

Environment and Natural Resources

Academic Plan -
2009-2014

The Program in Environment and Natural Resources (ENR) at the University Wyoming (UW) represents three entities that together meet the mission of a land grant university through education of undergraduates, graduates, and the citizenry; through the generation of new knowledge, and through active and participatory outreach and service. These entities are the Haub School of Environment and Natural Resources, the Ruckelshaus Institute of Environment and Natural Resources, and the Wyoming Conservation Corps. These are joined by a common vision that is enabled through separately organized structures to maximize our ability to reach a large and diverse audience. Our programs have reached students from all colleges throughout the university, Wyoming citizens, government officials, and members of non-government organizations and industry.

Section 1: ENR Vision and Aspirations

The most important issues facing society today surround whether and how the environment can support the needs of humanity in a sustainable way. Such sustainable resource use is dependent upon a citizenry that has the knowledge, critical thinking skills, and tools for making good decisions. ENR advances knowledge of complex environmental and natural resources issues, promotes understanding by students and citizens of these issues, and assists with effective decision-making on environmental and natural resource issues through research, policy analysis, education, process support and proactive outreach.

ENR accomplishes its mission by partnering and coordinating with UW faculty and students, and with members of government, business and industry, non-governmental organizations, communities, elected officials and other citizens. We enhance the position of UW by applying the strengths of the faculty, students, the Ruckelshaus Institute Board, and other interested parties to address complex environmental and natural resource issues.

Section II. Previous Planning Accomplishments

2004-2009 Accomplishments	
Task	Status
Program evaluation. Formally evaluate all ENR courses and programs to determine if they are meeting learning and program goals.	Completed. The Faculty Advisory Committee continues to evaluate the curriculum and its alignment with assessment goals. Adjustments were made in the curriculum, particularly to emphasize human dimensions of ENR issues.
Professional development. Determine the interests and needs of ENR professionals for an expanded professional development program.	Completed. There is significant interest in a mid-career certificate program. Currently we offer skills based on adaptive-collaborative process courses for professionals and on-campus students.
Expanded degree options. Work with the Haub School Faculty Advisory Committee and the Ruckelshaus Institute School Advisory Committee to determine the need for and the feasibility of additional interdisciplinary ENR graduate degree programs.	Completed. The JD/MA was approved by the Board of Trustees and is in place. We continue to assess the feasibility of further interdisciplinary degrees to combine with ENR (see this Academic Plan).
Assessment. Follow the 2003-2009 assessment timeline to establish a formal process for iterative program assessment and	A formal assessment plan is in place and used by the Faculty Advisory Committee for program

modification.	evaluation.
<i>Increase faculty involvement in Ruckelshaus Institute research and outreach projects.</i> Improve integration of UW faculty and students with Ruckelshaus Institute Board and staff through cooperation on interdisciplinary research and outreach, greater inclusion of UW faculty and students in Ruckelshaus Institute Board activities, and development of relationships with a greater diversity and number of ENR-oriented faculty at UW.	Based on the model of the Open Space Advisory Committee, two other subcommittees were created in the areas of water and energy. These subcommittees include members of the Ruckelshaus Institute Board and UW faculty and incorporate research assistance from graduate students when possible.
<i>Marketing ENR.</i> In conjunction with the ENR Faculty Advisory Committee and the ENR Board, we will develop a detailed marketing plan by December 2004.	Ongoing. ENR has produced newsletters, news releases and brochures and other written materials in an effort to be proactive in communicating issues related to the environment.
<i>Increase teaching commitments.</i> Increase teaching commitments from UW faculty and off-campus professionals to lead and mentor in ENR core courses.	Through faculty assignment agreements, six new faculty hires from five departments include a commitment to teaching ENR. We filled the Cline Chair in Engineering and Environment and Natural Resources and are now searching to fill the Spicer Chair in Collaborative Natural Resource Decision-Making.
<i>Increase graduate research assistantships.</i> Work with ENR faculty and the Institute Board to pursue and win extramural funding for an interdisciplinary ENR graduate training grant and include funding for graduate research assistantships in appropriate Institute projects.	Through support from a Department of Energy grant, we supported 14 graduate students from five programs. The Haub Endowment is also used to augment GA support from the Graduate School, allowing us to support one more GA per year to assist with ENR classes.
<i>Diversity.</i> Collaborate with International Programs to provide academic homes for more international students and faculty visiting UW under the Freedom Support Act, with a goal of creating an ENR student body of at least 15% international students. Through academic advising and advertising we will also strive to double the number of ENR students who study abroad.	Ten-percent of ENR students double majored in International Studies (compared with 1% in 2005) and an even greater percentage study abroad during their academic program. Completed a curriculum internationalization grant through International Programs. Developed an international internship program for ENR students and have substantially increased ENR student study abroad.
<i>Increase student enrollments.</i> Increase ENR major and minor enrollments.	Student enrollments have grown 71% since 2005 and we now have 130 students with a declared major or minor in ENR.
<i>Interdisciplinary partnerships.</i> Partner with on-campus and off-campus interdisciplinary programs through administrative assistance, teaching, research and outreach.	We have worked closely with SER to develop new energy and environment-related curricula (e.g., Applied Environmental Law and Energy Futures).

Section III. Relevant Institutional Issues

ENR has been the flagship interdisciplinary education and outreach program for UW over the past 15 years. Our past successes and potential for future excellence link closely with UW's institutional goals.

1. With respect to **Motif 1: Building depth versus adding breadth**, ENR has allowed students from across the university to add environmental and natural resource studies to their own disciplinary specialty. Students who participate in ENR interact with students from many disciplines in our courses and their capstone experiences.
2. Environment and natural resources has been identified as a key area for **Motif 2: Reinforcing and refining areas of distinction**. We see many ways in which ENR can be strengthened to continue its prominence throughout the university through increased participation of faculty from diverse backgrounds, and through training Wyoming students to be professionals in the diverse array of careers that influence the environment.
3. Because of the structure of ENR as a second major or minor, ENR has primarily served the select group of students with a strong interest in the environment. Given the importance of environment to all citizens today, we see a critical need as well as a great opportunity to address **Motif 3: Promoting access to higher education**, through courses that reach non-majors, students throughout the state in community colleges and K-12 teachers as part of our overall environmental literacy effort and emphasis.
4. The environmental issues facing Wyoming are case studies for the major natural resource sustainability issues around the globe. ENR is ideally placed to motivate, foster and support interdisciplinary research programs throughout the university that address interdisciplinary, cross-college environmental issues that relate to **Motif 4: Fostering excellence**.
5. Finally, with respect to **Motif 5: Cultivating leadership**. Each of the three units of the ENR Program cultivates leadership in varied constituencies. The interdisciplinary nature of the Haub School curriculum and statewide service conducted by the Wyoming Conservation Corps cultivate leadership in university students across campus. The Ruckelshaus Institute, along with its unique advisory Board comprising state, regional and national environmental and natural resource leaders from industry, environmental organizations, education and government, provides information and collaborative process expertise to help leaders make decisions.

Throughout this document, we combine the roles of the Haub School, the Ruckelshaus Institute, and the Wyoming Conservation Corps, as we see education, research, and outreach becoming more integrated.

Section IV. Action Items.

1. Enhance environmental literacy throughout the university and the state.

Our goal is to provide the opportunity for every student on campus, and every college student in the state, to learn to think critically about environmental issues. We plan to explore three levels of enhanced environmental literacy:

- a) The development of an introductory course that can be delivered to non-ENR-major freshmen to meet their USP science core curriculum requirement. These courses may also meet specific curricular requirements, such as those proposed by the new energy and environment degrees.
- b) Delivery of beginning courses in modularized forms to either community college professors and/or through distance courses that can either stand alone or be transferred seamlessly into UW curricula.
- c) Collaboration with the College of Education to develop an environmental literacy component for pre-service K-12 teachers on campus, as well as teachers across the state.

Such advances, combined with growing student enrollments, will require dedicated faculty resources, and a review of the ENR teaching force, as it relates to our relationships with departments campus-wide. We will assess a range of additional strategies, including tenurable positions within the Haub School, endowments to fund graduate assistantships, and endowments for additional shared faculty positions.

2. Link with and serve environmental interdisciplinary programs from across campus.

In recent years, a number of interdisciplinary programs have come on line with links to ENR. The Earth System Science program, Program in Ecology, School of Energy Resources (SER), International Affairs (proposed), and the Sustainable Business Institute are examples of programs that we should collaborate with wherever possible. Because many of these programs require ENR courses, strong collaboration will be necessary to ensure that adequate sections are offered and that the intellectual content of courses matches the needs of the degree programs.

- a) We plan to explore areas in which we can serve other interdisciplinary programs related to the environment across campus. We will explore areas of curricular overlap with other interdisciplinary programs to link where appropriate, seek to share resources such as faculty time or curricular offerings, and to identify opportunities for collaboration. Our academic advising is recognized throughout the university, and we would seek to share our expertise in supporting students as they develop interdisciplinary curricula.
- b) Successful support to other programs will require a reassessment of current and projected staffing needs and staff structure, particularly as interdisciplinary student enrollments continue to rise.
- c) We plan to work with the other interdisciplinary programs on campus to raise our visibility in the University of Wyoming General Bulletin and other printed and online media.

3. Increase and explore our emphasis on expanded graduate degree offerings.

Through a double major and minor, ENR adds value to existing degree programs, rather than competing with those programs for students. Many ENR-related academic programs at UW do not offer PhD programs, and relatively few PhD students complete a minor in ENR. Combined with student feedback requesting greater ENR degree options at the PhD level, we believe there is an unmet need for advanced degrees in ENR disciplines at UW. We propose to evaluate the desirability and the feasibility of graduate degree program administered by ENR.

- a) The Board of Trustees recently approved a new Juris Doctor / MA in Environment and Natural Resources joint degree program. This program has great potential for producing lawyers who are well-equipped to address myriad environmental issues. We plan to increase our advertisement and recruitment of this program for potential and current UW law students.
- b) Among the most popular environmental and natural resources masters programs in the country are those that prepare masters level professionals for interdisciplinary environmental management positions in state and federal agencies, NGOs, and consulting firms across the country. These are generally non-thesis programs, focused on cohorts of students. Such programs are offered by Duke University, Michigan State, UC Santa Barbara, and Yale University, but these programs are short on the science, policy, and management of western landscapes. UW is very well-positioned to offer a Master of Environmental Management degree. We plan to explore the possibilities for offering a Master's of Environmental Management both in a residence and in a distance format, though a series of strategic planning initiatives with interested faculty from across campus.
- c) We plan to explore increased opportunities for PhD students in ENR. For instance, students could pursue a PhD in ENR, with topical expertise provided by Geography, American Studies, Agricultural and Applied Economics, Ecology, or other programs.

4. Increase service learning of our students, engage students in active learning and research experiences.

The Wyoming Conservation Corps (WCC) has had two full years of success in placing students in service positions working to improve public lands in Wyoming. The program has cultivated excellent relationships with agency personnel, and there is growing demand for WCC crews. Recent developments place WCC within the ENR program for the long-term, and we plan to integrate the service learning experience into the Haub School curriculum. Further, we seek opportunities to integrate WCC experiences into environmental monitoring efforts supported by natural resource initiatives through the Ruckelshaus Institute.

5. Improved student diversity.

As student enrollments grow in ENR, the opportunity and responsibility to improve student diversity also grows. UW and ENR in particular, are well-positioned to attract American Indian students with interests in natural resource issues. We will develop a plan to improve ENR student diversity, including achievable goals and timelines.

6. Conduct a curricular re-assessment.

The undergraduate and graduate double majors have been in place for several years now and may require some revamping. We plan to address the effectiveness of distribution courses in providing an interdisciplinary perspective into ENR issues; determine if curricular tracts in sustainability or similar topical areas provide greater focus in the curriculum; and assess whether ENR core courses continue to build logically and sequentially on one another. To meet this goal, we will formally assess the ENR undergraduate and graduate curricula and modify the curricula as necessary. Specifically, we will use an external review committee, potentially impaneled by the Council of Environmental Deans and Directors, to assess the ENR program relative to comparable programs nationwide.

7. Launch proactive communications strategy for ENR program.

The ENR Communications Program is intended to help bridge the gap in information between members of academia, policymakers, stakeholders and the public. Our Communications Program includes a strategy with targeted written materials designed to convey to different audiences our efforts to integrate environmental research and learning while providing collaborative approaches to resolving natural resource challenges. The ENR Communications Program is intended to serve as a vehicle for ENR's long-term outreach and marketing efforts.

- a) The Communications Strategy will utilize both traditional tools and new campaign strategies to further our research, highlight our educational programs and services, and continue to inform the debate on natural resource issues.
- b) Within the Communication Program is a marketing plan (MarCom) that leverages calendar-driven opportunities to proactively deliver messages about the ENR program and its initiatives. The MarCom also includes managing press coverage, enhancing online communications, and mobilizing stakeholders to assist in our outreach endeavors.

8. Increase the impact of the Ruckelshaus Institute through expanded research and service in collaborative decision-making.

The Ruckelshaus Institute continues to facilitate interdisciplinary research, outreach, and service. A need for project funding and a desire to be relevant to Wyoming's ENR issues has led to a somewhat

opportunistic approach to project selection in the past. While we still seek to be regionally relevant and responsive, we also need to more strategically cultivate projects that support the Ruckelshaus Institute mission, provide long-term and significant funding, and involve greater numbers and diversity of UW faculty and students. We plan to:

- a) Deepen our relationship with the state as well as local and regional entities that generate a need for collaborative processes and natural resources information about science and values. During the next three years, we hope to play a leadership role in several new initiatives at the state level.
- b) Increase the Ruckelshaus Institute's funding base by seeking more foundation and agency support for long-term projects and general operations;
- c) Broaden research foci to national and international issues, in addition to remaining active on regional environment and natural resource issues.
- d) Expand research and outreach on issues related to land use, water, energy and climate. As with the Wyoming Open Spaces Initiative, which has become recognized in Wyoming as a trusted resource for information on open space and land use issues, we will seek funding to develop similar public education programs related to water, drought, climate, and environmental-related energy issues.
- e) Provide current, unbiased information to Wyoming's citizens, land managers and decision-makers as they work to balance environmental needs with development and use of the state's land, water and energy resources. Highlight in written and oral communications how the Haub School and WCC is preparing students for such challenges in the future.
- f) Utilize Communications Program to build wide public confidence in collaborative processes and the Ruckelshaus Institute as the entity that provides research and knowledge to decision-makers as well as convenes diverse stakeholder groups to work together on natural resource issues.
- g) Expand research and service in collaborative natural resource decision-making. The addition of the Spicer Chair in Environment and Natural Resources will bolster our collaborative process expertise to further support the Ruckelshaus Institute mission of providing process support to advance effective decision-making on environmental and natural resource issues.

9. Continue to strengthen the partnership with the School of Energy Resources in creating new opportunities for statewide and regional outreach on issues related to energy and the environment.

The Ruckelshaus Institute has successfully partnered with SER in convening meetings and symposia on topics related to energy and the environment, such as "Finding the Balance: Energy and Climate," and should continue to pursue cooperative outreach. As opportunities arise our collaboration with SER will include producing targeted written materials about our roles in balancing environmental solutions and economic needs.