

Admission Requirements For This Major

1. New freshmen admitted to USU in good standing qualify for admission to this major.

2. Transfer students from other institutions or other USU majors need at least a 2.5 total GPA for admission to the Conservation and Restoration Ecology major in good standing. Special attention will be given to the amount of, and performance in, prerequisite math and science courses.

The Program

Conservation is the scientific discipline that seeks to conserve, maintain, and renew the ecological systems that sustain life on this planet, and enrich the quality of life of the citizens who inhabit it. Restoration ecology is the science and practice of ecological management with the goal of recovering, or where necessary, recreating those ecological systems that have been damaged or eliminated through overuse, neglect, or disaster. Together, these two themes characterize a new discipline in natural resource management. This major is dedicated to helping students achieve a broad understanding of ecological systems and processes. Conservation and Restoration Ecology emphasizes the hands-on application of practices that foster and sustain native species of plants and animals, ecological communities, and ecosystems. This new discipline addresses such threats as invasive species, habitat degradation, and land use change effects. This degree guides students in developing practical solutions to the problems that diminish the ecological integrity of wildland ecosystems and the quality of life of their inhabitants and visitors.

The curriculum includes a solid foundation in basic science (biology, chemistry, mathematics, and statistics), as well as a strong program in plant and animal ecology and the ecosystems of the Intermountain West. However, in contrast to more traditional degree programs in Natural Resources, the degree is designed to maximize the flexibility of the curriculum to meet the individual interests of the student. Students majoring in Conservation and Restoration Ecology design a personal curriculum in consultation with a faculty advisor, emphasizing coursework in particular ecosystems, disciplines, or techniques.

The formal requirements for a Conservation and Restoration Ecology major, together with University Studies requirements, are outlined in this program guide, which students are urged to read carefully and discuss with their academic advisor. The Conservation and Restoration Ecology major is an intensive campus-based program designed with the expectation that students will acquire additional practical experience through various summer internship opportunities coordinated within the College of Natural Resources.

Career Opportunities

The Conservation and Restoration Ecology degree will educate students for employment with private environmental and biological research and consulting companies, private industry with environmental divisions, private land reclamation contractors, private land owners, nonprofit environmental organizations, and state and federal land management agencies. Graduates will be involved in many endeavors, including developing and implementing listed species recovery plans or plans for conservation of biological diversity, developing habitat conservation plans or management plans for species conservation, restoring altered ecosystems, and managing protected ecosystems. Graduates will typically work as conservation biologists, conservation planners, population ecologists, restoration ecologists, and research technicians; in addition, many will further their education in graduate school.

Degrees and Programs Offered Through This Department

Conservation and Restoration Ecology: Bachelor of Science (BS)

Forestry: BS, Master of Science (MS), and Doctor of Philosophy (PhD)

Rangeland Resources: BS

Range Science: MS and PhD

Wildlife Science: BS

Wildlife Biology: MS and PhD

Ecology: MS and PhD

Natural Resources: Master of Natural Resources (MNR)

Academic Advisement

All students should contact their academic advisor for assistance with course selection, program planning, and meeting graduation requirements. If they do not know who their advisor is, students should contact the Department of Wildland Resources (NR 206) or the College of Natural Resources Academic Service Center (NR 120).

Graduation Requirements: BS Degree in Conservation and Restoration Ecology

Minimum University Requirements*

Total credits	120
Grade point average (most majors require higher GPA)	2.00 GPA
Credits of C- or better	100
Credits of upper-division courses (#3000 or above)	40
USU credits	30
(20 of which must be upper division, including 10 required by major)	
Completion of approved major program of study	See department
Credits in minor (if required by department)	12
Credits in American Institutions (ECN 1500; HIST 1700, 2700, or 2710; POLS 1100; or USU 1300)	3
University Studies requirements	See below

*Colleges and departments may require more credits or a higher GPA. See requirements on this sheet.

University Studies Requirements for Conservation and Restoration Ecology Major

Note: Approved University Studies courses and requirements are listed in the *General Catalog*. The most current listings are shown online at: <http://www.usu.edu/generalcatalog/>

General Education Requirements (30-34 credits)

Competency Requirements (9-10 credits)

Communications Literacy (CL1 and CL2) (6 credits)

ENGL 1010 (CL1) (3 credits) or satisfactory AP, CLEP, IBO, ACT, or SAT score

AND

ENGL 2010 (CL2) (3 credits) or satisfactory IBO score

Quantitative Literacy (QL) (3-4 credits)

MATH 1050 (4 credits)

OR

MATH 1100 (3 credits)

OR

Satisfactory AP, CLEP, IBO, ACT, or SAT score

Computer and Information Literacy (0 credits)

Passing grade on six computer and information literacy related examinations. Students must pass all six examinations before earning 37 USU semester credits. (Effective Spring Semester 2010, students must fulfill this requirement prior to enrolling in ENGL 2010.)

Breadth Requirements (18-20 credits)

Select at least one approved course from each of the following six categories: **American Institutions (BAI)**, **Creative Arts (BCA)**, **Humanities (BHU)**, **Life Sciences (BLS)**, **Physical Sciences (BPS)**, and **Social Sciences (BSS)**. (CLEP or AP credit may be used.) At least two of the six breadth courses must be University Studies courses with a **USU prefix** (excluding USU 1000, 1010, 1100, 3330, 4900, and 6900). BIOL 1620 (BLS) and CHEM 1110 (BPS), 1120 (BPS), or 1220 (BPS) may be used toward this requirement. ENVS 2340 (BSS) is recommended.

Exploration Requirement (3-4 credits)

Choose an additional class from one of the following General Education categories: QL, BAI, BCA, BHU, BLS, BPS, or BSS. Since MATH 1050 and 1100 are both required for the Conservation and Restoration Ecology major, one of these courses will fulfill the Quantitative Literacy requirement and the other will fulfill the Exploration requirement.

Depth Education Requirements

Communications Intensive (CI) (2 courses)

WILD 4750, plus another course having CI designation, will meet this requirement.

Quantitative Intensive (QI) (1 course)

STAT 2000 or 3000 will meet this requirement.

Depth Course Requirements (4 credits minimum, including 2 credits minimum completed in each of two courses)

Complete at least 2 credits in approved 3000-level or above courses from each of the following two categories: **Humanities and Creative Arts (DHA)** and **Social Sciences (DSS)**. ENVS 4000 (DSS) may be used toward this requirement. PHIL 3510 (DHA) is recommended.

Conservation and Restoration Ecology Major (92 credits)

All courses required for the major must be taken on an *A-B-C-D-F* basis. A grade of *C-* or better is required for all WILD courses used to meet the requirements for a major in Conservation and Restoration Ecology. The grade point average for all courses taught by the College of Natural Resources must be 2.5 or higher.

A. General Science Foundation Courses (34 credits)

- | | | |
|---|---|---|
| <input type="checkbox"/> BIOL 1610 | Biology I (F) | 4 |
| <input type="checkbox"/> BIOL 1620 (BLS) ¹ | Biology II (Sp) | 4 |
| <input type="checkbox"/> MATH 1050 (QL) | College Algebra (F,Sp,Su) | 4 |
| <input type="checkbox"/> MATH 1100 (QL) | Calculus Techniques (F,Sp,Su) | 3 |
| <input type="checkbox"/> SOIL 3000 | Fundamentals of Soil Science (F) | 4 |
| <input type="checkbox"/> STAT 2000 (QI) | Statistical Methods (F,Sp) (3 cr) or | |
| <input type="checkbox"/> STAT 3000 (QI) | Statistics for Scientists (F,Sp,Su) (3 cr) | 3 |
| <input type="checkbox"/> NR 2220 | General Ecology (F,Sp) | 3 |

Select one of the following chemistry series (9 credits):

General Chemistry Series

- | | | |
|--|-------------------------------------|---|
| <input type="checkbox"/> CHEM 1110 (BPS) | General Chemistry I (F,Sp) | 4 |
| <input type="checkbox"/> CHEM 1115 | General Chemistry Laboratory (F,Sp) | 1 |
| <input type="checkbox"/> CHEM 1120 (BPS) | General Chemistry II (Sp) | 4 |

Chemistry Principles Series

- | | | |
|--|---|---|
| <input type="checkbox"/> CHEM 1210 | Principles of Chemistry I (F,Sp) | 4 |
| <input type="checkbox"/> CHEM 1215 | Chemical Principles Laboratory I (F,Sp) | 1 |
| <input type="checkbox"/> CHEM 1220 (BPS) | Principles of Chemistry II (F,Sp,Su) | 4 |

B. Departmental Common Courses (24 credits)

- | | | |
|------------------------------------|--|---|
| <input type="checkbox"/> WILD 2000 | Introduction to Wildland Resources (F,Sp) | 1 |
| <input type="checkbox"/> WILD 3600 | Wildland Plant Ecology and Identification (F) | 4 |
| <input type="checkbox"/> WILD 3610 | Wildland Animal Ecology and Identification (F) | 4 |

Credits

- | | | |
|---|--|---|
| <input type="checkbox"/> WILD 3800 | Wildland Ecosystems (Sp) | 3 |
| <input type="checkbox"/> WILD 3810 | Plant and Animal Populations (Sp) | 3 |
| <input type="checkbox"/> WILD 4750 (CI) | Monitoring and Assessment in Natural Resource and Environmental Management (F) | 3 |
| <input type="checkbox"/> WILD 4850 | Vegetation and Habitat Management (F) | 3 |
| <input type="checkbox"/> WILD 4910 | Assessment and Synthesis in Natural Resource Science (Sp) | 3 |

C. Degree Program Courses (13 credits)

- | | | |
|--|---|---|
| <input type="checkbox"/> ENVS 3000 | Natural Resources Policy and Economics (F) | 4 |
| <input type="checkbox"/> ENVS 4000 (DSS) | Human Dimensions of Natural Resource Management (F) | 3 |
| <input type="checkbox"/> WILD 4600 | Conservation Biology (Sp) | 3 |
| <input type="checkbox"/> WILD 4700 | Ecological Foundations of Restoration (Sp) | 3 |

D. Degree Program Electives (21 credits)

Students in the Conservation and Restoration Ecology major must meet with their advisor and plan a program of study for their 21 credits of degree program electives. Students must identify an organizing theme or comprehensive plan to guide the selection of their degree program electives, and all courses counted toward this requirement must be approved in advance by the student's advisor. Courses taken to complete a dual major with another major within the College of Natural Resources may *not* be counted toward fulfillment of this requirement.

E. Free Elective Credits

Students may take the remainder of the 120 credits from any department. The guidelines described previously under "Breadth Requirements" and "Depth Education Requirements" should be consulted to ensure meeting General Education and University Studies Requirements.

Students who transfer to USU with an Associate of Arts (AA) or Associate of Science (AS) degree from an approved institution will have satisfied the General Education portion of the University Studies requirements, but will still need to complete the Depth Education portion.

¹University Studies designations, including (BLS), (BPS), (DSS), (QI), and (QL), indicate that these courses may be counted for University Studies requirements, as well as for the Conservation and Restoration Ecology major.

Note: Students wanting to pursue federal employment should check the following U.S. Office of Personnel Management website for a listing of required coursework:

<http://www.opm.gov/qualifications/SEC-IV/B/GS0400/0408.HTM>

Conservation and Restoration Ecology Major Recommended Four-Year Plan of Study

Students should meet regularly with their faculty advisor and carefully plan their academic program, keeping in mind that many upper-division courses have prerequisites and must be taken in sequence. Students following the recommended schedule listed below should be able to complete degree requirements in four years (eight semesters).

A. First Year (28 credits)

Fall Semester (14 credits)

- | | | |
|--|--|---|
| <input type="checkbox"/> BIOL 1610 | Biology I | 4 |
| <input type="checkbox"/> ENGL 1010 (CL1) | Introduction to Writing: Academic Prose | 3 |
| <input type="checkbox"/> ENVS 2340 (BSS) | Natural Resources and Society (3 cr) or | |
| <input type="checkbox"/> | Other approved Breadth Social Sciences (BSS) course (3 cr) | 3 |
| <input type="checkbox"/> USU 1300 (BAI) | U.S. Institutions (3 cr) or | |
| <input type="checkbox"/> | Other approved Breadth American Institutions (BAI) course (3 cr) | 3 |
| <input type="checkbox"/> WILD 2000 | Introduction to Wildland Resources | 1 |

Spring Semester (14 credits)

- | | | |
|--|--|---|
| <input type="checkbox"/> BIOL 1620 (BLS) | Biology II | 4 |
| <input type="checkbox"/> MATH 1050 (QL) | College Algebra | 4 |
| <input type="checkbox"/> USU 1320 (BHU) | Civilization: Humanities (3 cr) or | |
| <input type="checkbox"/> | Other approved Breadth Humanities (BHU) course (3 cr) | 3 |
| <input type="checkbox"/> USU 1330 (BCA) | Civilization: Creative Arts (3 cr) or | |
| <input type="checkbox"/> | Other approved Breadth Creative Arts (BCA) course (3 cr) | 3 |

B. Second Year (30 credits)

Fall Semester (16 credits)

	Credits
<input type="checkbox"/> CHEM 1110 (BPS) General Chemistry I (4 cr) or	
<input type="checkbox"/> CHEM 1210 Principles of Chemistry I (4 cr)	4
<input type="checkbox"/> MATH 1100 (QL) Calculus Techniques	3
<input type="checkbox"/> NR 2220 General Ecology.	3
<input type="checkbox"/> Approved Depth Humanities and Creative Arts (DHA) course.	3
<input type="checkbox"/> Free electives.	3

Spring Semester (14 credits)

<input type="checkbox"/> CHEM 1115 General Chemistry Laboratory (1 cr) or	
<input type="checkbox"/> CHEM 1215 Chemical Principles Laboratory I (1 cr)	1
<input type="checkbox"/> CHEM 1120 (BPS) General Chemistry II (4 cr) or	
<input type="checkbox"/> CHEM 1220 (BPS) ² Principles of Chemistry II (4 cr).	4
<input type="checkbox"/> ENGL 2010 (CL2) Intermediate Writing: Research Writing in a Persuasive Mode	3
<input type="checkbox"/> STAT 2000 (QI) Statistical Methods (3 cr) or	
<input type="checkbox"/> STAT 3000 (QI) Statistics for Scientists (3 cr)	3
<input type="checkbox"/> Degree program electives or free electives.	3

C. Third Year (31 credits)

Fall Semester (16 credits)

<input type="checkbox"/> SOIL 3000 Fundamentals of Soil Science	4
<input type="checkbox"/> WILD 3600 Wildland Plant Ecology and Identification.	4
<input type="checkbox"/> WILD 3610 Wildland Animal Ecology and Identification.	4
<input type="checkbox"/> Degree program electives	4

Spring Semester (15 credits)

<input type="checkbox"/> WILD 3800 Wildland Ecosystems	3
<input type="checkbox"/> WILD 3810 Plant and Animal Populations.	3
<input type="checkbox"/> Degree Program Electives ³	9

D. Fourth Year (31 credits)

Fall Semester (16 credits)

<input type="checkbox"/> ENVS 3000 Natural Resources Policy and Economics.	4
<input type="checkbox"/> ENVS 4000 (DSS) Human Dimensions of Natural Resource Management	3

Credits

<input type="checkbox"/> WILD 4750 (CI) Monitoring and Assessment in Natural Resource and Environmental Management	3
<input type="checkbox"/> WILD 4850 Vegetation and Habitat Management	3
<input type="checkbox"/> Degree program electives	3

Spring Semester (15 credits)

<input type="checkbox"/> WILD 4600 Conservation Biology	3
<input type="checkbox"/> WILD 4700 Ecological Foundations of Restoration.	3
<input type="checkbox"/> WILD 4910 Assessment and Synthesis in Natural Resource Science.	3
<input type="checkbox"/> Degree program electives	6

²CHEM 1220 may conflict with other courses taught this semester. This course could be taken during spring semester of the senior year.

³As part of these electives, it is recommended that students complete a 3-credit course having an economic emphasis.

Requirement Changes

Graduation requirements shown on this sheet are subject to change. Students should check with their faculty advisor regarding possible changes or for additional information regarding degree requirements, course sequencing, and departmental specialization options and their related coursework.

Materials for Persons with Disabilities

This requirement sheet is available in digital format, recordings, or large print upon request to the USU Disability Resource Center.

For information contact

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