

**Initiatives and resources in Environmental Studies for the purpose of strategic planning**  
**7-11-2007**

*UW-Eau Claire has the potential to establish both an institute and a strong undergraduate liberal arts curriculum in environmental studies and stewardship which would differ from any other program in the UW System. It could showcase our marks of excellence, complement and integrate current degree programs, and have the potential to not only serve our region but also the world through a variety of new ideas and initiatives resulting from Strategic Planning. It would be something specific, measurable, attainable, realistic and timely!*

**A. The following are talking points for SP groups resulting from our ad hoc Environmental Studies planning group. An ES Institute would support:**

**Group I Preparing Global Leaders**

- Local action in environmental issues (e.g. Half Moon Lake restoration) to serve as a training ground for global leadership. Problems affecting the environment are universal (e.g., climate change, habitat loss, energy use, over-consumption, invasive species) and are in need of solutions at all scales. This is relevant to all grads in all four Colleges.
- Building environmental literacy and a global consciousness for solving global problems. We already have a foundational strength in undergrad. Faculty-Student research
- Going global now – establishing environmental studies and/or research in foreign countries
- Semester-long, immersion courses (with multiple faculty) at remote sites (or even local) to cover all aspects of environmental problems using a multidisciplinary approach to regional environmental issues

**Group II Transforming Learning**

- Innovation in liberal education: restructuring GE around multidisciplinary, multiple instructor courses on environmental themes
- FYE-like experiences in “learning communities”: shared courses, experiences & housing (extend these to sophomore, junior years?)
- Experiential learning through faculty/student collaborative research/scholarship in environmental studies: including research, field work, internships
- (Partial) block scheduling – making multi-instructor, immersion, & field courses more feasible
- Topical capstone course – approaching a single issue from across disciplines
- ENVS course prefix (specific sections of courses taught by instructors with environmental emphases)
- A common space for and critical mass of those interested in the environment who don't fit within disciplinary boundaries
- Integration with A&S and other Colleges. For example, College of Business courses and internships would provide students training in sustainability and “green business”; demanding areas for the new graduate

**Group III Serving the Public Good**

- Town/gown interactions: involvement in community projects (e.g., Half Moon Lake restoration, urban growth planning, environmental health)
- Integration of A&S, Nursing, Education and Business into environmental institute: attraction of 2<sup>nd</sup> career students with environmental interests, e.g., ENPH, to UWEC and providing a home for interdisciplinary studies.

- Teaching courses that attract non-degree students from the community (e.g., First Fridays, Beaver Creek Reserve courses)
- Formation of an “expert pool” for community lectures, workshops etc. held by (e.g., Elks, Lions, Earth Day celebration, etc.)
- External advisory role of faculty for government, community, schools, businesses, etc.)
- Service learning opportunities for students to work with community-based environmental organizations
- Working with local primary and secondary school systems and educators to bring young students to campus.

#### Group IV Enhancing the Campus Community

- Advisory role of faculty for campus (e.g. green building, reduced carbon emission) initiatives (join the 4 other “carbon-neutral 2012” pilot campuses)
- Location and staffing for “clearinghouse” or “incubator” for development and coordination of interdisciplinary environmental initiatives
- Connecting faculty with rotating, joint appointments (several FTEs) within environmental institute to provide a home for faculty with environmental interests to develop new research & curricular initiatives
- Mechanism to attract/retain quality faculty with interests in environmental and sustainability issues
- Enhancement of funding opportunities by affiliation with environmental institute
- Generation of environmental seminar series from amongst current departmental seminars

#### Group V Effectively Managing our Mission

- Building efficiency! – eliminating redundancies in planning environmental courses (for example)
- Institutional identity to help secure external funding opportunities
- Enhance reputation as a center for liberal education
- Attract high-quality, highly-motivated new students from local schools by development of collaborative institutes with primary and secondary educators and students
- Attract/retain quality faculty with interests in cross-disciplinary curricula & environmental issues
- Build on current marks of excellence: especially collaborative research/scholarship; service learning

*FOR MORE INFORMATION or to have some one meet with your group CONTACT:  
Jim Boulter (Chem), Kate Hale (English), Harry Jol (Geog/Anth), Eric Jamelske (Econ) or Paula Kleintjes Neff (Biol).*

**B. INITIAL SCAN of ENVIRONMENTAL RESOURCES**  
**University of Wisconsin-Eau Claire**

**June 2007**

- I. **FACULTY:** Nearly 30 faculty/staff have been identified that currently have an association or interest in environmental studies

<b>UWEC faculty/staff</b>	<b>Department</b>	<b>Title (area of expertise)</b>
Kristina Beuning	Biology	Aquatic ecology, paleoecology, limnology
Jim Boulter	Chemistry	Atmospheric chemistry
Jack Bushnell	English	Nature writing, technical writing
Wayne Carroll	Economics	Environmental economics
Doug Faulkner	Geog/Anthropology	Fluvial geomorphology, geophysics
Alan Gengenbach	Chemistry	Remediation chemistry
Katherine Grote	Geology	Hydrogeology
Kate Hale	English	Environmental literature
Sean Hartnett	Geog/Anthropology	Cartography, GIS, Bathymetrics
Dan Herman	Biology	Microbiology
John Hildebrand	English	Nature writing, Environmental lit.
Robert Hooper	Geology	Geochemisry
Christina Hupy	Geog/Anthropology	GIS/RS, Biogeography
Joseph P. Hupy	Geog/Anthropology	Human-Enviro. Relations, Military Geog
Phil Ihinger	Geology	Systems geology
J. Brian Mahoney	Geology	Sedimentary geology
Eric Jamelske	Economics	Environmental economics
Harry Jol	Geog/Anthropology	Geomorphology, geophysics
Paul Kaldjian	Geog/Anthropology	Geography of food, sust. agriculture
Paula Kleintjes Neff	Biology	Conservation biology, ecol. restoration
Dan Langlois	EAC	Outdoor environmental education
David Lonzarich	Biology	Freshwater fish ecologist
Scott Lowe	Phil/Religious Studies	Religion and environment
John Mann	History	Regional/public history
Sean McAleer	Phil/Religious Studies	Environmental ethics
Jim Oberly	History	Regional/public history
Jim Phillips	Chemistry	Physical and environmental chemist
Crispin Pierce	Environ. Public Health	Toxicology, environmental health
Garry Running	Geog/Anthropology	Geomorphology, geoarcheology
Jenny Shaddock	English	Ecological literacy and philosophy
Sasha Showsh	Biology	Microbiology
Lloyd Turtinen	Biology	Microbiology
Ingolf Vogeler	Geog/Anthropology	Land use, rural agriculture
Evan Weiher	Biology	Vegetation ecology, restoration ecol.
Todd Wellnitz	Biology	Aquatic ecology
Al Wiberg	EAC	Outdoor environmental education

**UWEC dept. discipline strengths in ES** (mostly in sciences, gaps are in humanities and business)

**Biology**

Ecology at multiple scales (population, community, ecosystem) and in a variety of subdisciplines (aquatic, terrestrial, paleo, conservation, restoration, behavioral, animal, vegetation etc.); microbiology and infectious disease

**Chemistry**

Atmospheric and remediation chemistry

**Economics**

Courses only- environmental economics

**English**

Nature writing, ecological literacy, science/technical writing

**Environmental and public health-**

Toxicology, risk analysis

**Geography/Anthropology**

Physical geography and its various subdisciplines, including geomorphology (especially coastal, fluvial, and soil geomorphology), surface-water hydrology, climatology, and biogeography; Quaternary environmental reconstruction; geoarchaeology; human-environment interactions; food production and distribution; field-based analysis of the human and physical environment.

**Geology**

Environmental chemistry, global climate change (teaching), surface water and groundwater. Expertise and instrumentation in support of other research groups.

**History**

Courses only- public history

**Philosophy/Religious Studies**

Courses only- environmental ethics

**Political Science**

Courses only- international and domestic policy

**College of Business**

Courses only- international business classes

**II. EXISTING PROGRAMS beyond individual departmental majors****Comprehensive Majors**

Environmental and Public Health (ENPH)

Ecology and Environmental Biology (Biology)

Microbiology (Biology)

Resource Management (Geography & Anthropology)

Environmental Geology (Geology)

\*Nothing in humanities or social sciences at this time

**Minors**

Environment, Society and Culture (interdisciplinary)

Environmental Science (interdisciplinary)

\*Departments listed above

**CONFLUENCE** Research and education initiative: work group of several faculty/staff listed above that are involved in grant writing, hosting workshops and establishing research priorities (and doing research) for the Lower Chippewa River in partnership with WDNR, USGS, USFWS etc.

**Environmental Adventure Center**

The EAC Program functions on the service side of the university organizational model. It provides outreach/service in environmental education, environmental leadership and outdoor recreation to academic units, non-profits, schools etc. It also serves as a physical resource, meeting place and outdoor gear rental facility.

**Campus student groups**

Biology Club, Geography Club, The Conservationists, The Foodlums, Student National Environmental Health Association; Social and Environmental Action Coalition

### **III. FACULTY-STUDENT COLLABORATIVE RESEARCH**

In combination, the faculty listed above have:

- brought in over 5 million dollars of external funding on environmental research related projects.
- represent a significant proportion of recipients of ORSP student-faculty collaborative research grants
- represent a significant proportion of faculty-student poster presentations at UWEC poster day and they have presented numerous oral and poster presentations at off-campus professional meetings.
- published over 200 environmentally related research papers

### **IV. GEOGRAPHIC LOCATIONS: of primary teaching and research used by UWEC faculty listed above. Faculty work globally (local to international) and the list below is not exhaustive.**

**Regionally:** Chippewa River Valley, Mississippi River Valley, Northern & central Wisconsin,

**Nationally:** California, Colorado, New Mexico, Texas, Nebraska, Minnesota, Mississippi, Washington State, Arkansas, Oregon, Idaho, Montana, Nevada, Arizona, Utah, Michigan, Maine, Florida

**International:** Canada (BC, Alberta, Manitoba, Yukon, Northwest Territories, Saskatchewan, Ontario), Israel, New Zealand, Bahamas, Costa Rica, Europe (several countries), Antarctica, Australia, Africa (Malawi), Greenland

### **V. COLLABORATORS: (regional, national and international corporations, govt. agencies and non-profits with which faculty have worked as researchers, served as advisory members, guest speakers etc.)**

Government agencies : US Geological Service, WI Department of Natural Resources, Environmental Protection Agency, US Army Corp of Engineers, DOGAMI, WA Dept. of Energy, National Park Service, US Fish and Wildlife Service, USDA Forest Service, USDA Natural Resource Conservation Service, Great Lake Fisheries and Wildlife Commission, US Dept. of Defense, Dept. of Transportation, City of Eau Claire, EC City-County Public Health Dept., EC County Parks and Forest, numerous WI Townships and communities.

Non-profits: Western WI Land Trust, River Country RC&D, Sierra Club, Northern Thunder, The Prairie Enthusiasts, Chippewa Valley Sustainable Energy Association, Beaver Creek Reserve and Citizen Science Center, River Country RC & D, The Nature Conservancy, Trout Unlimited, Student Conservation Association, Buffalo Co. Land Conservation Department, the Blufflands Alliance, the Upper Iowa River Watershed Alliance, Friends of Half Moon Lake.

Businesses: various GPS and GIS companies (e.g., ESRI), environmental and engineering consulting firms (e.g., Ayres, Davey, AES), industry (e.g., WRR, Nestle).

*Examples-*

*k-12:* faculty give various presentations (e.g., climate change) to school groups

*speakers:* faculty give talks to local business organizations (e.g., Kiwanis), non-profits ( e.g., Sierra Club), alumni association, churches, etc.

*leadership:* faculty serve as advisory board members (e.g., Beaver Creek Reserve), organizers and club officers (e.g., EC Earth Day Celebration, professional organization officers), members of the community (e.g., organic farmers)

*consulting &/or research:* faculty provide consultations (e.g., GIS and GPR, endangered species, invasive species) pro bono and/or for fees for sharing their expertise with local businesses and community members.

VI. **PHYSICAL RESOURCES** (Greenhouses, Aquatics wet lab, GIS lab, EM lab, Material Science Center, individual research labs, libraries and equipment (e.g., GPR, RT-PCR) in disciplines, EAC-Hilltop, Foodlums Campus Garden, Meterological Station on Phillips rooftop)

VII. **EXISTING COURSES**

**Perspective Courses:**

Biol 180 and Geog 178 Conservation of the Environment  
ENPH 210 Introduction to ENPH  
Geog 270 Land use issues and problems  
Geog 378 International environmental problems and policy  
Geog 375 Environmental quality  
Geog NEW Environmental history  
Geol 103 Societal Issues in Earth Science

**Fundamental Science Courses:**

Biol 110 Ecology and evolution  
Biol 111 Essentials of cell biology and genetics  
Chem 103 and 104 Introductory chemistry  
Geog 104 Physical geography  
Geol 115 Environmental geology

**Ecology Courses:**

Biol 330/530 Population and community ecology  
Biol 375/575 Limnology and Aquatic ecology  
Biol 338/538 Vegetation ecology  
Biol 306/506 Infectious Disease ecology  
Biol 425/625 Ecosystem ecology

**Natural Science breadth and/or technical Courses:**

Biol 328/528 Conservation Biology  
Biol 345/545 Wisconsin Wildlife  
Biol 361/561 Biology of Microorganisms  
Biol 383/583 Biostatistics  
Chem 127 Chemistry and Climate  
Chem 304 Environmental Chemistry  
Geog 199 Geographic techniques  
Geog 304 Introduction to geomorphology  
Geog 328 Quantitative methods in geography  
Geog 335 Geographic Information Systems  
Geog 338 Remote Sensing of the Environment  
Geog 340 Climatology  
Geog 345 Quaternary environments  
Geog 350 Soils and the Environment  
Geog 360 Geomorphology  
Geog 361 Environmental Hazards  
Geog 363 Watershed Analysis  
Geog 364 Fluvial Processes and Landforms  
Geog NEW Advanced GIS  
Geog NEW Biogeography

Geog NEW War and the Environment  
Geol 301 Earth Resources  
Geol 308 Water resources  
Geol 315 Physical hydrogeology  
Geol 336 Geochemistry  
Geol 415 Chemical hydrogeology  
Geol 418 Earth History

**Environmental Health courses**

ENPH 322/522 Radiological Health  
ENPH 435/735 Practicum in Environmental Public Health  
ENPH 441/641 Water and Wastewater  
ENPH 445/645 Solid and Hazardous Waste Management  
ENPH 475/675 Pest Control Management  
ENPH 490/690 Environmental Toxicology and Risk Assessment  
ENPH 725 Air Quality Management.

**Social Studies and Humanities breadth and/or technical courses:**

Econ 268 Environmental economics 3cr  
Engl 305 and 308 technical writing courses  
Engl xxx Nature Writing  
ENPH 408 Environmental Law  
Geog 365 Outdoor recreation  
Geog 369 Geography of Food  
Hist 240 American Indian History  
Hist 386 Introd. to Public History  
Phil 320 Environmental Ethics 3cr

**Experiential field courses and capstones**

Biol 320 Studies of Tropical Environments  
Biol 329 Field Experience in Conservation Biol.  
Biol 490 Biological Field Studies  
Biol 485 Issues in Biology (when environmental emphasis)  
Geog 368 Landscape analysis- physical  
Geog 401 Physical Geog. Capstone Seminar  
Geol 303 Rocky Mountain Field Studies  
Geol 343 Geological Field Excursion  
Geol 470 Field Geology I 3cr

**Integrative Courses** – We have none at this time but several faculty listed above have interest in teaching courses with an environmental theme, premise or interconnection that would break barriers and truly allow an integrative approach at home or abroad.

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### **C. ENVIRONMENTAL –RELATED PROGRAMS IN THE REGION**

No other UW comprehensive has both an ES Institute and a broad based LA undergraduate curriculum, or our complementary signature marks of excellence (Study Abroad, Faculty-student Research and Service Learning).

#### **UW-Madison Gaylord Nelson Institute for Environmental Studies**

<http://www.ies.wisc.edu/> and <http://www.nelson.wisc.edu/undergrad/>

- Graduate Programs: [Conservation Biology and Sustainable Development \(M.S.\)](#), [Land Resources \(M.S. and Ph.D.\)](#), [Water Resources Management \(M.S.\)](#)

- Graduate level certificates in: [Air Resources Management \(ARM\)](#), [Energy Analysis and Policy \(EAP\)](#), [Humans and the Global Environment \(CHANGE\)](#), [Transportation Management and Policy \(TMP\)](#)

- Undergraduate Environmental Studies Certificate Program (used to complement any major)

#### **UW-Oshkosh [http://www.uwosh.edu/enviro\\_studies/](http://www.uwosh.edu/enviro_studies/)**

Undergraduate Major or Minor in Environmental Studies

“The program consists of an [interdisciplinary curriculum based in the liberal arts](#) that incorporates the natural sciences, social sciences, and humanities. As such, it is the only major of its kind in the University of Wisconsin System. Students earn credits from many departments at the UW Oshkosh in addition to taking core ES courses that provide a solid background in key environmental issues and the various analytic tools required to address them. The Program offers opportunities for interactive classroom learning as well as for field study, internships, and student-organized events and projects. As a young but growing program, ES at UW Oshkosh provides an intimate learning environment that both students and faculty find intellectually rigorous and personally enriching. The major and the minor are available to students from all colleges at the University of Wisconsin Oshkosh. They are certified for licensure by the Department of Public Instruction for College of Education students preparing to teach Elementary or Middle School, or High School for students specializing in the Natural Sciences.”

#### **UW-River Falls- <http://www.uwrf.edu/pes/enviro/welcome.html>**

College of Agriculture, Food and Environmental Science:

Undergraduate Majors: Conservation, Environmental Science, Land Use Planning;

Minors: Conservation, Environmental Studies, Land Use Planning

Masters of Science option in Community Sustainable Development.

Graduate certificate program in wildlife recreation and nature tourism

**In April, UWRF [launched a formal institute](#) to assist communities in the St. Croix Valley** with challenges related to sustainability, growth and change. The St. Croix Institute for Sustainable Community Development has been created at the University to address sustainability in the broadest approaches. The institute also will coordinate the efforts across campus as it implements a major institutional initiative to become an energy sustainable, self-sufficient campus.

<http://www.uwrf.edu/pa/2007/0704/0406071.htm>

**UW-Stout:** Minor in Environmental Studies

**UW-Green Bay:** graduate program and undergraduate major in Environmental Science and Policy

**UW-Steven’s Point:** graduate and undergraduate programs with applied natural resource emphasis; fisheries, forestry, wildlife as well as in environmental education (teacher, naturalist interpreter)

#### **University of Minnesota-St Paul**

Undergraduate major in Environmental Science, Policy and Management <http://www.environmentalscience.umn.edu/>

#### **University of Minnesota-Duluth**

Undergraduate major in Environmental Studies (housed in Dept of Geography)

**Privates:** ES programs at St. Olaf, Northland, Macalester etc.