RANGELAND ECOLOGY AND MANAGEMENT (B.S.)

This major prepares students to conserve, restore, and manage the vast landscapes known as rangelands. These ecosystems include deserts, prairies, shrublands, and woodlands. The degree program focuses on the scientific study of rangelands and introduces principles for managing and restoring rangelands for maximum benefit and ecosystem sustainability.

Required course work includes the university requirements (see regulation J-3 (https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/)) and:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>AVS 109</td>
<td>The Science of Animals that Serve Humanity</td>
<td>3-4</td>
</tr>
<tr>
<td>or AVS 110</td>
<td>Science of Animal Husbandry</td>
<td></td>
</tr>
<tr>
<td>BIOL 114</td>
<td>Organisms and Environments</td>
<td>3-4</td>
</tr>
<tr>
<td>or BIOL 115</td>
<td>Cells and the Evolution of Life</td>
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<tr>
<td>BIOL 213</td>
<td>Structure and Function Across the Tree of Life</td>
<td>4</td>
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<tr>
<td>or PLSC 205</td>
<td>General Botany</td>
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<tr>
<td>COMM 101</td>
<td>Fundamentals of Oral Communication</td>
<td>3</td>
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<tr>
<td>or AGED 101</td>
<td>Verbal Communication in Agriculture, Food, and Natural Resources</td>
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<tr>
<td>ECON 202</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>FOR 221/ WLF 220</td>
<td>Principles of Ecology</td>
<td>3</td>
</tr>
<tr>
<td>FOR 235</td>
<td>Society and Natural Resources</td>
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<tr>
<td>MATH 143</td>
<td>College Algebra</td>
<td>3-4</td>
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<tr>
<td>or MATH 160</td>
<td>Survey of Calculus</td>
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<tr>
<td>NR 101</td>
<td>Exploring Natural Resources</td>
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<tr>
<td>REM 151</td>
<td>Rangeland Principles</td>
<td>3</td>
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<tr>
<td>SOIL 205</td>
<td>The Soil Ecosystem</td>
<td>3</td>
</tr>
<tr>
<td>SOIL 206</td>
<td>The Soil Ecosystem Lab</td>
<td>1</td>
</tr>
<tr>
<td>STAT 251</td>
<td>Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>REM 252</td>
<td>Wildland Plant Identification</td>
<td>2</td>
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<tr>
<td>REM 253</td>
<td>Wildland Plant Identification Field Studies</td>
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Select one of the following: 4

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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CHEM 101 &amp; 101L</td>
<td>Introduction to Chemistry and Introduction to Chemistry Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 111 &amp; 111L</td>
<td>General Chemistry I and General Chemistry I Laboratory</td>
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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ENGL 313</td>
<td>Business Writing</td>
<td>3</td>
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<tr>
<td>or ENGL 317</td>
<td>Technical Writing II</td>
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</tr>
<tr>
<td>or ENGL 318</td>
<td>Science Writing</td>
<td></td>
</tr>
<tr>
<td>or WLF 370</td>
<td>Management and Communication of Scientific Data</td>
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</tr>
<tr>
<td>FISH 430</td>
<td>Riparian and River Ecology</td>
<td>3</td>
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<tr>
<td>or FOR 462</td>
<td>Watershed Science and Management</td>
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</tr>
<tr>
<td>FOR 375</td>
<td>Fundamentals of Geometrics</td>
<td>3</td>
</tr>
<tr>
<td>NRS 383</td>
<td>Natural Resource and Ecosystem Service Economics</td>
<td>3</td>
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or AGEC 451 | Applied Environmental and Natural Resource Economics |   |

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>REM 341</td>
<td>Systematic Botany</td>
<td>3</td>
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<tr>
<td>REM 410</td>
<td>Principles of Vegetation Monitoring and Measurement</td>
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<tr>
<td>REM 456</td>
<td>Integrated Rangeland Management</td>
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</tr>
<tr>
<td>REM 459</td>
<td>Rangeland Ecology</td>
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<tr>
<td>REM 460</td>
<td>Integrated Field Studies in Rangelands</td>
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<tr>
<td>SOIL 454</td>
<td>Pedology</td>
<td>3</td>
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Select one of the following: 3-4

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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>REM 280</td>
<td>Introduction to Wildland Restoration</td>
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<tr>
<td>&amp; PLSC 419</td>
<td>and Plant Community Restoration Methods</td>
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<tr>
<td>REM 440</td>
<td>Restoration Ecology</td>
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</table>

Career Track courses with Advisor Input and Approval (see below) 15

Total Hours 90-94

Students must complete 15 credits of advisor-approved electives contributing to a specific career track that may include the following:

- **Restoration Ecology:** Millions of acres of rangeland and forests have been disturbed by fire, invasive plants, and overgrazing. Academic advisors in rangeland conservation have developed a set of electives for students interested in a career in wildland restoration. Completing these career track electives will fulfill requirements for the Restoration Ecology Undergraduate Academic Certificate. Careful selection of courses can also highlight expertise in botany and plant materials to qualify for professions as a botanist.

- **Wildlife Habitat:** Many species of wildlife live on rangelands, and the management of wildlife habitat is an important and sought after skill. With help from their academic advisor, rangeland students can complete a career track that will show expertise in wildlife habitat management and fulfill the requirements for a Minor in Wildlife Resources.

- **Land and Livestock:** This career track is for students interested in hands-on management of rangelands. Academic advisors work with students to select courses that provide the knowledge and skills needed to manage rangelands with grazing and fire to enhance livestock production while sustaining communities of native plants and animals. Completion of these courses can also satisfy the requirements for a Minor in Animal Science or Soil Science.

- **Wildland Fire:** Wildfire is one of the major forces causing change on rangeland ecosystems. Completing a specific set of advisor-approved electives will enable students to show knowledge of land management related to wildland fire and fulfill the requirements for a Minor in Fire Ecology and Management.

- **Individual Interest:** Students can work with their advisor to select specific courses to show expertise in a career track of specific interest that may include watershed or riparian ecologist, natural resource GIS specialist, environmental consultant, tribal land manager, resource economist, or many other interests related to rangelands.

Courses to total 120 credits for this degree

<table>
<thead>
<tr>
<th>Fall Term 1</th>
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<tbody>
<tr>
<td>ENGL 101</td>
<td>Writing and Rhetoric I</td>
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<td>NR 101</td>
<td>Exploring Natural Resources</td>
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<tr>
<td>REM 151</td>
<td>Rangeland Principles</td>
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<td>AVS 109 or AVS 110</td>
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<tr>
<td>Term</td>
<td>Course</td>
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<tr>
<td><strong>Spring Term 1</strong></td>
<td>MATH 143 OR MATH 160</td>
</tr>
<tr>
<td><strong>Fall Term 2</strong></td>
<td>COMM 101 or AGED 101</td>
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<td></td>
<td>ECON 202</td>
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<td>FOR 235</td>
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<td>STAT 251</td>
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<tr>
<td></td>
<td>BIO 114 OR BIO 115</td>
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<tr>
<td><strong>Spring Term 2</strong></td>
<td>COMM 101 or AGED 101</td>
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<tr>
<td></td>
<td>ECON 202</td>
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<td>FOR 221 OR NR 221</td>
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<td>BIO 213 OR PLSC 205</td>
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<td><strong>Fall Term 3</strong></td>
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<td></td>
<td>REM 410</td>
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<td>SOIL 205</td>
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<td>SOIL 206</td>
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<tr>
<td></td>
<td>Elective Course</td>
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<tr>
<td></td>
<td>ENGL 313 OR ENGL 317 OR ENGL 318 OR WLF 370</td>
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<tr>
<td><strong>Spring Term 3</strong></td>
<td>NRS 383 OR AGEC 451</td>
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<td></td>
<td>REM 341</td>
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<tr>
<td></td>
<td>Career Track, Major Elective Course</td>
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<tr>
<td></td>
<td>(PLSC 419 AND REM 280)</td>
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<tr>
<td><strong>Fall Term 4</strong></td>
<td>REM 459</td>
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<td>REM 460</td>
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<td></td>
<td>SOIL 454</td>
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<tr>
<td></td>
<td>International Course</td>
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<td>Career Track, Major Elective Course</td>
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<td>Career Track, Major Elective Course</td>
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<td><strong>Spring Term 4</strong></td>
<td>REM 456</td>
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<td>American Diversity Course</td>
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<td>Career Track, Major Elective Course</td>
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<td></td>
<td>FISH 430 OR FOR 462</td>
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<tr>
<td><strong>Total Hours</strong></td>
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</table>

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar’s Office regarding your official degree/certificate completion status.

1. Graduates will be able to implement effective planning and problem-solving approaches individually and in teams that consider economic, social, and ecological impacts of rangeland projects and plans.
2. Graduates will be able to use spatial tools (including maps, GPS, GIS, and remote sensing) to observe and interpret ecosystems and aid in making management decisions.
3. Graduates will be proficient with rangeland inventories and perform field measurements of upland and riparian habitats in shrublands, grasslands, woodlands, and deserts.
4. Graduates will be able to effectively communicate plans and decisions in light of existing policies and laws.
5. Graduates demonstrate a sound understanding of science and the application of the scientific method to addressing natural resource questions.