For further career exploration and to learn what you can do with these majors, go to:
http://career.oregonstate.edu/students/career-trail/know-world-work/what-can-i-do-degree

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<th>Environmental Sciences (ENSC)</th>
<th>Fisheries &amp; Wildlife (FW)</th>
<th>Natural Resources (NR)</th>
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**STRUCTURE OF MAJOR**
Interdisciplinary - ENSC has no teaching faculty & coursework is from across the university

**ADVISING**
Annual; mandatory

Quarterly; mandatory

Quarterly

**CURRICULUM**

**Biology**
3 courses: Principles of Biology for Science Majors - BI 211, 212, 213 (in-person) or BI 204, 205, 206 (online thru OSU Ecampus).

**Ecology**
BI 370

**Math**
2 courses: MTH 251, 252 (Calculus)

**Statistics**
2 courses: ST 351, 352

**Chemistry**
3 courses: General Chemistry - CH 121, 122, 123 or higher.

**Physics**
2 courses: PH 201, 202 (online with Chemeketa CC). PH 203 is recommended for students pursuing graduate degree with science focus.

**Experiential Learning**
1 course: 3-credits of Experiential Learning, at minimum. Choices include online field or GIS courses, or an in-person internship experience (arranged by student and approved by Experiential Learning Coordinator).

**Specialization**
Choose from 8 (27 credits): Applied Ecology option; Aquatic Biology, Conservation, Resources & Sustainability option; Earth Systems; Environmental Agriculture option; Environmental Policy & Economics option; Environmental Water Resources option; Geographic Information Science certificate.

**Self-designed (24 credits) in FW 307 and in consultation with faculty**

**Choose from 5 (40 credit): Fisheries & Wildlife Conservation option; Human Dimensions in Natural Resources option; Natural Resource Policy option; Urban Forestry option; Landscape Analysis option; or Student-Designed Individualized Option in consultation with advisor.**

**CAREER AREAS**
Technical science or outreach related toward understanding and solving environmental problems

Conservation, ecology and management of fish, wildlife and their habitats.

Management of natural ecosystems with an understanding of ecological, sociological, and economic factors.

**EMPLOYERS**
State and federal government agencies, conservation and nonprofit organizations, research field stations and laboratories, health/safety departments incl. hazardous materials management, K-12 schools, environmental education/nature centers, environmental or sustainability divisions of private companies, environmental consulting firms.

State, federal and local government agencies, conservation and nonprofit organizations, research field stations and laboratories, zoos and aquariums, environmental education centers, environmental consulting firms.

State, federal, and local government agencies; private companies; conservation NGOs, consulting firms, environmental education organizations and K-12 schools.

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* Students may take equivalent transfer courses from other institutions, with advisor's prior approval.
** Some positions may require further education and/or experience
*** Not inclusive
Comparison of Three Bachelor of Science (BS) Degrees Online: Environmental Sciences (ENSC)  
Fisheries and Wildlife Science (FW)  
Natural Resources (NR)

The ENSC, FW, and NR degrees have similarities, but also important differences. We recommend you review this document carefully so that you can make an informed choice about your major. The academic advisors in ENSC, FW, and NR urge you to study program differences in detail before choosing a degree path. Know each program’s strengths and challenges, and assess YOUR interests and academic strengths. Changing from one program to another in mid-stream is likely to be costly to you in time and money. Pursuing a degree for which you are not academically well-suited is likely to hurt your grades and ultimately your ability to complete that program.

All coursework can be completed online through OSU, or an affiliated community college through the Degree Partnership Program. Students who struggle with mathematics and statistics will benefit from taking those classes early in their program of study -- and locally rather than online -- before proceeding too far along any of these degree paths. Competency in these classes is a key indicator of potential success in these degrees.

OVERVIEW

Each degree develops knowledge and skills, particularly in the specialization areas within each, to enable students to target different career or graduate school opportunities; nonetheless all three degrees can lead to the same job, although the level of preparation for that job may vary.

The Environmental Sciences (ENSC) degree focuses on examining environmental issues from scientific perspectives, while also providing background in environmental ethics, economics, and policy. ENSC students use basic and applied science to address environmental issues. ENSC students learn how to conduct research and provide potential solutions to environmental problems, predict environmental change, participate in responsible management of the environment and examine the critical relationship between humans and their environment. ENSC students focus on the science and policy aspects of environmental issues. Students choose from 8 specialization areas.

The Fisheries and Wildlife Science (FW) degree focuses on conservation, ecology, sustainable use, and management of fish and wildlife and their terrestrial, aquatic and marine habitats. FW students use basic and applied science to address issues related to fish and wildlife. FW students learn to make decisions on conserving biodiversity, restoring ecological systems and maintaining sustainable use of fish and wildlife populations using fundamental ecological principles and consideration of social influences on conservation. Students develop a unique, individualized 24-credit specialization.

The Natural Resources (NR) degree exposes students to a breadth of natural resources disciplines, with emphasis on both the science and management of resources, and the social, economic and political influences on resource use and environmental policy. NR students focus on management of resources with an understanding of ecological, sociological and economic factors. NR students gain technical and scientific knowledge spanning a number of natural resource and social science fields, and learn to understand their interdependence. Ecampus Natural Resources students choose from three specialization areas (“options”) or may design their own specialization.
CORE CURRICULA

ENSC and NR are interdisciplinary programs while FW is discipline-specific. All degree programs require courses in basic sciences, although they differ in the level and depth of requirements in these areas. In general, the ENSC and FW curricula require more technical and laboratory courses than does the NR curriculum including biology for science majors, three chemistry courses, and a higher level of math and statistics. ENSC requires physics while FW provides a selection of physical sciences, including physics. The NR curriculum contains less statistics and math (it does not require calculus) and fewer laboratory and physical sciences than do the other two programs. However, certain emphases in NR might necessitate completion of chemistry and math beyond the degree’s minimum requirements. The NR program incorporates a wider range of natural resource courses than do the ENSC or FW programs, with an emphasis on management applications of scientific knowledge. For detailed information, see (link to matrix).

All students in ENSC, FW and NR must complete a year-long sequence in laboratory biology. ENSC and FW students take a higher level of biology (equivalent to the OSU sequence for biology majors -- BI 211/212/213 or BI 204/205/206 online) than do many NR students, which may be taken online through OSU, or in-person with prior approval. NR students are encouraged to take the same biology sequence, but are permitted to complete the equivalent of the OSU non-majors biology sequence (BI 101/102/103) either locally or online through an Oregon community college.

In addition, the ENSC and FW curricula include an experiential learning requirement which is often met through an internship or research experience, allowing for hands-on experience. The ENSC curriculum requires a minimum of 3 credits of experiential learning which students can meet either through completion of an internship or a supervised research project (with the assistance of an Experiential Learning Coordinator), or by taking a class that involves hands-on learning. The FW curriculum requires two internships with a minimum of 4 credits; an Internship Coordinator assists FW students in locating and developing an internship that meets their academic and professional goals. The NR degree has no such requirement, though students are strongly encouraged to obtain internships or volunteer in natural resource-related work of their choice.

SPECIALIZATIONS

Students in each major choose a specialization, option or minor, with the exception of post-baccalaureate students in FW. Specializations are designed to help students focus their academic interest into a specialized area of study.

ENSC online students choose from 8 specialization areas – 1) Applied Ecology option, 2) Aquatic Biology option, 3) Conservation, Resources & Sustainability option, 4) Earth Systems, 5) Environmental Agriculture, 6) Environmental Policy & Economics option, 7) Environmental Water Resources, 8) Geographic Information Science Certificate.

FW students develop a unique, individualized 24-credit specialization in consultation with faculty. FW 307 is a required class in which students develop their specialization.

NR online students choose from 5 standard specialization areas – 1) Fisheries and Wildlife Conservation option, 2) Human Dimensions in Natural Resources option, 3) Natural Resource Policy option, and 4) Urban Forestry option; and 5) Landscape Analysis option. Or, students may design their own option.
CAREERS AND OTHER POST-GRADUATE OPPORTUNITIES

Careers for ENSC undergraduates vary depending on the student’s chosen specialization, but tend to deal with research and monitoring; regulatory, management, policy, and public education related to a range of environmental and resource management issues. Careers will often involve research or support of research activities – assessing problems and potential solutions from scientific perspectives.

Careers for FW undergraduates tend to deal directly with fish, wildlife and their habitats. Graduates may be involved with management, research, education or policy related to all aspects of fish and wildlife—in the United States or globally, including habitat restoration, endangered species conservation, game species harvest, law enforcement, marine science, behavior, genetics, international or exotic wildlife ecology, wildlife husbandry, or fish aquaculture.

Careers for NR undergraduates vary depending on the student’s chosen speciality option (concentration within the degree). Some graduates focus on management of specific lands, water, and other resources, in roles as planners, ecologists, restoration specialists, researchers, analysts, and communication specialists. Others focus on public policy and education.

Graduates from all three programs go on to work for federal, state and local land management and planning agencies, non-governmental organizations, private firms, and legislative bodies concerned with policy and laws. Some graduates of all programs continue on to graduate school, law school, or pursue careers in teaching. Some graduates of FW continue on to veterinary school. Graduates of the ENSC and FW program may be particularly well suited for graduate work in science because the curriculum includes the basic science prerequisites often required for graduate study.

SUMMARY

There is overlap among the ENSC, FW, and NR degrees but each is intended to funnel students to different areas of expertise. FW graduates are aimed at careers that focus on management, conservation, research, policy, education and enforcement as they relate specifically to fish or wildlife; NR graduates are aimed at careers that focus on management of all natural resources, including but not restricted to fish and wildlife, and also to careers in public education (as in NR interpretation), enforcement and policy; ENSC graduates are aimed at research and monitoring positions but can also work in management-related careers. Again, there is overlap among the degrees and it is fundamentally the specialization and the kinds of internship or work experiences that students acquire that will drive their particular choices and options.

For more information, go to:

Environmental Sciences: http://ecampus.oregonstate.edu/online-degrees/undergraduate/es/

Fisheries and Wildlife: http://ecampus.oregonstate.edu/online-degrees/undergraduate/fw/

Natural Resources: http://ecampus.oregonstate.edu/online-degrees/undergraduate/nr/

What Can I Do With This Major? http://career.oregonstate.edu/students/career-trail/know-world-work/what-can-i-do-degree