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Undergraduate Programs

The Department of
**Forest Resources and
Environmental Conservation**

The Department of Forest Resources and Environmental Conservation (FREC) at Virginia Tech is one of the top programs in the United States dealing with forestry and natural resource management and conservation. Our exceptional education, research, and outreach programs are diverse and approach critical natural resource issues from many perspectives. Our undergraduate degrees focus on using the latest research and technology to manage and conserve our forests and natural resources wisely for the benefit of society. From the management of protected areas and economic policy to forest soil productivity, urbanization, and genomics, we seek to discover new knowledge and technology to address global challenges.

The programs of study in FREC are offered in five majors, some of which has options among which students can choose their area of concentration:

Forestry:

Forest Resources Management
Forest Operations and Business
Urban Forestry

Natural Resources Conservation:

Conservation and Recreation Management
Environmental Education

Environmental Resources Management:

Environmental Informatics

Water: Resources, Policy, and Management

Small class sizes and faculty dedicated to teaching afford FREC students the chance to get to know their professors personally. Wide varieties of academic and professional opportunities are available through undergraduate research, student organizations, and public outreach programs organized by the faculty.

SCHOLARSHIP OPPORTUNITIES

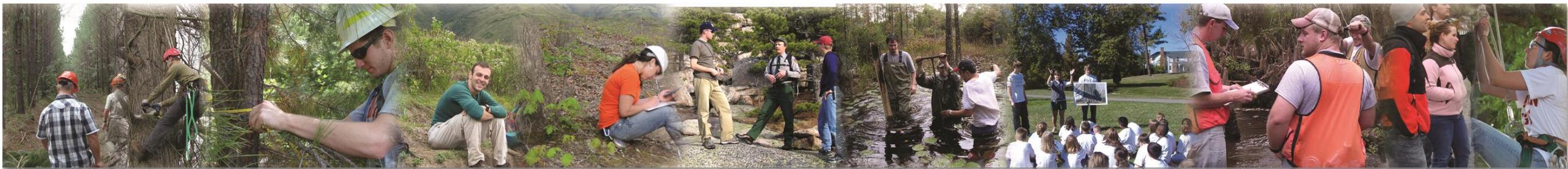
FREC undergraduates are eligible to apply for a number of scholarships provided by alumni and friends of the department, including the Stuermann Memorial Scholarships, which provide \$7,000 annually for three years. There are also college-wide scholarships available to students in the College of Natural Resources and Environment. Highly qualified students will reap great benefits from the generous support of these donors. Applications for all scholarships must be submitted in March of each year for the following academic year.

EDUCATION ABROAD

The study abroad program offers excellent international experiences through courses taught in a wide variety of countries. Courses are offered to students from any major in FREC who have completed at least one year of on-campus instruction and have met the GPA standard. Recent course have traveled to New Zealand, Costa Rica, Panama, Ireland and even Antarctica. In these courses, students examine global issues that affect the sustainable management and use of natural resources. Specific topics include natural resources conservation, water management, ecotourism, wood products manufacturing, forest certification, and wildlife protection. Courses typically travel to stunning national parks, forests, wildlife reserves, and coastlines and you will learn from direct field experience and lectures from knowledgeable local experts and practitioners.

FACILITIES

The department has over 2,000 acres of forested land near the main campus for educational and research use, as well as on-campus laboratories, greenhouses, and other facilities. Computer labs offer students access to state-of-the-art technology tools for natural resource management.



FORESTRY MAJOR

The *Forest Resources Management Option* emphasizes the biological and social sciences needed to make sound management decisions concerning regeneration, growth, protection, management, and sustainability of forest ecosystems. Graduates pursue careers in the forest industry, public agencies, non-governmental agencies, and private forestry companies.

The *Forest Operations and Business Option* prepares students for an active role in assuring that the sale, harvest, and conversion of standing timber to products is done in an efficient, economic, safe, and environmentally sound manner. Graduates pursue careers in forest industry, national and state forest services, forestry consulting firms, and the equipment industry.

The *Urban Forestry Option* is a multidisciplinary degree program focusing on the management of forest resources in cities, towns, and other urbanized environments. Students take classes in Horticulture, Landscape Architecture, and Urban Affairs and Planning to customize a blended curriculum that supports their career goals. Graduates pursue careers in municipal forestry, commercial tree care, utility vegetation management, urban environmental consulting, public agencies, and nonprofit organizations.

All of the options under the Forestry Major are accredited by the Society of American Foresters (SAF), the national scientific and educational organization representing the forestry profession in the United States.

NATURAL RESOURCES CONSERVATION MAJOR

The *Conservation and Recreation Management Option* prepares students to be the managers, planners, and program administrators who deal with today's complex conservation challenges. Courses in ecological, natural, and social sciences, planning, tourism, and business management, are combined with a deep understanding of recreation resources. Graduates pursue careers in government and non-government organizations as well as commercial recreation and green businesses.

The *Environmental Education Option* offers a balance of natural sciences, social sciences, and the humanities to give students a well-rounded base of knowledge about the natural world. Graduates pursue careers in nature education, environmental interpretation, resource education, and communications, or they may pursue licensure for an elementary education career.

ENVIRONMENTAL RESOURCES MANAGEMENT MAJOR

Students who choose *Environmental Resources Management* major receive a solid background in a wide variety of environmental issues, including forest resources, soils, water, environmental law, policy and planning, and environmental economics. Graduates pursue careers in public agencies, private industry, and firms that deal with forested wetland protection, endangered species, the urban-rural interface, and sustainability.

WATER: RESOURCES, POLICY, AND MANAGEMENT MAJOR

The *Water: Resources, Policy, and Management* major addresses the protection and development of water resources by providing the interdisciplinary training required to meet water challenges and opportunities now and in the future. An advising committee with representatives from five colleges will oversee the degree.

ENVIRONMENTAL INFORMATICS

Environmental Informatics applies information science to the management of natural resources. It includes aspects of geographic information, mathematical and statistical modeling, remote sensing, database management, knowledge integration, and decision-making. The need for professionals trained in technical and analytical approaches to environmental problems is rising dramatically.

Minors in Forestry, Urban Forestry, Recreation, and Watershed Management

The *Forestry* minor is ideal for those in related natural resource fields such as wood products, fisheries, wildlife, and recreation who would like to broaden their ability to work with forest-related issues. Expertise is gained in ecology, forestry fundamentals, tree identification, and land measurements.

The *Urban Forestry* minor was developed for students majoring in related disciplines such as traditional forestry, horticulture, landscape architecture, and urban planning. The coursework provides basic competencies in dendrology, forest ecology, arboriculture, and urban forestry for managing forest resources in urbanized areas.

The *Recreation* minor in Natural Resource Recreation emphasizes the tools and perspectives needed to manage and maintain high quality recreation resources and experiences with emphasis on the ecology of the setting, the psychology of recreation experiences, and the management science behind trails, parks, scenery and facilities management.

The *Watershed Management* minor was developed to teach students about water quality, stream and wetland ecology, and hydrology. Graduates pursue careers in positions such as hydrologists or water quality foresters with the USDA and other state agencies.