at least 11 credits in Environment, Society and Public Affairs, or related fields (approved by the student's studies committee). Either the student or the student's committee may request an oral exam to address any questions or areas of weakness that arise from the written exam.

ENVIRONMENTAL THOUGHT AND CULTURE CONCENTRATION

In this concentration graduate students build interdisciplinary analytical skills and theoretical understanding of environmental and natural resource issues, with a focus on their human, ethical, and cultural dimensions. Specific areas include: environmental communication and cultural studies; environmental education and interpretation; environmental ethics and philosophy; environment, development, peace, and global justice studies; environmental politics and advocacy; religion and environment; sustainability; and sustainable development.

Minimum Degree Requirements

In addition to the general M.S. in Natural Resources requirements, this concentration requires at least 11 credits in Environmental Thought and Culture, or related fields (approved by the student's studies committee). Either the student or the student's committee may request an oral exam to address any questions or areas of weakness that arise from the written exam.

FORESTRY CONCENTRATION

The goal of this Master of Science concentration is to provide graduate students with advanced training in forest science and the opportunity to further their knowledge and proficiency in some specialized aspect of forestry. The faculty has research interests which span the broad areas of ecology, management, pathology, physiological ecology, sustainable forestry, and community forestry.

Minimum Degree Requirements

In addition to the general M.S. in Natural Resources requirements, this concentration requires at least 11 credits in Forestry, or related fields (approved by the student's studies committee). Either the student or the student's committee may request an oral exam to address any questions or areas of weakness that arise from the written exam.

WILDLIFE BIOLOGY CONCENTRATION

This Master of Science concentration is designed to provide a vehicle for a wildlife biologist to develop research abilities and pursue a specialized course of study. Current areas of research emphasis include applied avian ecology, behavioral ecology, game management, non-game wildlife populations, reserve design, and landscape ecology.

Minimum Degree Requirements

In addition to the general M.S. in Natural Resources requirements, the Wildlife Biology concentration requires at least 11 credits in Wildlife Biology, or related fields (approved by the student's studies committee). Either the student or the student's committee may request an oral exam to address any questions or areas of weakness that arise from the written exam.