

NATURAL RESOURCES UNDERGRADUATE MAJOR (BS, HBS)

This major offers the following option(s):

- Conservation Law Enforcement (<http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/conservation-law-enforcement-option/>)
- Ecological Restoration (<http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/ecological-restoration-option/>)
- Fish and Wildlife Conservation (<http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/fish-wildlife-conservation-option/>)
- Forest Ecosystems (<http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/forest-ecosystems-option/>)
- Human Dimensions in Natural Resources (<http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/human-dimensions-natural-resources-option/>)
- Individualized Specialty (<http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/individualized-specialty-option/>)
- Integrated Conservation Analysis (<http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/integrated-conservation-analysis-option/>)
- Landscape Analysis (<http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/landscape-analysis-option/>)
- Natural Resource Education (<http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/natural-resource-education-option/>)
- Policy and Management (<http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/policy-management-option/>)
- Urban Forest Landscapes (<http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/urban-forest-landscapes-option/>)
- Wildland Fire Ecology (<http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/wildland-fire-ecology-option/>)

Also available at OSU-Cascades and via Ecampus.

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Students who graduate with a BS degree in Natural Resources from OSU should be able to integrate technical field or laboratory skills with analytical skills to solve critical natural resource problems. The

curriculum is designed to help students acquire knowledge about a range of natural resource issues, work in interdisciplinary teams, and deal with social and political aspects of resource management.

Students acquire knowledge in biophysical and social sciences, math, and statistics. They will learn holistic resource management approaches that emphasize the interconnectedness of humans and the environment. In addition, students will develop a toolbox of resource management skills such as communication, collaboration, analysis, assessment, and planning. They explore conservation and management of key resources which include fish and wildlife, land and water resources, and a wide range of ecosystems from forests to rangelands. Students develop disciplinary depth in a focused area through a required specialty option, choosing from a number of pre-approved options, or creating an individualized (student designed) specialty option.

The Natural Resources major is also available at the OSU-Cascades campus in Bend and through the OSU Ecampus program. The Natural Resources major is an interdisciplinary program administered by the College of Forestry.

Major Code: 671

- Describe ecological processes, including human impacts that influence ecosystem change, natural succession and the future sustainability of natural resources.
- Characterize natural resources and be able to quantify at least one of these resources.
- Envision desired future conditions in an area to achieve a set of natural resource-related objectives, prescribe management actions needed to achieve those objectives, and evaluate success of these actions.
- Describe how the use, management, and allocation of natural resources are affected by laws, policies, economic factors (both market and non-market), and characteristics (including demographic, cultural, ethnic, and “values” differences) of private and public resource owners and users.
- Communicate effectively, orally and in writing, with audiences of diverse backgrounds.
- Work effectively with, and within, interdisciplinary and diverse groups to resolve management problems and achieve management objectives.

Only two courses used to complete the Natural Resources major requirements may be taken S/U.

The Natural Resources Specialty option requires a minimum GPA of 2.25.

Code	Title	Credits
Interdisciplinary Foundations (10 credits)		
FES 485	*CONSENSUS AND NATURAL RESOURCES	3
NR 201	MANAGING NATURAL RESOURCES FOR THE FUTURE	3
NR 455	NATURAL RESOURCE DECISION MAKING	4
Advanced Communication (3-4 credits)		
Select one course from the following:		3-4
COMM 321	INTRODUCTION TO COMMUNICATION THEORY	
COMM 322	SMALL-GROUP PROBLEM SOLVING	
COMM 324	COMMUNICATION IN ORGANIZATIONS	
COMM 326	INTERCULTURAL COMMUNICATION	
COMM 328	NONVERBAL COMMUNICATION	
COMM 385	COMMUNICATION AND CULTURE IN CYBERSPACE	
COMM 440	THEORIES OF CONFLICT AND CONFLICT MANAGEMENT	
COMM 442	BARGAINING AND NEGOTIATION PROCESSES	

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FES 430	FOREST AS CLASSROOM
FW 489	EFFECTIVE COMMUNICATIONS IN FISHERIES AND WILDLIFE SCIENCE
NR 312	CRITICAL THINKING FOR NATURAL RESOURCE CHALLENGES
TRAL 493	ENVIRONMENTAL INTERPRETATION
WR 327	*TECHNICAL WRITING
WR 362	*SCIENCE WRITING
WR 462	*ENVIRONMENTAL WRITING
WR 466	ADVANCED TECHNICAL WRITING

Biological Sciences (27-29 credits)

Biology (12 credits)

Select one group of courses from the following: 12

BI 101 & BI 102 & BI 103	*ENVIRONMENTAL BIOLOGY: ECOLOGY, CONSERVATION, GLOBAL CHANGE and *ANIMAL BIOLOGY: GENES, BEHAVIOR AND EVOLUTION OF LIFE and *HUMAN BIOLOGY: ANATOMY, PHYSIOLOGY AND DISEASE ¹
BI 204 & BI 205 & BI 206	*INTRODUCTORY BIOLOGY I and *INTRODUCTORY BIOLOGY II and *INTRODUCTORY BIOLOGY III
BI 221 & BI 222 & BI 223	*PRINCIPLES OF BIOLOGY: CELLS and *PRINCIPLES OF BIOLOGY: ORGANISMS and *PRINCIPLES OF BIOLOGY: POPULATIONS

Chemistry (5 credits)

Select one of the following: 5

CH 121	GENERAL CHEMISTRY
CH 231 & CH 261	GENERAL CHEMISTRY and *LABORATORY FOR CHEMISTRY 231

Climate Science (3-4 credits)

Select one course from the following: 3-4

ATS 201	*CLIMATE SCIENCE
FW 345	*GLOBAL CHANGE BIOLOGY
GEOG 323	*CLIMATOLOGY
SUS 103	*INTRODUCTION TO CLIMATE CHANGE

Earth or Soil Science (4 credits)

Select one course from the following: 4

CSS 205	*SOIL SCIENCE
CSS 305	PRINCIPLES OF SOIL SCIENCE
GEO 101	*THE SOLID EARTH
GEO 201	*PHYSICAL GEOLOGY
GEO 202	*EARTH SYSTEMS SCIENCE
GEO 221	*ENVIRONMENTAL GEOLOGY
GEOG 102	*PHYSICAL GEOGRAPHY
SOIL 205 & FOR 206	SOIL SCIENCE and *FOREST SOILS LABORATORY FOR SOIL 205 (or SOIL 206) ²

Ecology (3-4 credits)

Select one course from the following: 3-4

BI 351	MARINE ECOLOGY
BI 370	ECOLOGY
BOT 341	PLANT ECOLOGY
FES 341	FOREST ECOLOGY

Mathematics and Statistics (8 credits)

Mathematics (4 credits)

Select one course from the following: 4

MTH 112	*ELEMENTARY FUNCTIONS
MTH 241	*CALCULUS FOR MANAGEMENT AND SOCIAL SCIENCE
MTH 245	*MATHEMATICS FOR MANAGEMENT, LIFE, AND SOCIAL SCIENCES
MTH 251	*DIFFERENTIAL CALCULUS

Statistics (4 credits)

Select one course from the following: 4

ST 201	PRINCIPLES OF STATISTICS
ST 351	INTRODUCTION TO STATISTICAL METHODS

Resource Management (23-33 credits)

Animal ID (2-4 credits)

Select one course from the following: 2-4

FES 412	FOREST ENTOMOLOGY
FW 312	SYSTEMATICS OF BIRDS
FW 316	SYSTEMATICS OF FISHES
FW 318	SYSTEMATICS OF MAMMALS
Z 365	BIOLOGY OF INSECTS
Z 473	HERPETOLOGY
Z 477	AQUATIC ENTOMOLOGY

Environmental Assessment and Planning (3-4 credits)

Select one course from the following: 3-4

FES 445/FW 445	ECOLOGICAL RESTORATION
FW 462	ECOSYSTEM SERVICES
GEOG 250	*LAND USE PLANNING FOR SUSTAINABLE COMMUNITIES
GEOG 450	LAND USE IN THE AMERICAN WEST
GEOG 451	PLANNING PRINCIPLES AND PRACTICES FOR RESILIENT COMMUNITIES
GEOG 452	ENVIRONMENTAL ASSESSMENT
RNG 421	WILDLAND RESTORATION AND ECOLOGY
RNG 490	RANGELAND MANAGEMENT PLANNING
SUS 304	*SUSTAINABILITY ASSESSMENT
SUS 350	*SUSTAINABLE COMMUNITIES
TRAL 456	PLANNING FOR SUSTAINABLE RECREATION
TRAL 457	PLANNING FOR SUSTAINABLE TOURISM
NR 325	SCIENTIFIC METHODS FOR ANALYZING NATURAL RESOURCE PROBLEMS

Fisheries and Marine Sciences (3-4 credits)

Select one course from the following: 3-4

BI 150	INTRODUCTION TO MARINE BIOLOGY
BI 347	*OCEANS IN PERIL
BI 351	MARINE ECOLOGY
FW 302	BIOLOGY AND CONSERVATION OF MARINE MAMMALS
FW 320	INTRODUCTORY POPULATION DYNAMICS
FW 323	MANAGEMENT PRINCIPLES OF PACIFIC SALMON IN THE NORTHWEST
FW 426	COASTAL ECOLOGY AND RESOURCE MANAGEMENT
FW 454	*FISHERY BIOLOGY
FW 465	MARINE FISHERIES
FW 473	FISH ECOLOGY
FW 481	WILDLIFE ECOLOGY
OC 201	*OCEANOGRAPHY
OC 332	COASTAL OCEANOGRAPHY

Forestry (3-4 credits)

Select one course from the following: 3-4

FE 456/FOR 456	*INTERNATIONAL FORESTRY
FES 240	*FOREST BIOLOGY
FES 341	FOREST ECOLOGY
FES 342	FOREST TYPES OF THE NORTHWEST
FES 350/HORT 350	URBAN FORESTRY
FES 440	WILDLAND FIRE ECOLOGY
FES 445/FW 445	ECOLOGICAL RESTORATION
FES 452/FW 452	BIODIVERSITY CONSERVATION IN MANAGED FORESTS
FES 477/NR 477	*AGROFORESTRY
FOR 346	TOPICS IN WILDLAND FIRE
FOR 441	SILVICULTURE PRINCIPLES

Land and Water (3-5 credits)

Select one course from the following: 3-5

FE 430	WATERSHED PROCESSES
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FE 434	FOREST WATERSHED MANAGEMENT
FW 326	INTEGRATED WATERSHED MANAGEMENT
FW 456	FRESHWATER ECOLOGY AND CONSERVATION
FW 479	WETLANDS AND RIPARIAN ECOLOGY
GEO 306	*MINERALS, ENERGY, WATER AND THE ENVIRONMENT
GEO 307	*NATIONAL PARK GEOLOGY AND PRESERVATION
GEO 308	*GLOBAL CHANGE AND EARTH SCIENCES
GEOG 340	*INTRODUCTION TO WATER SCIENCE AND POLICY
GEOG 440	CONFLICT, COOPERATION, AND CONTROL OF WATER IN THE US
GEOG 441	THE WORLD'S WATER
RNG 355	DESERT WATERSHED MANAGEMENT
RNG 455	RIPARIAN ECOHYDROLOGY AND MANAGEMENT
SOIL 366	ECOSYSTEMS OF WILDLAND SOILS
SOIL 388	SOIL SYSTEMS AND PLANT GROWTH
SOIL 395	**WORLD SOIL RESOURCES
SOIL 466	SOIL MORPHOLOGY AND CLASSIFICATION

Range (3-4 credits)

Select one course from the following: 3-4

FES 440	WILDLAND FIRE ECOLOGY
FES 445/FW 445	ECOLOGICAL RESTORATION
FOR 346	TOPICS IN WILDLAND FIRE
RNG 341	RANGELAND ECOLOGY AND MANAGEMENT
RNG 351	RANGE ECOLOGY I-GRASSLANDS
RNG 352	RANGE ECOLOGY II-SHRUBLANDS
RNG 421	WILDLAND RESTORATION AND ECOLOGY
RNG 441	RANGELAND ANALYSIS
RNG 442	RANGELAND-ANIMAL RELATIONS
RNG 490	RANGELAND MANAGEMENT PLANNING

Vegetation ID (3-4 credits)

Select one course from the following: 3-4

BOT 321	PLANT SYSTEMATICS
BOT 414	AGROSTOLOGY
BOT 425	FLORA OF THE PACIFIC NORTHWEST
FES 241	DENDROLOGY
HORT 226	LANDSCAPE PLANT MATERIALS I: DECIDUOUS HARDWOODS AND CONIFERS
HORT 228	LANDSCAPE PLANT MATERIALS II: SPRING FLOWERING TREES AND SHRUBS
RNG 353	WILDLAND PLANT IDENTIFICATION

Wildlife Management (3-4 credits)

Select one course from the following: 3-4

FW 251	PRINCIPLES OF FISH AND WILDLIFE CONSERVATION
FW 320	INTRODUCTORY POPULATION DYNAMICS
FW 321	APPLIED COMMUNITY AND ECOSYSTEM ECOLOGY
FW 435	*WILDLIFE IN AGRICULTURAL ECOSYSTEMS
FW 451	AVIAN CONSERVATION AND MANAGEMENT
FW 452/FES 452	BIODIVERSITY CONSERVATION IN MANAGED FORESTS
FW 458	MAMMAL CONSERVATION AND MANAGEMENT
FW 481	WILDLIFE ECOLOGY
Z 350	ANIMAL BEHAVIOR

Social and Political Dimensions (15–20 credits)

Ethics and Philosophy (3-4 credits)

Select one course from the following: 3-4

AG 301	*ECOSYSTEM SCIENCE OF PACIFIC NW INDIANS
ANTH 352	*ANTHROPOLOGY, HEALTH, AND ENVIRONMENT
ANTH 477	ECOLOGICAL ANTHROPOLOGY
ANTH 481	*NATURAL RESOURCES AND COMMUNITY VALUES
ANTH 482	*ANTHROPOLOGY OF INTERNATIONAL DEVELOPMENT
FW 340	*MULTICULTURAL PERSPECTIVES IN NATURAL RESOURCES
GEO 309	*ENVIRONMENTAL JUSTICE

HST 481	*ENVIRONMENTAL HISTORY OF THE UNITED STATES
NR 312	CRITICAL THINKING FOR NATURAL RESOURCE CHALLENGES
NR 380	NATURE IN STORYTELLING OVER THE CENTURIES
PHL 440	*ENVIRONMENTAL ETHICS
PHL 443/REL 443	*WORLD VIEWS AND ENVIRONMENTAL VALUES

Natural Resource Policy (3-4 credits)

Select one course from the following: 3-4

AEC 432	ENVIRONMENTAL LAW
AEC 454	RURAL DEVELOPMENT ECONOMICS AND POLICY
FES 486	*PUBLIC LANDS POLICY AND MANAGEMENT
FOR 460	*FOREST POLICY
FOR 462	NATURAL RESOURCE POLICY AND LAW
FW 415	FISHERIES AND WILDLIFE LAW AND POLICY
FW 422	INTRODUCTION TO OCEAN LAW
PS 473	US ENERGY POLICY
PS 475	ENVIRONMENTAL POLITICS AND POLICY
PS 477	INTERNATIONAL ENVIRONMENTAL POLITICS AND POLICY

Political Issues (3-4 credits)

Select one course from the following: 3-4

ENT 300/HORT 330	*PLAGUES, PESTS, AND POLITICS
FOR 462	NATURAL RESOURCE POLICY AND LAW
FW 350	*ENDANGERED SPECIES, SOCIETY AND SUSTAINABILITY
NR 351	*WHEN SCIENCE ESCAPES THE LAB: SCIENCE AND RESOURCE MANAGEMENT
PS 455	*THE POLITICS OF CLIMATE CHANGE
PS 475	ENVIRONMENTAL POLITICS AND POLICY
PS 476	*SCIENCE AND POLITICS
PS 477	INTERNATIONAL ENVIRONMENTAL POLITICS AND POLICY
TRAL 352	WILDERNESS MANAGEMENT

Economics

Select one course from the following: 3-4

AEC 250	*INTRODUCTION TO ENVIRONMENTAL ECONOMICS AND POLICY
ECON 201	*INTRODUCTION TO MICROECONOMICS

Social Issues (3-4 credits)

Select one course from the following:

FES 355	MANAGEMENT FOR MULTIPLE RESOURCE VALUES
FES 365	*ISSUES IN NATURAL RESOURCES CONSERVATION
FW 325	*GLOBAL CRISES IN RESOURCE ECOLOGY
GEOG 240	*HUMAN DIMENSIONS OF CLIMATE CHANGE
GEOG 300	*SUSTAINABILITY FOR THE COMMON GOOD
GEOG 430	RESILIENCE-BASED NATURAL RESOURCE MANAGEMENT
GEOG 431	GLOBAL RESOURCES AND DEVELOPMENT
NR 351	*WHEN SCIENCE ESCAPES THE LAB: SCIENCE AND RESOURCE MANAGEMENT
SOC 381	SOCIAL DIMENSIONS OF SUSTAINABILITY
SOC 475	RURAL SOCIOLOGY
SOC 480	*ENVIRONMENTAL SOCIOLOGY
SOC 481	*SOCIETY AND NATURAL RESOURCES
SUS 420	SOCIAL DIMENSIONS OF SUSTAINABILITY
TRAL 251	RECREATION RESOURCE MANAGEMENT
TRAL 351	OUTDOOR RECREATION MANAGEMENT ON PUBLIC LANDS
TRAL 352	WILDERNESS MANAGEMENT
TRAL 353	NATURE, ECO, AND ADVENTURE TOURISM
TRAL 354	COMMUNITIES, NATURAL AREAS, AND SUSTAINABLE TOURISM
WGSS 440	*WOMEN AND NATURAL RESOURCES

Spatial Analysis (3-4 credits)

4 Natural Resources Undergraduate Major (BS, HBS)

Select one course from the following:	3-4
CROP 414/HORT PRECISION AGRICULTURE 414	
FE 257 GIS AND FOREST ENGINEERING APPLICATIONS	
FW 303 SURVEY OF GEOGRAPHIC INFORMATION SYSTEMS IN NATURAL RESOURCE	
GEOG 201 *FOUNDATIONS OF GEOSPATIAL SCIENCE AND GIS	
GEOG 360 GISCIENCE I: GEOGRAPHIC INFORMATION SYSTEMS AND THEORY	
Total credits required for graduation is 180 ³	
Total Credits	86-104

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Baccalaureate Core Course (BCC)

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Writing Intensive Course (WIC)

1
The BI 2XX series is required for some specialty options.

2
SOIL 205 is a Bacc Core course only when taken in conjunction with a laboratory course (FOR 206 or SOIL 206)

3
Completion of an option is required to earn a degree in Natural Resources

Major Code: 671

First Year	Credits
Fall	
Chemistry	5
Mathematics	4
WR 121 *ENGLISH COMPOSITION	3
HHS 231 *LIFETIME FITNESS FOR HEALTH	2
Credits	14
Winter	
NR 201 MANAGING NATURAL RESOURCES FOR THE FUTURE	3
Climate Science	4
Bacc Core: Speech	3
Political Issues	4
Credits	14
Spring	
Earth or Soil Science	4
Social Issues	4
Bacc Core: Physical Activity	1
Writing II	3
Bacc Core: Western Culture	3
Credits	15
Second Year	
Fall	
Biology I with Lab	4
Statistics	4
Ethics & Philosophy	4
Bacc Core: Cultural Diversity	3
Credits	15
Winter	
Biology II with lab	4
Spatial Analysis	4
Economics	4
Bacc Core: Literature & The Arts	3
Credits	15

Spring	
Biology III with lab	4
Vegetation ID	3
Forestry	4
Bacc Core: Literature & The Arts	3
Credits	14
Third Year	
Fall	
Ecology	4
Animal Identification	3
Fisheries & Marine Sciences	4
Specialty Option Course	4
Credits	15
Winter	
Range	3
Advanced Communication	4
Wildlife Management	4
Specialty Option Course	4
Credits	15
Spring	
Environmental Assessment & Planning	4
Spatial Analysis	4
Specialty Option Course	4
Specialty Option Course	4
Credits	16
Fourth Year	
Fall	
Land & Water	4
Natural Resources Policy	4
Specialty Option Course	4
Specialty Option Course	4
Credits	16
Winter	
FES 485 *CONSENSUS AND NATURAL RESOURCES	3
Specialty Option Course	4
Specialty Option Course	4
Electives	4
Credits	15
Spring	
NR 455 NATURAL RESOURCE DECISION MAKING	4
Specialty Option Course	4
Specialty Option Course	4
Electives	4
Credits	16
Total Credits	180