

# Department of Environment and Society

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## **Undergraduate Advisor:**

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**Degrees offered:** Bachelor of Science (BS) in Environmental Studies; BS, Master of Science (MS), and Doctor of Philosophy (PhD) in Recreation Resource Management; BS in Geography (offered jointly with Department of Watershed Sciences); MS and Master of Arts (MA) in Geography; MS in Bioregional Planning (offered jointly with Department of Landscape Architecture and Environmental Planning); MS and PhD in Human Dimensions of Ecosystem Science and Management; MS and PhD in Ecology

**Undergraduate emphases:** *Environmental Studies BS*—Human Impacts on the Environment, Communications, Business and Economics, Environmental Policy, International, Planning and Analysis, Environmental Stewardship; *Geography BS*—Human-Environment Geography, Geographical Analysis and Bioregional Planning, Physical Geography

**Vision/Mission:** The vision of the Department of Environment and Society is one of bringing people and science together for healthy communities and enduring ecosystems. The mission of the department is based on three goals: (1) to promote scholarship and creativity in the discovery, synthesis, and transfer of knowledge relating to the human dimensions of natural resource and environmental management; (2) to apply social science concepts and approaches to better understand human-environment interactions at a range of spatial scales; and (3) to enhance the effectiveness of policies, planning, and administrative processes that affect sustainable use of the natural world.

To this end, the department's academic programs provide undergraduate and graduate students with a balanced exposure to the social, physical, and biological sciences within an interdisciplinary framework. This combination has great relevance for students aspiring to careers in natural resource and environmental policy, planning, management, education, and science, as well as careers in geography. The program is designed to provide students with a working knowledge of the human aspects of ecosystems and a speaking knowledge of the biophysical aspects, as well as experience using "state of the art" tools and techniques for integrating this knowledge.

## **Undergraduate Programs**

### **Objectives**

The department offers the following undergraduate degree programs: Environmental Studies, Geography, and Recreation Resource Management. Each of these programs offers a balanced exposure to key ideas and principles of the social, biological, and physical sciences, placing special emphasis on the human dimensions of natural resources and environmental management. The department's goal is to train professionals who can lead the way toward finding and keeping a sustainable balance between protecting the environment and enhancing human societies.

Departmental programs offer learning experiences in the classroom and in the field, frequent individual contacts with faculty as teachers and advisors, and opportunities to take part in student and professional organizations. Seasonal employment, internships, and other activities promoting hands-on experience in natural resource and geographic professions are strongly encouraged.

The **Environmental Studies** curriculum is designed for students who wish to acquire a broad understanding of natural resources and human-environment relationships, together with the technical background needed to understand environmental issues. In many ways, the curriculum provides a traditional "liberal arts education" with a strong natural resources emphasis. Moreover, it provides an opportunity for students to select from several areas of emphasis, depending upon their career goals.

The **Geography** degree is designed to provide a broad education built around new tools and new knowledge in geography that will be critical for a student's future success. Students choose one of three areas of emphasis: Human-Environment Geography, Geographical Analysis and Bioregional Planning, and Physical Geography. These emphases represent three important directions of geography in the twenty-first century.

The **Geography Teaching** curriculum offers students an opportunity to prepare for a career in secondary education with a geography emphasis.

The **Recreation Resource Management** curriculum prepares students for careers in planning and management of visitor use in wildland recreation settings, such as state and national parks, forests, monuments, and wilderness areas. Because such jobs require an understanding of the landscape, its natural resources, and the people who visit, the major offers courses in both the bio-physical and social sciences, along with an emphasis on communication and collaboration skills.

## **Environment and Society Minors**

The department offers minors in Environmental Studies, Geography, Geography Teaching, and Recreation Resources.

## **Requirements**

### **Admission Requirements**

Admission requirements for the Department of Environment and Society are the same as those described for the College of Natural Resources (see pages 138-139).

### **Graduation Requirements**

All courses listed as major subject courses must be taken on an *A-B-C-D-F* basis. Students must achieve a grade of *C-* or better in all ENVS and GEOG courses used to satisfy the requirements for a major in the Department of Environment and Society. The grade point average for all courses taught by the College of Natural Resources must be 2.5 or higher.

All students in the Environmental Studies and Recreation Resource Management majors must complete a series of basic lower-division courses providing the disciplinary foundation for natural resource professions before moving on to professional coursework. Equivalents of these foundation courses may be taken at many two- and four-year colleges. Some foundation and core courses may also be used toward the University Studies requirements, as shown by the University Studies designations listed in parentheses following the course numbers. Students should consult their academic advisor if they have questions about University graduation requirements.

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## Environmental Studies Major

The Environmental Studies major consists of 79-82 credits. This total includes the disciplinary foundation, professional courses, and an emphasis area of 15 or more credits.

### A. Disciplinary Foundation (18 credits)

BIOL 1010 (BLS) Biology and the Citizen (F,Sp,Su)	3
BIOL 1020 Biological Discovery: A Lab Course (F,Sp)	1
CHEM 1110 (BPS) General Chemistry I (F,Sp)	4
HIST 3950 (DHA/CI) Environmental History (3 cr) or PHIL 3510 (DHA) Environmental Ethics (Sp) (3 cr)	3
MATH 1050 (QL) College Algebra (F,Sp,Su)	4
STAT 2000 (QI) Statistical Methods (F,Sp)	3

### B. Professional Coursework (38-39 credits)

ENVS 1990 Professional Orientation for Environment and Society (F)	2
ENVS 2340 (BSS) Natural Resources and Society (F,Sp)	3
ENVS 3000 Natural Resources Policy and Economics (F)	4
ENVS 3330 Environment and Society (Sp)	3
ENVS 3500 (QI) Quantitative Assessment of Environmental and Natural Resource Problems (F)	3
ENVS 4000 Human Dimensions of Natural Resource Management (F)	3
ENVS 4400 Economic Applications in Natural Resource Management (Sp)	4
ENVS 5000 Collaborative Problem-Solving for Environment and Natural Resources (Sp)	3
GEOG 1000 (BPS) Physical Geography (F,Sp,Su) (3 cr) or GEO 1110 (BPS) The Dynamic Earth: Physical Geology (F,Sp) (4 cr)	3 or 4
WATS 2930 Introduction to Geographic Information Sciences (F)	4
WATS 3700 (CI) Fundamentals of Watershed Science (Sp)	3
WILD 2200 (BLS) Ecology of Our Changing World (F,Sp)	3

### C. Animal Course (select 3 credits)

ENVS 3600 (DSC) Living With Wildlife (Sp)	3
WATS 3100 (CI/DSC) Fish Diversity and Conservation (F)	3

### D. Plant Course (select 3-4 credits)

BIOL 3040 (DSC) Plants and Civilization (F)	3
PSC 3500 The Structure and Function of Economic Crop Plants (Sp)	3
WILD 3600 Wildland Plant Ecology and Identification (F)	4

### E. Policy Course (select 2-3 credits)

The course chosen from this section *cannot* also be applied toward the emphasis area.

ENVS 4130 Recreation Policy and Planning (Sp)	3
ENVS 5300 Natural Resources Law and Policy (Sp)	2
ENVS 5320 Water Law and Policy in the United States (Sp)	3
ENVS 5570 Sustainable Living (Sp)	3
ENVS/SOC 5640 Conflict Management in Natural Resources (Sp)	3
Another course related to natural resource or environmental policy, numbered 3000 or higher	3

### F. Area of Emphasis (15 credits)

Students majoring in Environmental Studies are required to select an emphasis of at least 15 credits to complement their general professional foundation. Students must file an approved emphasis plan prior to applying for graduation, but it is recommended that they meet with their advisor to develop and gain approval for the emphasis *no later* than midway through the first semester of their junior year.

Complete 15 credits chosen from one of the following seven emphasis areas:

#### Business and Economics

APEC 5560 Natural Resource and Environmental Economics (Sp)	3
ECN 3170 Law and Economics (Sp)	3
ENVS 5550 Sustainability: Concepts and Measurement (Sp)	3
MGT 2050 Legal and Ethical Environment of Business (F,Sp,Su)	3
MGT 3110 (DSS) Managing Organizations and People (F,Sp,Su)	3
MGT 3500 Fundamentals of Marketing (F,Sp,Su)	3
Other business or economics course approved by faculty advisor	3-4

#### Communications

ENGL 3440 Creative Nonfiction Writing (F,Sp)	3
ENGL 4630 American Nature Writers (F,Sp)	3
ENVS 4600 Natural Resource Interpretation (F)	3
ENVS 5110 Environmental Education (Sp)	3
JCOM 1130 Beginning Newswriting for the Mass Media (F,Sp,Su)	3
SPCH 5250 Environmental Rhetoric (Sp)	3
Other communications course approved by faculty advisor	3-4

#### Environmental Policy

ENVS 4130 Recreation Policy and Planning (Sp)	3
ENVS 5300 Natural Resources Law and Policy (Sp)	3
ENVS 5320 Water Law and Policy in the United States (Sp)	3
ENVS 5570 Sustainable Living (Sp)	3
ENVS/SOC 5640 Conflict Management in Natural Resources (Sp)	3
POLS 5180 Natural Resource Policy (Sp)	3
Other policy course approved by faculty advisor	3-4

#### Human Impacts on the Environment

ENVS 5570 Sustainable Living (Sp)	3
GEO 3100 (DSC) Natural Disasters (Sp)	3
HIST 3950 (DHA/CI) Environmental History (cannot be applied toward this option if already used to fulfill requirements in <i>Section A</i> )	3
SOC 4620 (DSS) Sociology of the Environment and Natural Resources (Sp)	3
WATS/PSC 3820 (DSC/QI) Climate Change (Sp)	3
WILD 4600 Conservation Biology (Sp)	3
Other appropriate course approved by faculty advisor	3-4

#### International

ANTH 2010 (BSS) Peoples of the Contemporary World (Sp)	3
ECN 5400 International Trade Theory (F)	3
ENVS 5550 Sustainability: Concepts and Measurement (Sp)	3
GEOG 1300 (BSS) World Regional Geography (F)	3
GEOG 4200 (CI) Regional Geography (F,Sp,Su)	3
GEOG/ANTH/SOC 5650 Developing Societies (F)	3
SOC 4730 Women in International Development (Sp)	3
Other course with international focus approved by faculty advisor	3-4

#### Planning and Analysis

BIOL 5010 Biogeography (Sp)	3
ENVS/SOC 5640 Conflict Management in Natural Resources (Sp)	3
GEO 3100 (DSC) Natural Disasters (Sp)	3
GEOG 3610 Geography of Rural/Urban Planning (F)	3
LAEP 3700 City and Regional Planning (Sp)	3
WATS 4930 Geographic Information Systems (F)	4
WATS 5330 Large River Management (Sp)	3
Other planning course approved by faculty advisor	3-4

#### Environmental Stewardship

In consultation with his or her advisor, a student may develop a custom emphasis of at least 15 credits. Students pursuing this option must fill out an emphasis form describing educational goals and specific

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courses to be taken. A University-approved minor may be used to meet this requirement, subject to approval by the student's advisor and department head.

## G. Electives

Students may take the remainder of the 120 credits from any department. The guidelines described under "Breadth Requirements" (see pages 67-69) and "Depth Education Requirements" (see pages 70-75) should be consulted to ensure meeting University Studies Requirements.

## Environmental Studies Minor (15-17 credits)

The Environmental Studies minor is open to all majors, *except* those in the College of Natural Resources. However, this minor *is available* to students enrolled in the Geography major. Students wishing to minor in Environmental Studies should contact the Department of Environment and Society to meet with the department's designated minor advisor. All courses required for the minor must be taken on an *A-B-C-D-F* basis. A grade of *C-* or better is required for all ENVS courses taken to meet requirements for the minor. A minimum GPA of 2.5 is required for courses taken to complete the minor.

### A. Required Courses (10 credits)

ENVS 2340 (BSS) Natural Resources and Society (F,Sp)	3
ENVS 3000 Natural Resources Policy and Economics (F)	4
WILD 2200 (BLS) Ecology of Our Changing World (F,Sp)	3

### B. Policy or Economics Course (2-4 credits)

Select one of the following courses in natural resources policy or economics:

ENVS 4130 Recreation Policy and Planning (Sp)	3
ENVS 4400 Economic Applications in Natural Resource Management (Sp)	4
ENVS 5300 Natural Resources Law and Policy (Sp)	2
ENVS 5320 Water Law and Policy in the United States (Sp)	3
ENVS 5570 Sustainable Living (Sp)	3

### C. Electives (3 credits)

Select one additional upper-division (3000-level or higher) course of 3 credits or more, which provides greater depth in an area of natural or social sciences that can be applied to the management of natural resources and the environment, to be selected in consultation with the Environmental Studies minor advisor.

## Geography Major

The Geography major consists of a minimum of 74 credits. Students choose one of three areas of emphasis: Human-Environment Geography, Geographical Analysis and Bioregional Planning, and Physical Geography. All students complete a common core of 15-16 credits, and also complete two courses from each of the other two emphasis cores, ensuring a broad and meaningful geography education.

### A. Geography Core (15-16 credits)

ENVS 1990 Professional Orientation for Environment and Society (F) (2 cr) <b>or</b>	
WATS 1020 Watershed Sciences Professional Orientation (F) (1 cr)	1 or 2
ENVS 3330 Environment and Society (Sp)	3
GEOG 1000 (BPS) Physical Geography (F,Sp)	3
GEOG 1005 Physical Geography Lab (F,Sp)	1
GEOG 1300 (BSS) World Regional Geography (F)	3
WATS 2930 Introduction to Geographic Information Sciences (F)	4

### B. Emphasis Area (60 credits)

Students majoring in Geography are required to select an emphasis from one of the following three areas to complement the disciplinary core: **Human-Environment Geography, Geographical Analysis and Bioregional Planning, or Physical Geography**. Students must file an approved emphasis plan prior to applying for graduation, but it is recommended that they meet with their faculty advisor to develop and gain approval for the emphasis no later than midway through the first semester of the junior year. Courses requiring prerequisites are marked with \*\*. For specific information about prerequisites, see *Course Descriptions* section of this catalog.

#### 1. Human-Environment Geography Emphasis (60 credits)

##### a. Human-Environment Geography Core (36 credits)

GEOG 4100 Geographic Approaches to the Human-Environmental Relationship (Sp)	3
GEOG 4120 (CI) Environment and Development in Latin America (F)	3
GEOG 4140 Violent Environments: Linking Ecology and Conflict in Sub-Saharan Africa (Sp)	3
HIST 3950 (DHA/CI) Environmental History	3
SOC 3110 (CI)** Methods of Social Research (F,Sp)	3
SOC 5650 (DSS) Developing Societies (F)	3
STAT 1040 (QL)** Introduction to Statistics (F,Sp,Su)	3
WILD 2200 (BLS) Ecology of our Changing World (F,Sp)	3
Two courses chosen from the Geographical Analysis and Bioregional Planning core	6
Two courses chosen from the Physical Geography core	6

##### b. Elective Courses (24 credits)

Complete 24 credits chosen from the following list:

ANTH 2010 (BSS) Peoples of the Contemporary World (Sp)	3
ENVS 2340 (BSS) Natural Resources and Society (F,Sp)	3
ENVS 3000 Natural Resources Policy and Economics (F)	4
ENVS 3500 (QI)** Quantitative Assessment of Environment and Natural Resource Problems (F)	3
ENVS 3600 (DSC) Living with Wildlife (Sp)	3
ENVS 4000 (DSS)** Human Dimensions of Natural Resource Management (F)	3
ENVS 4500 (CI) Wildland Recreation Behavior (F)	3
ENVS 5110 Environmental Education (Sp)	3
ENVS 5550 Sustainability: Concepts and Measurement (Sp)	3
ENVS 5570 Sustainable Living (Sp)	3
PHIL 3510 (DHA) Environmental Ethics (Sp)	3
POLS 4820 (DSS) Natural Resources and Environmental Policy: Political Economy of Environmental Quality (Sp)	3
SOC 3120 (QI)** Social Statistics I (F,Sp,Su)	3
SOC 3200 (DSS) Population and Society (F,Sp)	3
SOC 3600 Sociology of Urban Places (F)	3
SOC 3610 (DSS) Rural Sociology (F)	3
SOC 4620 (DSS) Sociology of the Environment and Natural Resources (Sp)	3

#### 2. Geographical Analysis and Bioregional Planning Emphasis (60 credits)

##### a. Geographical Analysis and Bioregional Planning Core (36 credits)

ENVS 4130 Recreation Policy and Planning (Sp)	3
ENVS 5570 Sustainable Living (Sp)	3
HIST 3950 (DHA/CI) Environmental History	3
STAT 2000 (QI)** Statistical Methods (F,Sp) (3 cr) <b>or</b>	
STAT 3000 (QI)** Statistics for Scientists (F,Sp,Su) (3 cr)	3
WATS 4930 Geographic Information Systems (F)	3

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WATS 5930** Geographic Information Analysis (Sp).....	3
WILD 2200 (BLS) Ecology of our Changing World (F,Sp).....	3
WILD 5750 Applied Remote Sensing (F).....	3
Two courses chosen from the Human-Environment Geography core.....	6
Two courses chosen from the Physical Geography core.....	6

## b. Elective Courses (24 credits)

Complete 24 credits chosen from the following list:

ENVS 2340 (BSS) Natural Resources and Society (F).....	3
ENVS 3000 Natural Resources Policy and Economics (F).....	4
ENVS 3500 (QI)** Quantitative Assessment of Environmental and Natural Resource Problems (F).....	3
ENVS 4000 (DSS) Human Dimensions of Natural Resource Management (F).....	3
ENVS 5300 Natural Resources Law and Policy (Sp).....	2
ENVS 5320 Water Law and Policy in the United States (Sp).....	3
ENVS 5550 Sustainability: Concepts and Measurement (Sp).....	3
GEOG 4200 (CI) Regional Geography.....	3
LAEP 2300 History of Landscape Architecture (F,Sp).....	3
LAEP 3700 City and Regional Planning (Sp).....	3
PHIL 3510 (DHA) Environmental Ethics (Sp).....	3
POLS 4820 (DSS) Natural Resources and Environmental Policy: Political Economy of Environmental Quality (Sp).....	3
SOC 3600 Sociology of Urban Places (F).....	3
SOC 3610 (DSS) Rural Sociology (F).....	3
STAT 5410** Applied Spatial Statistics (F).....	3
WATS 3700 (CI) Fundamentals of Watershed Science (Sp).....	3
WILD 3800** Wildland Ecosystems (Sp).....	3

## 3. Physical Geography Emphasis (60-61 credits)

### a. Physical Geography Core (36-37 credits)

MATH 1100 (QL)** Calculus Techniques (F,Sp,Su) (3 cr) or	
MATH 1210 (QL)** Calculus I (4 cr).....	3 or 4
PSC 3000 Fundamentals of Soil Science (F,Sp).....	4
STAT 3000 (QI)** Statistics for Scientists (F,Sp,Su).....	3
WATS 3700 (CI) Fundamentals of Watershed Science (Sp).....	3
WATS 3820 (DSC/QI)** Climate Change (Sp).....	3
WATS 4490** Small Watershed Hydrology (F).....	4
WATS 4930 Geographic Information Systems (F).....	4
Two courses chosen from the Human-Environment Geography core.....	6
Two courses chosen from the Geographical Analysis and Bioregional Planning core.....	6

### b. Elective Courses (24 credits)

Complete 24 credits chosen from the following list:

BIOL 5010** Biogeography (Sp).....	3
ENVS 3000 Natural Resources Policy and Economics (F).....	3
ENVS 5320 Water Law and Policy in the United States (Sp).....	3
GEO 1110 (BPS) The Dynamic Earth: Physical Geology (F,Sp).....	4
MATH 1220 (QL)** Calculus II (F,Sp,Su).....	4
PHYS 2210 (QI)** General Physics— Science and Engineering I.....	4
PHYS 2220 (BPS/QI)** General Physics— Science and Engineering II.....	4
STAT 5410** Applied Spatial Statistics (F).....	3
WATS 3600** Geomorphology (F).....	4
WATS 5150 Fluvial Geomorphology (F).....	3
WATS 5170 Fluvial Geomorphology Lab (F).....	2
WATS 5760 Remote Sensing: Modeling and Analysis (Sp).....	3
WATS 5930** Geographic Information Analysis (Sp).....	3
WILD 5750 Applied Remote Sensing (F).....	3

## C. General Electives (12 credits)

After meeting the University Studies, USU upper-division, and Geography Major requirements, students may take the remainder of their 120 required credits in any discipline and from any department.

## Geography Minor (24 credits minimum)

All courses required for the Geography minor *must* be taken on an A-B-C-D-F basis. A grade of C- or better is required for all GEOG courses taken to meet requirements for the minor. In order to graduate, students must maintain a 2.5 or higher grade point average in all courses taken from offerings within the College of Natural Resources.

GEOG 1000 (BPS) Physical Geography (F,Sp,Su).....	3
GEOG 1005 Physical Geography Lab (F,Sp).....	1
GEOG 1300 (BSS) World Regional Geography (F).....	3
GEOG 1400 (BSS) Human Geography (Sp).....	3
GEOG 4200 (CI) Regional Geography (F,Sp,Su).....	3
GEOG 4850 Cartographic Design (Sp).....	3
WATS 2930 Introduction to Geographic Information Sciences (F).....	4
WATS 4930 Geographic Information Systems (F).....	4

## Geography Teaching Major (90-106 credits)

The teaching major in Geography consists of the geography courses (38 credits minimum, shown in sections A, B, and C below), a teaching minor (17-33 credits), and the Secondary Teacher Education Program (STEP) (35 credits). **A 2.75 or higher overall cumulative GPA in 90 credits is required for admission to the STEP. The 2.75 minimum overall cumulative GPA must be maintained for graduation.**

### A. Geography Teaching Major Foundation Courses (24-25 credits)

ENVS 1990 Professional Orientation for Environment and Society (F).....	2
GEOG 1000 (BPS) Physical Geography (F,Sp,Su).....	3
GEOG 1300 (BSS) World Regional Geography (F).....	3
GEOG 1400 (BSS) Human Geography (Sp).....	3
GEOG 4200 (CI) Regional Geography (Utah).....	3
GEOG 4200 (CI) Regional Geography (International Course) (F,Sp,Su).....	3
GEOG 4850 Cartographic Design (Sp) (3 cr) or	
WATS 4930 Geographic Information Systems (F) (4 cr).....	3 or 4
WATS 2930 Introduction to Geographic Information Sciences (F).....	4

### B. Geography Education Pedagogical Methods Courses (4 credits)

SCED 3300 Clinical Experience I (F,Sp).....	1
SCED 3500 Teaching Social Studies (F,Sp).....	3

### C. Geography Education Elective Courses (9-10 credits)

Students may select the remaining 9-10 credits in Geography from courses numbered 2000 and above. It is recommended that students take additional coursework in the following areas: regional, physical, and human geography; human-environment interaction techniques; technology in geography education; and classroom technology. All electives must be coordinated with a geography education advisor.

### D. Teaching Minor (17-33 credits)

A teaching major in Geography also requires an approved teaching minor from another field of study acceptable to the Secondary Education Program of the School of Teacher Education and Leadership (TEAL).

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## E. Secondary Teacher Education Program (STEP) (35 credits)

Students must complete three levels in the STEP. All three levels of the STEP will be offered during fall and spring semesters, *not* during summers. Levels of the STEP are taken as a package, not piecemeal. Each level must be satisfactorily completed before a student is advanced to the next level. All courses must be completed with a minimum grade of C-. **Prior to admission to the STEP, students in the Geography Teaching Major must complete MATH 1050, unless their Math ACT score is 25 or higher.**

Students should consult with advisors in major and minor departments for scheduling of special methods classes at Levels 1 and 2. Although certain combinations of majors and minors require three special methods classes, only *two* clinical experiences (total) should be scheduled at Levels 1 and 2. These in-school experiences are coordinated by methods instructors.

### 1. Level 1 (15-week courses) (11 credits minimum)

INST 3500 Technology Tools for Secondary Teachers (F,Sp,Su)	1
SCED 3100 Motivation and Classroom Management (F,Sp)	3
SCED 3210 (CI/DSS) Educational and Multicultural Foundations (F,Sp)	3
Clinical Experience I (30 hrs. minimum) (3300 in various departments)	1
One or more methods courses in major (3-6 credits in minor—Social Studies Education)	3

### 2. Level 2 (15-week courses) (12 credits minimum)

SPED 4000 Education of Exceptional Individuals (may be taken anytime) (F,Sp,Su)	2
SCED 4200 (CI) Reading, Writing, and Technology (F,Sp)	3
SCED 4210 Cognition and Evaluation of Student Learning (F,Sp)	3
Clinical Experience II (30 hrs. minimum) (4300 in various departments)	1
Special Methods II (major or minor) (taught in various departments)	3

### 3. Level 3 (includes 13 weeks of student teaching and 2 weeks of Student Teaching Seminar) (12 credits)

SCED 5500 Student Teaching Seminar (2 weeks) (F,Sp)	2
SCED 5630 Student Teaching in Secondary Schools (13 weeks, full-time) (F,Sp)	10

## F. Electives

After meeting the University Studies, USU upper-division, and geography teaching major requirements, students may take the remainder of their 120 required credits in any discipline and from any department. ENVS 4990 (2 cr.) and ENVS 5000 (3 cr.) are recommended.

## Teaching Minor in Geography (24 credits minimum)

**Note:** A teaching minor in Geography **requires** an approved teaching major in another subject. All courses required for the Geography Teaching minor **must** be taken on an *A-B-C-D-F* basis. A grade of *C-* or better is required for all GEOG courses taken to meet requirements for the minor. A minimum GPA of 2.5 is required for courses taken to complete the minor.

### A. Geography Teaching Minor Foundation Courses (18-19 credits)

GEOG 1000 (BPS) Physical Geography (F,Sp,Su)	3
GEOG 1300 (BSS) World Regional Geography (F)	3
GEOG 1400 (BSS) Human Geography (Sp)	3

GEOG 4200 (CI) Regional Geography (Utah)	3
GEOG 4200 (CI) Regional Geography (International Course) (F,Sp,Su)	3
GEOG 4850 Cartographic Design (Sp) (3 cr) <b>or</b>	
WATS 2930 Introduction to Geographic Information Sciences (F) (4 cr) <b>or</b>	
WATS 4930 Geographic Information Systems (F) (4 cr)	3 or 4

### B. Geography Education Courses (4 credits)

SCED 3300 Clinical Experience I (F,Sp)	1
SCED 3500 Teaching Social Studies (F,Sp)	3

### C. Geography Electives (1-2 credits)

## Recreation Resource Management Major

The Recreation Resource Management major consists of 71-73 credits.

### A. Disciplinary Foundation (15 credits)

BIOL 1010 (BLS) Biology and the Citizen (F,Sp,Su)	3
BIOL 1020 Biological Discovery: A Lab Course (F,Sp)	1
CHEM 1110 (BPS) General Chemistry I (F,Sp)	4
MATH 1050 (QL) College Algebra (F,Sp,Su)	4
STAT 2000 (QI) Statistical Methods (F,Sp)	3

### B. Professional Coursework (47-48 credits)

ENVS 1990 Professional Orientation for Environment and Society (F)	2
ENVS 2340 (BSS) Natural Resources and Society (F,Sp)	3
ENVS 3000 Natural Resources Policy and Economics (F)	4
ENVS 3300 Fundamentals of Recreation Resources Management (F)	3
ENVS 3500 (QI) Quantitative Assessment of Environmental and Natural Resource Problems (F)	3
ENVS 4000 Human Dimensions of Natural Resource Management (F)	3
ENVS 4130 Recreation Policy and Planning (Sp)	3
ENVS 4400 Economic Applications in Natural Resource Management (Sp)	4
ENVS 4500 (CI) Wildland Recreation Behavior (F)	3
ENVS 4920 Special Projects in Recreation Management (F,Sp,Su)	3
ENVS 5000 Collaborative Problem-Solving for Environment and Natural Resources (Sp)	3
GEOG 1000 (BPS) Physical Geography (F,Sp,Su) (3 cr) <b>or</b>	
GEO 1110 (BPS) The Dynamic Earth: Physical Geology (F,Sp) (4 cr)	3 or 4
WATS 2930 Introduction to Geographic Information Sciences (F)	4
WATS 3700 (CI) Fundamentals of Watershed Science (Sp)	3
WILD 2200 (BLS) Ecology of Our Changing World (F,Sp)	3

### C. Animal Course (select 3 credits)

ENVS 3600 (DSC) Living With Wildlife (Sp)	3
WATS 3100 (CI/DSC) Fish Diversity and Conservation (F)	3

### D. Education/Interpretation Course (select 3 credits)

ENVS 4600 Natural Resource Interpretation (F)	3
ENVS 5110 Environmental Education (Sp)	3

### E. Plant Course (select 3-4 credits)

BIOL 3040 (DSC) Plants and Civilization (F)	3
PSC 3500 The Structure and Function of Economic Crop Plants (Sp)	3
WILD 3600 Wildland Plant Ecology and Identification (F)	4

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## F. Electives

Students may take the remainder of the 120 credits from any department. The guidelines described under "Breadth Requirements" (see pages 67-69) and "Depth Education Requirements" (see pages 70-75) should be consulted to ensure meeting University Studies Requirements.

## Recreation Resources Minor (15 credits minimum)

Students wishing to minor in Recreation Resources should contact the Department of Environment and Society to meet with the department's designated minor advisor. All courses required for the minor must be taken on an *A-B-C-D-F* basis. A grade of *C-* or better is required for all ENVS courses taken to meet requirements for the minor. A minimum GPA of 2.5 is required for courses taken to complete the minor.

### A. Required Courses (12 credits)

ENVS 3300 Fundamentals of Recreation Resources	
Management (F).....	3
ENVS 4130 Recreation Policy and Planning (Sp).....	3
ENVS 4500 (CI) Wildland Recreation Behavior (F).....	3
ENVS 4600 Natural Resource Interpretation (F).....	3

### B. Elective Course (3-4 credits)

Select *one* of the following courses:

ENVS 3330 Environment and Society (Sp).....	3
ENVS 4000 (DSS) Human Dimensions of Natural Resource	
Management (F).....	3
ENVS 4400 Economic Applications in Natural Resource	
Management (Sp).....	4
ENVS 5110 Environmental Education (Sp).....	3

## Recommended Four-year Plans

Recommended semester-by-semester four-year plans for students working toward a bachelor's degree within the Environment and Society Department can be found at:

<http://www.usu.edu/degreepans/>

Students should consult with their advisor to develop a plan of study tailored to their individual needs and interests.

## Financial Assistance

The main opportunities for undergraduates to find financial support through grants, work-study, and loans are listed on pages 46-47 in the *Financial Aid and Scholarship Information* section. Some students may be able to find paid internships with private or governmental organizations, or work for a faculty member on a research project. Interested persons should contact the College of Natural Resources Academic Service Center for more information on scholarships for undergraduate students.

## Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission

to graduate school. The minimum GPA requirement for admission into departmental honors in any department within the College of Natural Resources is 3.30. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level.

For information about the campus-wide Honors Program, see page 310.

## Additional Information

For additional information about the Bachelor of Science requirements, course sequencing, and departmental emphasis areas and their related coursework, as well as updated information describing current programs and courses offered by the Department of Environment and Society, visit the Environment and Society main office, Natural Resources 201, or visit: <http://www.cnr.usu.edu/envs>

Major requirement sheets, which outline career opportunities and required courses for departmental majors, can be obtained from the department, or online at: <http://www.usu.edu/majorsheets/>

## Graduate Programs

### Admission Requirements

See general admission requirements on pages 36-37. Applicants for graduate study in the Department of Environment and Society should have a bachelor's degree from an accredited college or university, a cumulative GPA of at least 3.0 (out of 4.0), and GRE scores (quantitative and verbal) above the 40th percentile. Foreign students should submit a TOEFL score of at least 550. Exceptions to these standards will be considered on a case-by-case basis. Written statements of interest help match applicants with faculty advisors. A faculty member must agree to serve as the major professor in order for an applicant to be accepted. Prospective students are encouraged to contact faculty members early in the application process to investigate mutual interests, projects, and prospects for financial support.

The department's graduate programs focus on providing students with a broad foundation in the social and natural sciences as they relate to the study, planning, and management of ecosystems. The curriculum is designed to enhance interdisciplinary integration by emphasizing current and future environmental issues facing humanity. Coursework and research are focused on problem-solving through application of social research methods, case studies, computer mapping, and other analytical techniques.

The department values intellectual, academic, and social diversity in the applicants for graduate study. Mature professionals seeking education to augment life experiences, or practical training to pursue new career paths, are also encouraged to apply. Knowledge gaps will be identified early in a student's program and addressed on a case-by-case basis through agreements between students and their graduate advisory committees.

### Degree Programs

The department offers opportunities for graduate study through the MS, MA, PhD, and graduate certificate programs listed below.

The MS degree requires a minimum of 30 credits, of which 24 must be in residence. Candidates for the MA must complete the requirements

# Department of Environment and Society

for the MS, with the addition of at least two years (approximately 16 credits) of an approved foreign language or some other demonstration of foreign language proficiency. There are two options available in both the MS and MA programs. The **Plan A** requires students to complete coursework, as well as a research thesis. The **Plan B** is a nonthesis, terminal degree, based largely on coursework and a professional paper or project.

For the PhD degree, there is a more variable amount of required coursework, as well as a research dissertation. Compared to the MS degree, the PhD degree has a greater emphasis on theory, research methods, writing research proposals, and publishing research in peer-reviewed outlets.

## Bioregional Planning

Bioregional Planning is aimed at students focused on how the biophysical attributes of a region influence the human dimensions of culture and settlement and the reciprocal of this. Offered jointly with the Department of Landscape Architecture and Environmental Planning, the program has an interdisciplinary core of courses that provides the background for addressing complex issues in the areas of environmental analysis, planning, and policy. Employment is available in both the private and public sectors, wherever there is emphasis on large-scale planning and management.

## Ecology

The Environment and Society Department offers MS and PhD degrees in Ecology through the ecology program at Utah State University. This program is administered by the interdepartmental Ecology Center. For further information, see the *Interdepartmental Program in Ecology* section of this catalog on pages 228-229.

## Geography

Geography is geared for students interested in exploring the availability and location of the earth's natural resources, the physical and cultural processes that occur at the earth's surface, and the spatial interactions among components of human society and the biophysical environment. Career opportunities are available in both the private and public sectors in such areas as business, planning, resource and economic development, environmental assessment, and education.

## Recreation Resource Management

Recreation Resource Management is for graduate students interested in planning and management of visitor use in wildland recreation settings, such as state and national parks, forests, monuments, and wilderness areas, requiring an understanding of the landscape, its natural resources, and the people who visit. Degree programs offer courses in both the bio-physical and social sciences, along with an emphasis on communication and collaboration skills. Upon completion of a degree program, opportunities are available to work as recreation planners and managers; park, forest, monument, or wilderness rangers; environmental interpreters; visitor center directors; and other similar occupations. Graduate study provides additional opportunities for research and teaching in higher education, as well as work in the government, nongovernment, and private sectors.

## Human Dimensions of Ecosystem Science and Management

These degrees are the first of their kind in the country. They are aimed at students who desire to be problem-solvers with an ability to integrate the human and biophysical aspects of ecosystems, and to analyze policies and decisions that encourage sustainability of human communities and ecosystems. The MS degree prepares students for professional practice in natural resources and environmental

planning and management, policy and program analysis, public affairs, environmental education, community assessment and collaboration, conflict management, and extension/outreach. The PhD program places a greater emphasis on basic theory and research methods in one or more social science disciplines, and thus prepares students for university teaching, research, and extension; for conducting agency and private organizational research; and for positions in formal policy and program evaluation.

## Natural Resources (MNR)

The MNR is a nonthesis master's degree program designed for students and practicing professionals seeking advanced training in natural resource management, with an emphasis on collaboration and interdisciplinary teamwork. Employment is available in both the private and public sectors, in positions where management skills are of paramount importance.

## Graduate Certificates

The **National Environmental Policy Act (NEPA)** program offers training at the graduate level related to the National Environmental Policy Act, including how to manage the NEPA process and write effective NEPA documents, reviewing NEPA documents, environmental risk communication, environmental compliance, interdisciplinary team-building, environmental contracting, cumulative impact analysis and documentation, conflict management, and socio-economic impact analysis. The certificate leads to careers in federal natural resource agencies, typically as a member of planning teams, where NEPA expertise is critical to decision-making regarding alternative uses of the land.

The **Natural Resource and Environmental Education (NREE)** program provides graduate students with a comprehensive education for understanding and communicating natural resources and environmental information, and for developing the analytical skills needed to effectively implement appropriate environmental education and communication techniques for varying audiences. Careers are available with land management agencies; in the education sector—both formal (K-12 school-based) and nonformal (youth, community, and outdoor); in nonprofit organizations; and in the for-profit commercial sector.

## Internships

Students are encouraged to undertake one or more internships with various agencies and organizations, as a means of exploring various career possibilities.

## Research

The generation of new knowledge through research is one of the key contributions that an academic department makes to professions and society at large. Research is also a major venue for the interaction of graduate students and faculty in the Department of Environment and Society. Although faculty and students work on many different issues, the research strives to be interdisciplinary and focuses on merging the relevant social and natural sciences. Work is undertaken in Utah and beyond, including several projects elsewhere in the United States and in developing nations. Funding comes from a variety of public and private sources. The department houses one institute and three programs that also collaborate on research. These include the Institute for Outdoor Recreation and Tourism, the Natural Resource and Environmental Policy Program, the Geographic Education Program, and the Environmental Education Program.

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## Financial Assistance

General aspects of financial support for graduate students at Utah State University are listed on pages 111-112 in the *Graduate Financial Assistance* section. This includes important information on the University-wide policies and terms of reference for research and teaching assistantships, graduate tuition obligations and benefits, Western Regional Graduate Programs, and competitive University-wide fellowships and scholarships.

The Department of Environment and Society intends that all graduate students be financially supported. Graduate research assistantships are available through major professors having contracts, grants, or other awards. Internships may also be created on a case-by-case basis. A student may want to author or co-author a proposal with a faculty member to fund a new initiative. There are also open competitions for graduate scholarships and fellowships through the College of Natural Resources. The department also has a few graduate teaching assistantships where graduate students typically help instructors with teaching, grading, or recitation in large courses. Interested persons should contact the department early in the application process for more information on financial assistance for graduate students. Prospective students may also visit: <http://www.cnr.usu.edu/envs>

## Environment and Society Faculty

### Professors

*Mark W. Brunson*, environmental knowledge, attitudes and behavior, outdoor recreation  
*Steven E. Daniels*, natural resource policy and sociology  
*Richard S. Krannich*, natural resource sociology and policy  
*H. Charles Romesburg*, environmental decision making, natural resource research methods and survey sampling, bioethics  
*Joseph A. Tainter*, sustainability, social conflict in environmental issues, human responses to climate change and environmental degradation, human use of energy and resources  
*Richard E. Toth*, bioregional planning and water resources management

### Adjunct Professors

*Thomas C. Edwards, Jr.*, Utah Cooperative Fish and Wildlife Research Unit, spatial  
*Terry L. Sharik*, academic administration and leadership, teaching and learning pedagogy, forest ecology

### Professors Emeritus

*Clifford B. Craig*, human geography, geographic education, rural/urban planning and development, geography of Utah, GIS education  
*Leona K. Hawks*, green consumerism, resource conservation and efficiency, human impacts on the environment  
*James J. Kennedy*, organizational behavior, forest economics  
*Derrick J. Thom*, cultural geography, international rural development, land use planning, Africa

### Research Professor Emeritus

*Leila McReynolds Shultz*, plant taxonomy and geography

### Associate Professors

*Steven W. Burr*, outdoor recreation, nature-based tourism  
*Christopher A. Conte*, African, environmental history  
*D. Layne Coppock*, range ecology and management, international development, systems analysis

*Joanna L. Endter-Wada*, natural resource and environmental policy, interdisciplinary social sciences, water management and planning  
*Robert H. Schmidt*, wildlife policy and human dimensions, wildlife damage management

### Adjunct Associate Professors

*Christopher Call*, vegetation manipulation/management  
*Arthur J. Caplan*, environmental economics, public policy, quantitative analysis  
*Nancy O. Mesner*, water quality extension specialist, water policy and modeling  
*Peggy Petzelka*, environmental sociology, rural sociology, social change and development  
*R. Douglas Ramsey*, remote sensing, geographic information systems, landscapes

### Associate Professor Emeritus

*Ted J. Alsop*, physical geography, university pedagogy, photogrammetry

### Assistant Professors

*Michael Dietz*, sustainable living, water resource management  
*Ann Laudati*, human-environmental interactions, community conservation and development, political ecology, natural resources and violent conflict, Sub-Saharan Africa  
*Zhao Ma*, environmental/natural resource policy  
*Christopher Monz*, recreation ecology, outdoor recreation, wilderness management  
*Claudia A. Radel*, human-environment geography, cultural/political ecology, feminist geography

### Visiting Assistant Professor

*Miriam S. Wyman*, human dimensions of forest management, international ecotourism

### Adjunct Assistant Professors

*David T. Anderson*, Project Director Utah Botanical Center  
*Benny Bobowski*, wildlife biology, rangeland ecology, ecosystem management  
*Paul W. Box*, geographic information systems, spatial analysis and modeling  
*Christopher Cokinos*, literary nature and science writing  
*Michael F. Harper*, Latin America, educational technology, geography education  
*John Haskin*, novice teacher development and qualitative research methodologies  
*Tamsin C. McCormick*, physical geology, land management, environmental education, habitat restoration  
*Nicole L. McCoy*, natural resource economics and policy  
*Paul Rogers*, aspen ecology, lichenology, large-scale monitoring, Forest Service policy  
*Douglas G. Wachob*, development effects on wildlife, environmental education

### Lecturers

*Benjamin D. Baldwin*, Tehabi Project Leader, internship development, leadership and teamwork  
*Judith A. Kurtzman*, natural resource policy

### Adjunct Lecturer

*Catherine A. "Kate" Stephens*, Program Coordinator of Utah Conservation Corps, environmental education

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## Adjunct Instructors

*Dana E. Dolsen*, Wildlife Planning Manager, State of Utah,

Department of Natural Resources

*Larry H. Freeman*, environmental writing, NEPA specialist

*Richard C. Moore*, NEPA and CEQ compliance, training,  
and consulting

*Michael Smith*, NEPA consulting and workshop training

*Rhey M. Solomon*, environmental analyst, NEPA trainer/  
instructor/facilitator

## Course Descriptions

Environment and Society (ENVS), [click here](#)

Geography (GEOG), [click here](#)

National Environmental Policy Act (NEPA), [click here](#)