Idaho State Board of Education
Proposal for Other Academic Program Activity and Professional-Technical Education

<table>
<thead>
<tr>
<th>Date of Proposal Submission:</th>
<th>7/30/2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution Submitting Proposal:</td>
<td>University of Idaho</td>
</tr>
<tr>
<td>Name of College, School, or Division:</td>
<td>College of Natural Resources (CNR)</td>
</tr>
<tr>
<td>Name of Department(s) or Area(s):</td>
<td>Department of Conservation Social Sciences (CSS)</td>
</tr>
</tbody>
</table>

Program Identification for Proposed New, Modified, or Discontinued Program:

| Title: | Resource Recreation and Tourism |
| Degree: | B.S. Res.Rc. |
| Method of Delivery: | On-Campus |
| CIP code (consult IR /Registrar) | 03.0207 |
| Proposed Starting Date: | Fall 2012 |
| Indicate if the program is: | Regional Responsibility | x | Statewide Responsibility |

Indicate whether this request is either of the following:

- [X] New Program (minor/option/emphasis or certificate)
- [ ] Discontinuance of an Existing Program/Option
- [ ] New Off-Campus Instructional Program
- [ ] Consolidation of an Existing Program
- [ ] New Instructional/Research Unit
- [ ] Expansion of an Existing Program
- [ ] Contract Program/Collaborative
- [X] Other: Change degree title and add two options

<table>
<thead>
<tr>
<th>College Dean (Institution)</th>
<th>Date</th>
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</table>

<table>
<thead>
<tr>
<th>Vice President for Research (as applicable)</th>
<th>Date</th>
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</table>

<table>
<thead>
<tr>
<th>Graduate Dean (as applicable)</th>
<th>Date</th>
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<table>
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<tr>
<th>State Administrator, SDPTE (as applicable)</th>
<th>Date</th>
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</table>

<table>
<thead>
<tr>
<th>Chief Fiscal Officer (Institution)</th>
<th>Date</th>
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<table>
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<tr>
<th>Academic Affairs Program Manager</th>
<th>Date</th>
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<table>
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<tr>
<th>Chief Academic Officer (Institution)</th>
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<table>
<thead>
<tr>
<th>Chief Academic Officer, OSBE</th>
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</tr>
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<table>
<thead>
<tr>
<th>President</th>
<th>Date</th>
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<table>
<thead>
<tr>
<th>SBOE/OSBE Approval</th>
<th>Date</th>
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Before completing this form, refer to Board Policy Section III.G., Program Approval and Discontinuance. This proposal form must be completed for the creation of each new program and each program discontinuation. All questions must be answered.

1. **Describe the nature of the request.** Will this program/option be related or tied to other programs on campus? Please identify any existing program, option that this program will replace. If this is request to discontinue an existing program, provide the rationale for the discontinuance. Indicate the year and semester in which the last cohort of students was admitted and the final term the college will offer the program. Describe the teach-out plans for continuing students.

   1. Change the name of the major Resource Recreation and Tourism (RRT) to Natural Resource Conservation.
   2. Change the name of the degree from B.S.Res.Rc. to **B.S.Nat.Resc.Consv.**
   3. Create two new options: (1) Conservation Planning and Management, and (2) Conservation Science. Current students in the RRT program will be able to switch to the Conservation Planning and Management option in the Natural Resource Conservation degree program. New students will enter the Natural Resource Conservation degree program and will then self-select one of the two new options.
   4. To properly reflect the intent of the degree and describe the classification of instruction, change the CIP code from 03.0207 to **03.0101**

   **Detail for CIP Code 03.0101**
   **Title:** Natural Resources/Conservation, General.
   **Definition:** A general program that focuses on the studies and activities relating to the natural environment and its conservation, use, and improvement. Includes instruction in subjects such as climate, air, soil, water, land, fish and wildlife, and plant resources; in the basic principles of environmental science and natural resources management; and the recreational and economic uses of renewable and nonrenewable natural resources.

2. **List the objectives of the program.** The objectives should address specific needs (industry) the program will meet. They should also identify the expected student learning outcomes and achievements. *This question is not applicable to requests for discontinuance.*

   The College of Natural Resources (CNR) Department of Conservation Social Science (CSS) is a national leader in the human dimensions of natural resource management and conservation, meeting the practical career needs of students and leading the University of Idaho in interdisciplinary and engaged scholarship to address emerging natural resource problems. CSS addresses the question: “How do human communities and institutions manage their relationship with the state’s tremendous wealth of ecological resources?”

   The objective of this modification to the current B.S. degree program is to better prepare undergraduate students for 21st century careers in the human dimensions of natural resource conservation and management.

   **Expected student learning outcomes and achievements include the following:**
   **Evaluate and Use Basic Science Research:** Gather, critically evaluate and use appropriate scientific research materials (e.g., scientific sources, secondary socio-demographic data) and employ selected methodologies (e.g., survey research, experimentation, and observation) specific to the conservation aspects of natural resources.
   **Recognize Conservation Policy:** Identify and understand the development of policy and the application of regulations used in conservation planning and management at various landscape...
levels (e.g., land parcel, community, region, ecosystem, watershed, or a cultural landscape).

**Use Planning and Management Principles to solve problems:** Use sound management skills and processes (e.g., appropriate theoretical and applied frameworks, decision making, and strategic planning) to productively address conservation problems and deliver results.

**Communicate Sensibly:** Create and practice effective oral, written, and graphic communication with diverse audiences, especially stakeholders in conservation.

**Use Hard and Soft Technological Applications:** Analyze, interpret, respond to, and be able to use current technologies (e.g., GPS, GIS, statistical packages, environmental and social assessment techniques, and word processing software) in creating, managing, and delivering conservation programs.

**Use Ecological Principles to solve problems:** Use sound ecological skills and processes to productively address conservation problems and deliver results.

3. **Briefly describe how the institution will ensure the quality of the program** (i.e., program review). Will the program require specialized accreditation (it is not necessary to address regional accreditation)? If so, please identify the agency and explain why you do or do not plan to seek accreditation.  

   *This question is not applicable to requests for discontinuance.*

   All current departmental and college quality control mechanisms will remain in place. No specialized accreditation system exists for such programs.

4. **List new courses that will be added to curriculum specific for this program.** Indicate number, title, and credit hour value for each course. Please include course descriptions for new and/or changes to courses.  

   *Attach a Scope and Sequence, SDPTE Form Attachment B, for professional-technical education requests. This question is not applicable to requests for discontinuance.*

   No new courses are proposed. All courses in the current RRT degree program will be included in the Conservation Planning and Management option. Requirements for the Conservation Science option will be drawn from existing CSS, CNR, and University of Idaho courses and approved by the standard university curriculum review process.

5. **Please provide the program completion requirements and attach to this proposal as Appendix A. This question is not applicable to requests for discontinuance.**

   No changes in credit hour requirements are proposed. See attached “Degree Requirements”

   | Credit hours required in major: | 38 |
   | Credit hours required in minor: | |
   | Credit hours in institutional general education or core curriculum: | 38 |
   | Credit hours in required electives: | 44 |
   | **Total credit hours required for completion:** | **120** |

6. **Identify similar programs offered within Idaho or in the region by other colleges/universities.** If the proposed request is similar to another state program, provide a rationale for the duplication. Institutions do not need to complete this section for PTE programs. This question is not applicable to requests for discontinuance.

   **Degrees/Certificates offered by school/college or program(s) within disciplinary area under review**

<table>
<thead>
<tr>
<th>Institution and Level</th>
<th>Specializations within the discipline</th>
<th>Specializations offered within the degree at the institution</th>
</tr>
</thead>
</table>

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The proposed change will allow for better differentiation between the current RRT degree and the Recreation degree offered in the College of Education, Department of Movement Studies.

7. Describe the methodology for determining enrollment projections. If a survey of student interest was conducted, attach a copy of the survey instrument with a summary of results as Appendix B. This question is not applicable to requests for discontinuance.

A survey of peer programs was completed in the spring of 2012, which revealed: Colorado State Univ. has 183 majors in Natural Resources Management; University of Montana has 102 majors in Resource Conservation; and Oregon State Univ. has 365 majors in Natural Resources and the Environment. Attached in Appendix B is a report from a national study of “Undergraduate Enrollment Trends in Natural Resources at NAUFRP Institutions: An Update.”

8. Enrollment and Graduates. Provide a realistic estimate of enrollment at the time of program implementation and over three year period based on availability of students meeting the criteria referenced above. Include part-time and full-time (i.e., number of majors or other relevant data) by institution for the proposed program, last three years beginning with the current year and the previous two years. Also, indicate the number of graduates and graduation rates.

<table>
<thead>
<tr>
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</thead>
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<tr>
<td>Full-time</td>
<td>42</td>
<td>49</td>
<td>65</td>
<td>85</td>
<td>105</td>
</tr>
<tr>
<td>Part-time</td>
<td>3</td>
<td>6</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
</tbody>
</table>

Discontinuations. Using the chart below include part-time and full-time (i.e., number of majors or other relevant data) by institution for the proposed discontinuation, last three years beginning with the current year and previous two years. Indicate how many students are currently enrolled in the program for the previous two years to include number of graduates and graduation rates. NA

<table>
<thead>
<tr>
<th>Institution</th>
<th>Relevant Enrollment Data</th>
<th>Number of Graduates</th>
<th>Graduate Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current Fall 2011-12</td>
<td>Year 1 Previous Fall 2010-09</td>
<td>Current Spring 2012</td>
</tr>
<tr>
<td>BSU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSI</td>
<td></td>
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<td></td>
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<td>CWI</td>
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<td>EITC</td>
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<td></td>
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<tr>
<td>ISU</td>
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</tr>
</tbody>
</table>
FT= Full time enrollment; PT= Part time enrollment

*The graduation rate has been provided by the UI Institutional Research Office. It is calculated using the 2005-06 cohort which began in fall of 2005. This is the most recent six year graduation rate.

9. **Will this program reduce enrollments in other programs at your institution?** If so, please explain.

While the degree name change may attract some current students in other College of Natural Resource Degree programs (i.e. Fish and Wildlife, Forest Resources, Ecology and Conservation Biology, etc.) our main focus is on attracting new resident and non-resident students.

10. **Provide verification of state workforce needs such as job titles requiring this degree.** Include State and National Department of Labor research on employment potential. *This question is not applicable to requests for discontinuance.*

Using the chart below, indicate the total projected job openings (including growth and replacement demands in your regional area, the state, and nation. Job openings should represent positions which require graduation from a program such as the one proposed. Data should be derived from a source that can be validated and must be no more than two years old. *This question is not applicable to requests for discontinuance.*

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>State</td>
<td>27,000</td>
<td>27,270</td>
<td>27,542</td>
<td>27,821</td>
</tr>
<tr>
<td>Nation</td>
<td>550,000</td>
<td>605,000</td>
<td>665,500</td>
<td>732,050</td>
</tr>
</tbody>
</table>

a. Describe the methodology used to determine the projected job openings. If a survey of employment needs was used, please attach a copy of the survey instrument with a summary of results as Appendix C.

State workforce employment was estimated from the Idaho Department of Labor Statistics (http://www2.labor.idaho.gov/workforceglance/LongTermIndustries). Since no category exists for this field, estimates were developed from a portion of employment in several sectors: Forestry and Logging Fishing/Hunting, Support Activities for Agriculture and Forestry, Scenic and Sightseeing, Transportation Support Activities for Transportation, Performing Arts, Spectator Sports, and Related Industries Museums, Historical Sites, and Similar Amusement, Gambling, and Recreation Industries, Federal Government Employment State Government, Excluding Education and Hospitals Local Government, Excluding Education and Hospitals.

National workforce employment was estimated from the Idaho Department of Labor Statistics (http://www.bls.gov/ooh/life-physical-and-social-science/conservation-scientists.htm). Since no category exists for this field, estimates were developed from a portion of employment in several sectors: Recreation Workers, Conservation Scientists and Foresters, Agricultural and Food Scientists, Environmental Science and Protection Technicians, Forest and Conservation Technician, Forest and Conservation Workers.

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Sector trends varied widely, with Recreation Workers increasing at a rate of nearly 2% annually, and other natural resource field staying flat or decreasing slightly. Therefore an annual rate of 1% was used to estimate employment growth.

b. Describe how the proposed change will act to stimulate the state economy by advancing the field, providing research results, etc.

This name change will have a minimal effect on the state economy, except in that we expect enrollment to double over the next 3 years, and more state workers will be recruited from these graduates as opposed to out-of-state institutions.

c. Is the program primarily intended to meet needs other than employment needs, if so, please provide a brief rationale.

As stated above, the objective of this modification to the current B.S. degree program is to better prepare undergraduate students for 21st century careers in the human dimensions of natural resource conservation and management.

11. Will any type of distance education technology be utilized in the delivery of the program on your main campus or to remote sites? Please describe. This question is not applicable to requests for discontinuance.

Not at this time, but the department will explore distance education opportunities for some of the undergraduate courses now offered in Moscow. Currently four graduate courses are offered on-line.

12. Describe how this request is consistent with the State Board of Education's strategic plan and institution’s role and mission. This question is not applicable to requests for discontinuance.

This degree program already is in operation, and no major changes beyond the name change are planned. Human dimensions of natural resources conservation and management fall under UI’s statewide mandate. UI serves a critical role in addressing, How do Idaho citizens and institutions manage their relationship with the state’s tremendous wealth of ecological resources?

13. Describe how this request fits with the institution’s vision and/or strategic plan. This question is not applicable to requests for discontinuance.

<table>
<thead>
<tr>
<th>Goals of Institution Strategic Mission</th>
<th>Proposed Program Plans to Achieve the Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1: Teaching and Learning: Enable student success in a rapidly changing world.</td>
<td>No change, degree title change will better communicate the profession to prospective students.</td>
</tr>
</tbody>
</table>
14. **Is the proposed program in your institution’s Five-Year plan? Indicate below.** This question is not applicable to requests for discontinuance.

Yes X No _____

This program is in the University of Idaho’s Five-Year Plan of Proposed Programs approved by the SBOE. It is a component of a long-established degree program in the College of Natural Resources.

If not on your institution’s Five-Year plan, provide a justification for adding the program.

15. **Explain how students are going to learn about this program and where students are going to be recruited from (i.e., within institution, out-of-state, internationally).** For request to discontinue program, how will continuing students be advised of impending changes and consulted about options or alternatives for attaining their educational goals?

The College of Natural Resources has created a Student Service Center (SSC) with four staff members (Associate Dean, Center Director, 2 recruiter/advisor staff) charged with increasing undergraduate enrollment and retention. In the first year of operation, the SSC was instrumental in increasing college enrollment by 10%, compared to -2% for the institution overall. This was accomplished through intensive recruiting efforts with Idaho high schools and community colleges nation-wide. We also improved our web presence and use of social media.

The SSC and CSS Department have jointly been charged with the goal of doubling enrollment in the undergraduate program within 3 years. We believe that this rebranding of the program and marketing it to prospective students and their families will be highly effective.

16. **Program Resource Requirements.** Using the **Excel spreadsheet** provided by the Office of the State Board of Education, provide a realistic estimate of costs needed for the overall program. This should only include the additional costs that will be incurred and not current costs. Include both the reallocation of existing resources and anticipated or requested new resources. Second and third year estimates should be in constant dollars. If the program is contract related, explain the fiscal sources and the year-to-year commitment from the contracting agency(ies) or party(ies). Provide an explanation of the fiscal impact of the proposed discontinuance to include impacts to faculty (i.e., salary savings, re-assignments).

No additional resources are requested. This is a degree title change and all resources will remain the same. Tuition revenues on attached spreadsheet reflect revenues from new enrollment resulting from rebranding efforts.
**Program Resource Requirements.** Provide a realistic estimate of costs needed for the overall program. This should only include the additional costs that will be incurred and not current costs. Include both the reallocation of existing resources and anticipated or requested new resources. Second and third year estimates should be in constant dollars. If the program is contract related, explain the fiscal sources and the year-to-year commitment from the contracting agency(ies) or party(ies). Provide an explanation of the fiscal impact of the proposed discontinuance to include impacts to faculty (i.e., salary savings, re-assignments).

### A. REVENUE

<table>
<thead>
<tr>
<th></th>
<th>FY 2013</th>
<th>One-time</th>
<th>FY 2014</th>
<th>One-time</th>
<th>FY 2014</th>
<th>One-time</th>
<th>FY 2014</th>
<th>One-time</th>
<th>Cumulative Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Appropriated (Reallocation)</td>
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<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>2. Appropriated (New)</td>
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<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
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<tr>
<td>3. Federal</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
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<tr>
<td>4. Tuition</td>
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<td>$0.00</td>
<td>$182,696.00</td>
<td>$0.00</td>
<td>$252,120.00</td>
<td>$0.00</td>
<td>$434,816.00</td>
<td>$0.00</td>
<td>$434,816.00</td>
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<tr>
<td>5. Student Fees</td>
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<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>6. Other (Specify)</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
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<td>$0.00</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td>$0.00</td>
<td>$0.00</td>
<td>$182,696.00</td>
<td>$0.00</td>
<td>$252,120.00</td>
<td>$0.00</td>
<td>$434,816.00</td>
<td>$0.00</td>
<td>$434,816.00</td>
</tr>
</tbody>
</table>

*note: tuition revenues reflect estimated enrollment increases (not current enrollment revenues) with 50% being resident and 50% non-resident students.

### B. EXPENDITURES

<table>
<thead>
<tr>
<th></th>
<th>FY 2013</th>
<th>One-time</th>
<th>FY 2014</th>
<th>One-time</th>
<th>FY 2014</th>
<th>One-time</th>
<th>Cumulative Total</th>
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<tbody>
<tr>
<td>1. Personnel</td>
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<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
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<tr>
<td>2. Operating</td>
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<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
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<tr>
<td>3. Equipment</td>
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<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
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<tr>
<td>4. Facilities</td>
<td>0</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
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<tr>
<td>5. Other (Specify)</td>
<td>0</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
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<tr>
<td><strong>Total Expenditures</strong></td>
<td>$0.00</td>
<td>$0.00</td>
<td>$182,696.00</td>
<td>$0.00</td>
<td>$252,120.00</td>
<td>$0.00</td>
<td>$434,816.00</td>
</tr>
<tr>
<td><strong>Net Income (Deficit)</strong></td>
<td>$0.00</td>
<td>$0.00</td>
<td>$182,696.00</td>
<td>$0.00</td>
<td>$252,120.00</td>
<td>$0.00</td>
<td>$434,816.00</td>
</tr>
</tbody>
</table>

Ongoing is defined as ongoing operating budget for the program which will become part of the base.
One-time is defined as one-time funding in a fiscal year and not part of the base.
APPENDIX A

College of Natural Resources
Department of Conservation Social Sciences

B.S. in **NATURAL RESOURCE CONSERVATION**

With 2 Emphasis Areas:
1. **CONSERVATION PLANNING AND MANAGEMENT** (A revision of the current CSS-RRT major)
2. **CONSERVATION SCIENCE** (A new CNR “generalist” emphasis)
Resource Recreation & Tourism (B.S. Res.Rc.) Natural Resource Conservation (B.S. NRC)

Students must select any academic minor (including those in the Department of Conservation Social Sciences) and attend one, two-week long field studies course during summer session. Special fees are required for this and a few other courses. To graduate a student must earn an average GPA of 2.30 or higher in all CSS courses.

Required Course work includes the university requirements (see regulation J-3) and:

CSS 235 Society and Natural Resources (3 cr)
CSS 287 Foundations of Conservation Leadership and Management (taken simultaneously with NR 101) (3 cr)
CSS 383 Natural Resource and Ecosystem Service Economics (3 cr)
CSS 387 Environmental Communication Skills (3 cr)
Econ 202 Principles of Economics (3 cr)
Eng 102 College writing and Rhetoric (3 cr)
For 221 Ecology or REM 221 Ecology (3 cr)
For 375 Introduction to Spatial Analysis for Natural Resource Management (3 cr)
Math 143 Pre-calculus Algebra and Analytic Geometry or Math 160 Survey of Calculus or Math 170 Survey of Calculus II (3-4 cr)
NR 101 Exploring Natural Resources (taken simultaneously with CSS 287) (1 cr)
Stat 251 Statistical Methods (3 cr)
ISEM, Integrated Seminar (3 cr)
Approved Humanities (6 cr)
Approved UI international class or a 200+ foreign language class (3 cr)

One writing course, such as Engl 207, Engl 208, Engl 313, Engl 316, Engl 317 (3 cr)

Students must select one of the following 2 Emphasis Areas:

EMPHASIS IN CONSERVATION PLANNING AND MANAGEMENT

Students must select any academic minor (including those in the Department of Conservation Social Sciences) and attend one, two-week long field studies course during summer session. Special fees are required for this and a few other courses. To graduate a student must earn an average GPA of 2.30 or higher in all NRC courses.

Biol 102, 102L Biology and Society and Lab OR Biol 115 Cells and the Evolution of Life (4 cr)
Comm 101 Fundamentals of Public Speaking OR one semester of a foreign language (2-4 cr)
CSS 304 Conservation Social Sciences Field Studies (3 cr)
CSS 310 Social Research Methods in Conservation (4 cr)
CSS 385 Conservation Management and Planning I (4 cr)
*CSS 386 (4XX) Conservation Management and Planning II (4 cr)—Renumber as Senior Experience
CSS 486 Public Involvement in Natural Resource Management (3 cr)
CSS 489 Personalities and Philosophies in Conservation (3 cr)
One of the following (3 cr):
  PolS 101 Intro to Political Science and American Government OR PolS 275 American State and Local Government

One of the following (4 cr):
  Chem 101 Introduction to Chem I OR Chem 111 Principles of Chem I OR Geol 101, 101L Physical Geology and Lab

One of the following (2-3 cr):
  CSS 364 Politics of the Environment (3 cr)
  CSS 462 Natural Resource Policy (3 cr)
  For 484 Forest Policy and Administration (2 cr)

One of the following (3 cr):
  For 426 Fire Ecology and Management (3 cr)
  REM 440 Wildland Restoration Ecology (3 cr)
  REM 459 Rangeland Ecology (2 cr) AND REM 460 Rangeland Ecology Current Topics and Field Studies (1 cr)
  WLF 314 Wildlife Ecology I (3 cr)

Two of the following (6 cr):
  CSS 490 Wilderness and Protected Area Management (3 cr)
  CSS 493 International Land Preservation and Conservation Systems (3 cr)
  For 429 Landscape Ecology (2 cr)
  Larch 480 The Emerging Landscape (3 cr)
  WLF 440 Conservation Biology

Two of the following (6 cr):
  Anth 100 Introduction to Anthropology (3 cr)
  Psyc 101 Introduction to Psychology (3 cr)
  Soc 101 Introduction to Sociology (3 cr)

14-15-12 credits (if not chosen above) from the following, in at least 2 disciplines with at least 2 courses in one discipline:
  AgEc 477 Law, Ethics, and the Environment (3 cr)
  Anth 329 North American Indians (3 cr)
  Anth 410 Research Methods in Anthropology (3 cr)
  Anth 428 Social and Political Organization (3 cr)
  Anth 462 Human Issues in International Development (3 cr)
  BUS 321 Marketing (3 cr)
  Comm 335 Intercultural Communication (3 cr)
  Comm 410 Conflict Management (3 cr)
  Comm 433 Organizational Communication Theory, Research, and Application (3 cr)
  CSS 364 Politics of the Environment (3 cr)
  CSS 462 Natural Resource Policy (3 cr)
  CSS 481 Conservation Leadership (3 cr)
  CSS 487 Environmental Education (3 cr)
  CSS 490 Wilderness and Protected Area Management (3 cr)
Courses to total 120 credits for this Degree & Emphasis
EMPHASIS IN CONSERVATION SCIENCE

To graduate a student must earn an average GPA of 2.00 or higher in all courses taught in CNR and complete an approved professional work experience in natural resources.

Biol 115 Cells and the Evolution of Life OR Biol 116 Organisms and Environments (4 cr)
Senior Experience (3-4 cr)
CSS 364 Politics of the Environment (3 cr) OR CSS 462 Natural Resource Policy (3 cr)
CSS 385 Conservation Management and Planning I (4 cr) OR CSS 490 Wilderness and Protected Area Management (3 cr)
One of the following (4 cr):
Chem 101 Introduction to Chem I (4 cr) OR Chem 111 Principles of Chem (4 cr)

Restricted Electives: Natural Resource Science: 33 credits (at least 15 must be at the 400 level)

6 credits Fishery Science from among:
Fish 314 Fish Ecology (3 cr)
Fish 315 Fish Ecology Lab (1 cr)
Fish 316 Principles of Population Dynamics (2 cr)
Fish 415 Limnology (4 cr)
*Fish 418 Fisheries Management (4 cr)
Fish 422 Concepts in Aquaculture (3 cr)
Fish 424 Fish Health Management (4 cr)
Fish 430 Riparian Ecology and Management (3 cr)

3 credits in Fire Ecology and Management from among:
For 426 Fire Ecology and Management (3 cr)
For 433 Science-Based Fuels Management Planning (2 cr)
For 450 Fire Behavior (3 cr)
For 454 Air Quality and Smoke Management (3 cr).

6 credits in Forestry from among:
For 320 Dendrology (4 cr)
For 324 Forest Regeneration (3 cr)
For 330 Forest Ecosystem Processes (3 cr)
For 373 Forest Sampling Methods (2 cr)
*For 424 Forest Dynamics and Management (4 cr)
For 425 Forest and Soil Nutrient Cycling (3 cr)
For 462 Watershed Science and Management (3 cr)
For 468 Forest and Plant Pathology (2 cr)
For 472 Remote Sensing of the Environment (4 cr)
ForP 430 Forest Engineering and Harvesting (3 cr)
ForP 432 Designing Forest Access (3 cr)
ForP 434 Forest Tractor and Cable Systems (4 cr)

* Senior Experience course
6 credits in **Renewable Materials** from among:

- ForP 321 Renewable Materials Anatomy and Properties (3 cr)
- ForP 365 Wood Building Technology (3 cr)
- ForP 436 Biocomposites (3 cr)
- ForP 438 Introduction to Lignocellulosic Chemistry (1 cr)
- ForP 444 Primary Wood Products Manufacturing (3 cr)
- ForP 450 Biomaterials Deterioration and Protection (2 cr)
- ForP 491 Biomaterial Product and Process Development Lab (2 cr)
*ForP 495 Product Development and Brand Management (3 cr)*

6 credits in **Rangeland Ecology and Management** from among:

- REM 341 Systematic Botany (3 cr)
- REM 357 Ecological Monitoring and Analysis (4 cr)
- REM 410 Principles of Vegetation Measurement and Assessment (2 cr)
- REM 440 Wildland Restoration Ecology (3 cr)
- REM 452 Western Wildland Landscapes (2 cr)
*REM 456 Integrated Rangeland Management (3 cr)*
- REM 459 Rangeland Ecology (2 cr)
- REM 460 Rangeland Ecology Current Topics and Field Studies (1 cr)
- REM 472 Remote Sensing of the Environment (3-4 cr)

6 credits in **Wildlife Science** from among:

- WLF 314 Wildlife Ecology I (3 cr)
- WLF 315 Wildlife Ecology I Laboratory (1 cr)
- WLF 316 Wildlife Ecology II (4 cr)
- WLF 440 Conservation Biology (3 cr)
- WLF 448 Fish and Wildlife Population Ecology (4 cr)
- WLF 482 Ornithology (4 cr)
*WLF 492 Wildlife Management (4 cr)*

Courses to total 120 credits for this Degree & Emphasis
26 September 2012

Dr. Shafii Bahman, Chair,
University Curriculum Committee
University of Idaho

Professor Bahman,

On behalf of the College of Education, I am pleased to offer this letter in support of the College of Natural Resources’ proposal to rename the degree in Resource, Recreation, and Tourism to Natural Resources Conservation—with emphasis areas in Conservation Management and Planning and Conservation Science. The proposed changes align directly with the President’s efforts to promote opportunities for students to have degree flexibility and to increase student enrollment by targeting areas of potential growth. Similar general conservation programs at some of our peer institutions have proved especially popular—Oregon State, for example, has near 400 students in its program, while the University of Montana now has over 100. Moreover, the College of Natural Resources is the only college of its type that does not offer a conservation-themed degree.

Programs like the one proposed are increasingly in demand with prospective employers. Research conducted by CNR as it developed the proposed changes suggests employers are seeking generally trained natural resource managers prepared to deal with the challenge of an evolving natural and human landscape.

The College of Education has a long-standing relationship with the College of Natural Resources. The proposed degree, which will be comprised of courses offered by the College (with the exception of the University core), will have a limited effect on our recreation program. It has, rather, the potential to support the College of Education by strengthening greatly the Conservation Social Science department, which offers a number of courses taken by our own students. In fact, faculty members of both colleges have discussed how to collaborate without duplication of effort and these discussions are a part of the CSS proposal. CSS also serves a vital role in providing a critical source of social science research, public policy, and planning and management expertise in Idaho, supporting the U-Idaho land-grant mission.

Finally, it is important to note the University of Idaho has a SBOE appointed core mission in the areas of natural resources and conservation—something that is largely the responsibility of the College of Natural Resources.
Enhancing the College's ability to carry out this mission will have sizeable long-term benefits as the University seeks to serve its statewide land grant mission.

Sincerely,

[Signature]

Corinne Mantle-Bromley
Dean
September 20, 2012

Dr. Shaffii Bahman, Chair
University Curriculum Committee
University of Idaho

Dear Professor Bahman,

I am writing in support of the College of Natural Resources’ proposal to rename the degree in Resource, Recreation, and Tourism to “Natural Resources Conservation—with emphasis areas in Conservation Management and Planning and Conservation Science”. The proposed changes align well with the President’s efforts to promote opportunities for students to have degree flexibility and to increase student enrollment by targeting areas of potential growth.

Programs like the one proposed are increasingly in demand with prospective employers, as researched by CNR, who are seeking generally trained natural resource managers prepared to deal with the challenge of an evolving ecological and human landscape.

The proposed degree, which will be comprised of courses almost completely offered by the College (and with the exception of the University core), will have a limited effect on the EnvS program. The proposed changes also have the potential to offer courses to EnvS students by strengthening the CSS department.

Finally, it is important to note the University of Idaho has a SBOE appointed core mission in the areas of natural resources and conservation—something that is largely the responsibility of the College of Natural Resources. Enhancing the College’s ability to carry out this mission will have sizeable long-term benefits as the University seeks to serve its statewide land grant mission.

Sincerely,

Jan Boll, Ph.D.
Director, Environmental Science, Water Resources & PSM Programs
Professor, Biological and Agricultural Engineering
UNDERGRADUATE ENROLLMENT TRENDS IN NATURAL RESOURCES AT NAUFRP INSTITUTIONS: AN UPDATE

Terry L. Sharik

Robert J. Lilieholm

8th Biennial Conference on University Education in Natural Resources
Blacksburg, VA, March 26, 2010
Undergraduate Enrollments in Natural Resources by Region for NAUFRP Institutions, 1980-2009

- Similar trends across all regions
- Peaks in early 1980s & mid 1990s
- Increasing since 2003-2004
- Overall decrease of 13% since 1980
“Natural Resources & Environment” eclipsing more traditional programs
Undergraduate Enrollments in Low-enrollment Fields, NAUFRP Institutions, 1980-2009

Undergraduate enrollments in natural resources by field of study for those fields with relatively low enrollments, NAUFRP institutions, 1980-2009.
Proportion of Undergraduate Enrollments by Field of Study

Degree Classifications

- **Forestry** (forestry, forest science, forest ecosystem science, forest resources, forest management, urban forestry, forest engineering/operations)
- **Wood Science/Products** (wood science, wood products, wood technology, forest products, paper science)
- **Fisheries & Wildlife**
- **Recreation** (recreation, tourism, parks, interpretation, communications)
- **Watershed Science/Management** (watershed science, watershed management, hydrology)
- **Range Science/Management** (range science, range management, rangeland resources)
- **Natural Resources/Environmental Management** (natural resources management; planning, policy, and economics; environmental management and science; environmental conservation; environmental studies; conservation management; conservation biology; restoration ecology/management; applied ecology; geography)
- **Soils & Geology**
- **Other** (landscape architecture, GIS, land surveying, spatial science, biotechnology, etc.)
- **Undeclared**
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Factors affecting Overall Trends in Natural Resource Enrollments

- Complex (multivariate)
- Trends differ from overall higher ed enrollments (which tract college age population)
Gender and Enrollment

U.S. enrollment, male and female
Total U.S. college age population male and female (age 20-24)

- Undergraduate fall enrollment
- U.S. college age population

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1 U.S. Department of Education 2010, 2 U.S. Department of Education 2010
Enrollment trends may be associated with larger trends in the economy...
### Possible Reasons for 1995-2003 Decline in Natural Resource Enrollments

1. **Weak & uncertain job market**
2. **Low salaries compared to other professions**
3. Increasing “disconnect” between natural resources & an urbanizing society (especially among young adults)
4. Tendency of minorities to avoid academic programs perceived as tangential to important issues affecting their communities
5. **Negative public perceptions of forestry & related natural resource professions**
6. Perception of curricula being too narrow & rigid
7. **Increased “science phobia” on the part of students**
8. Increasing number of similar degree programs outside colleges of forestry & natural resources
9. Relatively long period beyond a B.S. degree needed to obtain a terminal professional degree
10. Lack of intellectual leadership & charisma nationally in forestry & related natural resources areas
11. **Limited public awareness regarding social benefits of forestry & related natural resource professions**

Surveys of undergraduate forestry students lend some support for hypotheses 1, 2, 5, 7 & 11 (Sharik & Frisk 2008, 2010).
Reasons for Especially Sharp Declines in Forestry Enrollments

- Diversification of degree offerings in Natural Resources Colleges due to:
  - Changing public values towards forests (shift from utilitarian/economic view, to a broader array of ecosystem values) (Xu & Bengston 1991, MEA 2005)
  - Association of forestry with the utilitarian/economic perspective (Wellman 1987, Luckert 2006, Sharik & Frisk 2008 and 2010)
  - Inflexible curricula bound by accreditation standards compared to other natural resource fields
  - Declining harvest levels on National Forests – a resource typically managed by foresters
Forestry Enrollments & Logging Employment

Relativized NAUFPRP forestry undergraduate fall enrollments, average annual logging employment, 1980-2009

Conclusions

- Enrollments have varied significantly across time, but overall have decreased since 1980
- Trends experienced across all U.S. regions
- Reasons for changes in NR enrollments over time are complex, likely involving a number of demographic, economic & social factors
- NAUFRP institutions and public & private sector employers need a better understanding of the factors affecting:
  - Undergraduate & graduate enrollments
  - Job & career opportunities, both now and over the long-term
References Cited

Acknowledgements

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