



ENR Highlights

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*Committed to interdisciplinary
and collaborative approaches to
teaching, research, and service*



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BARK BEETLE WORKSHOP

The Ruckelshaus Institute of Environment and Natural Resources in October hosted a two-day workshop on the bark beetle epidemic, which included more than 75 forest managers, scientists, and researchers from across the Intermountain West. The focus of the workshop was on management strategies for bark beetle impacts in the Intermountain West, and was held at the UW Conference Center in Laramie and sponsored by the Bureau of Land Management, US Forest Service, Wyoming State Forestry Division, Laramie Rivers Conservation District, and Neiman Enterprises, Inc.

“Our approach to planning this workshop was quite different from other bark beetle conferences that have occurred over the past several years,” said Dr. Dan Tinker, associate professor in the Department of Botany. “Rather than an emphasis on tree mortality and the current extent of the epidemic, we chose instead to focus on identifying appropriate management strategies for the wide range of post-outbreak forest conditions that currently exist, and this required input from a variety of stakeholders in the region.”

It is estimated that bark beetles have impacted more than 3.6 million acres of forests in Wyoming and Colorado alone. The epidemic involves multiple species of trees and beetles. Because outbreaks of this scale are unprecedented in recorded history, forests managers have been faced with difficult decisions when managing for a range of tree species in forests across the Intermountain West.

The workshop included breakout groups for ponderosa pine, Douglas-fir, lodgepole pine, and Engelmann spruce/subalpine fir, representing the key tree species impacted by beetles at different elevations. Speakers included Dr. Barbara Bentz, research entomologist with the US Forest Service, and Dr. Steve Smutko, UW Spicer Chair in Collaborative Practice.

The Ruckelshaus Institute is in the process of developing a report on the workshop proceedings that is intended for managers to use as a resource guide for ecosystem management strategies for current and future bark beetle affected forests. Participants worked in breakout groups to identify “desired future conditions” by forest type. They also developed recommendations for “new management approaches” for achieving the identified desired future conditions while managing for multiple use.

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AUTUMN 2010

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LETTER FROM DIRECTOR

The ENR Program has announced a new structure for its leadership. Over the last year, Board Chair John Turner and I have been working with the UW administration and a private consultant to reshape the way the ENR Program works with and seeks input from its Board. In June, the ENR Board was established. Smaller in number than the former Ruckelshaus Institute Board, the ENR Board will serve in an advisory capacity to all three ENR entities – the Haub School, Ruckelshaus Institute, and Wyoming Conservation Corps – toward the mission of advancing effective decision-making on environmental and natural resource challenges through research, policy analysis, education, process support, and outreach.

We will continue to engage the people who are interested and invested in our mission through a network of expert Senior Advisors, who have agreed to contribute their expertise on important topics, and to enhance our connection to state, regional, and national audiences. The university and I are extremely grateful to those who have given their time and talents in service to the Ruckelshaus Institute. Your expertise, dedication, and meaningful participation to the board's important deliberations have contributed to the success of the Ruckelshaus Institute. Thank you for your time and knowledge, and to those continuing as Senior Advisors in support of the ENR program.

Director of ENR, Wyoming Excellence Chair



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BARK BEETLE CONT.

Why are these outbreaks occurring now, and why are they so prevalent in Wyoming and other western states? Many scientists have said recent dry conditions and warm temperatures may have increased population levels of these native insects. Years of warm temperatures have likely reduced what is called “winter kill” in beetle populations, and facilitates the reproduction and spread of these insects. Scientists also suggest that through a combination of fire suppression and harvesting history, as well as other natural disturbances, many forests in the Intermountain West have now reached a level of maturity that makes them highly susceptible to bark beetle attacks. Many foresters say that making way for new trees to emerge and providing for a diversity of species would be a positive outcome for our forests in the future.

“While many of our forests in this region will not look the same as they did before the bark beetle epidemic, and for many years to come, we’re encouraged by the surprising number of trees that have apparently survived the outbreaks,” Tinker said. “These new, developing forests will require new and innovative management approaches to ensure sustainable forest landscapes in the future, and it’s critical that we continue to hold workshops such as this one to share ideas as we move forward.”

Information on this workshop is available at www.uwyo.edu/enr/barkbeetle.com, which also includes an annotated bibliography of suggested reading on the science.



The Bark Beetle Blog On WyoFile

The bark beetle issue is part of a new blog for WyoFile, The Beetle Blog. Brie Richardson, teaching assistant for the ENR Capstone Course, will provide regular blog posts on the student learning experience related to the class project to develop an environmental assessment on a proposal to harvest bark beetle-kill timber from the Medicine Bow National Forest for biofuel. (Log on to www.WyoFile.com each week for The Beetle Blog).

Bim Kendall House Dedication Event

UW’s ENR program held a major dedication event in September for its new building, the Bim Kendall House, on the corner of 8th and Fremont Streets.

The event included university officials and many national figures who have been instrumental to the success of the ENR program, including the Kendall family, the Haub family, William D. Ruckelshaus, President Tom Buchanan and the UW administration, the UW Board of Trustees, Foundation Board, and ENR Board.

The ENR dedication event was to honor Don and Bim Kendall for their generous gift that has led to the new building for ENR. Don Kendall is a founding board member of the Ruckelshaus Institute, and gave a gift in honor of his wife, Bim, for whom the house is named.

William Ruckelshaus (photo below left) spoke at the dedication and discussed the importance of collaborative process in decision-making. He was the Institute’s first board chairman in 1994. The Ruckelshaus Institute was named in his honor.



Bill Ruckelshaus giving a speech during the Kendall House dedication event (photo on left). Bim Kendall visiting with students at the ENR pancake breakfast (below).





TRAVEL ABROAD IN PANAMA

As part of its interdisciplinary and applied curriculum focus, the Haub School of Environment and Natural Resources (ENR) includes an international travel program that provides students with experiences addressing real-world environmental and natural resource problems in other countries. This program is thanks to the support of Helga and Erivan Haub and the Haub School Endowment.

This past summer, six students of ENR 5890: International Experience in Ecosystem Services traveled to Panama to conduct research on “ecosystem services”(benefits people receive from these natural systems) provided by the Panama Canal watershed and its water resources. The students focused fieldwork and lab studies on the Agua Salud project, which is a local research project led by UW’s Cline Chair, Dr. Fred Ogden. Dr. Scott Miller, associate professor, Department of Renewable Resources ,also assisted with the trip. The Smithsonian Tropical Research Institute (STRI), based in Panama City, is administrator of the project.

“The environmental education I received while in Panama was the single most important qualitative experience in my graduate career thus far because of the human dimension of living and working with such talented UW students and researchers,” said Brie Richardson, a second year UW graduate student in American Studies/Environment and Natural Resources/Water Resources. “Our classroom was immense and ranged from isolated forest study sites to the enclosure of the rental van where I learned as much as I did in and through the ‘natural’ classrooms on the trip.”

Students spent three weeks conducting research and touring project sites within the Panama Canal watershed. Their studies focused on water runoff, soils, forest ecology, and rainfall, with lab work conducted primarily on water quality.

“We were able to use the educational infrastructure of the Smithsonian Tropical Research Institute to support this field course,” said Ogden, professor in the Department of Civil and Architectural Engineering and a STRI Research Associate. STRI assisted with logistics, field transportation, and on-site expertise in a number of disciplines of interest to UW students.



PANAMA CONT.

“One of the compelling reasons to study hydrology in the tropics is that the process is much more accelerated there, and we can learn about the interactions between biology and hydrology much more rapidly and efficiently than in temperate climates,” Ogden said.

“The country of Panama offers the historical data set from the Panama Canal, and the presence of STRI, two very important advantages compared to other tropical countries.”

The students also toured research sites in central Panama and learned about the country’s agricultural practices. This included touring teak and native species plantations where they measured biomass, used GPS to correlate landscape position and rates of tree growth, and assisted with tracer experiments and conducted soil measurements to better understand flow through tropical soils, all while battling high temperatures and humidity. Students learned, for example, that the Panama Canal is the only watershed on the planet that flows into two oceans due to its construction. It is also the longest and most complete hydrological record of any watershed comparable in size in the tropics. The students’ work culminated with a written report describing their research on a range of ecosystem services provided by the Panama Canal watershed. This trip represents the Haub School’s efforts to provide hands-on field experiences and international travel opportunities working on environmental problems in other parts of the world.



Director Indy Burke’s students in ENR 1200: Environment traveled to the Medicine Bow National Forest to conduct soil respiration measurements (carbon dioxide flux). These samples were taken from bark beetle–infested stands as well as from stands with no infestation evident.

ENR American Indian Students Recognized

Ernest Lawson, BA American Studies/ENR (Northern Arapaho), was chosen from a highly competitive pool of applicants to attend the Ecological Society of America’s November workshop, “The Future of Environmental Decisions.” The workshop will be held at the National 4-H Conference Center in Chevy Chase, Maryland, and will allow undergraduate students and recent graduates to explore how scientific data can help citizens and decision-makers better understand the interaction of local and regional issues and the complexity of environmental decision-making. Lawson has worked for the last year in the laboratory of Dr. Bill Lauenroth, professor in the Department of Botany.

Antone Lopez, BA American Indian Studies/ENR (Crow), was awarded a Hopa Mountain Fellowship for 2011. Lopez is recognized for his work as a tribal leader working to improve ecological health in Montana. Lopez is currently studying in Laramie and conducting research under the supervision of Dr. Anne Sylvester, professor in the Department of Molecular Biology.

New ENR Courses Serve First-year Students

This fall, several Haub School students have been participating in field experiences. Students in two new ENR courses, ENR 1200: Environment and ENR 1500: Water, Dirt, and Climate, are taking advantage of Wyoming’s tremendous natural laboratories. Dr. Indy Burke and her teaching team designed six Saturday labs for students enrolled in ENR 1200: Environment, an integrated science course. Complex, real-world challenges such as bark beetle or rangeland management in the Medicine Bow National Forest and Colorado’s shortgrass steppe act as portals through which students explore fundamental scientific principles.

Dr. Cliff Riebe, in the Department of Geology and Geophysics, is in the process of introducing students to the science of water, soil, and the earth’s environment using the methods of environmental geology. Students in Dr. Riebe’s popular new course are gaining a sophisticated understanding of integrated environmental science issues through conventional bench labs and outdoor field experiences, including a class trip to the Laramie River.



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Justin Caudill, Agricultural Program Coordinator for the Wyoming Department of Agriculture

“Provided a strong foundation for dealing with the media in the Intermountain West.”

~ Media Skills and Communications Training ~

Chris Coligan, Wildlife Advocate for the Greater Yellowstone Coalition

INSTITUTE TRAININGS

The Ruckelshaus Institute in October completed a series of workshops on “Natural Resource Decision-Making and Communications,” with the goal to enhance its collaborative process efforts under the UW Spicer Chair in Collaborative Practice, Dr. Steve Smutko. The well-attended trainings included “Facilitating Controversial Public Issues,” which was held last June in Lander, “Negotiation Skills in Natural Resource Management,” held in August in Sheridan, and “Media and Communication Skills,” held this month in Jackson. The series was sponsored by the Wyoming Agriculture and Natural Resource Mediation Program and included a wide variety of natural resource professionals from across the state and region.



First-year ENR students this fall took a hike up Medicine Bow Peak, 12,013 feet, in the Snowy Range, with Assistant Research Scientist Anne Jakle and ENR employee Amber Wilson as their guides.

STAFF NEWS

ENR is pleased to welcome a new member to its staff, Anne Jakle, who will serve as Assistant Research Scientist for the Ruckelshaus Institute. Jakle has a background in research, science writing, and communications and for the past seven years has worked for a variety of environmental agencies and natural resource management and research initiatives. Her former employers include the U.S. Department of Energy, World Resources Institute, and the Rocky Mountain Institute. She holds an MS in Natural Resource Management from Massey University in New Zealand, where she was also a 2006 Fulbright Graduate Student. She also holds a BA in Environmental Studies from Dartmouth College in New Hampshire. Jakle will work closely with Assistant Director Jill Lovato to coordinate and implement research projects and collaborative processes and events on a variety of natural resource issues facing Wyoming and the West.

ENR gave a farewell party for WCC Project Coordinator Ben Bump, who has been with the program since its inception in 2006. Bump recently accepted a position as Senior Lands Management Specialist with Wyoming State Lands and Investments.

Assistant Research Scientist Anne Jakle, new staff member of ENR, holding a skull of Risso’s dolphin in Tierra del Fuego, Argentina.



WCC 2010 FIELD SEASON

“Leadership in public service” is the motto of the Wyoming Conservation Corps, with Wyoming’s residents as the beneficiaries of the crews’ hard work enhancing public lands. From maintaining habitats for wildlife and mitigating bark beetle impacts on the forests, to creating recreational trail systems and restoring historic sites, this is the work of the Wyoming Conservation Corps (WCC). The WCC lives up to its motto by providing leadership opportunities to the students of the University of Wyoming, under the Environment and Natural Resources program.

“This program benefits everyone involved. Students gain invaluable leadership and outdoor skills, and hands-on experience in natural resources management, while the agencies we partner with gain their hard labor on projects that span the state,” said Indy Burke, director of the Environment and Natural Resources program.

As the 2010 summer field season wrapped up this month, the WCC logged more than 31,000 hours of service, with 36 projects completed by six crews of 48 students, all camping out at each project and working together to assist resource managers with public lands management.

With sponsors such as UW’s School of Energy Resources, as well as industry, corporate, and nonprofit organizations, WCC partners with state and federal land management agencies on projects that involve students tackling a variety of outdoor leadership skills.

“Students are our future land stewards and through the WCC they can learn firsthand about natural resources and energy development in Wyoming,” said Mark Northam, director of UW’s School of Energy Resources. “The wide assortment of projects on public

lands allows them to gain the skills and field experiences necessary to pursue a career in natural resources.”

At the onset of each field season, students are selected and assigned to a WCC field crew. Each one includes two selected crew leaders. The crews are then assigned to public service projects throughout the state, with the field season occurring from June to August. Each project is completed in a 10-day stint with the crews camping out at each location.

Some WCC 2010 accomplishments include:

- 15 projects with Wyoming State Parks, including building trails and fences, restoring historic sites, and assisting park staff with maintenance efforts;
- 8 projects with the Bureau of Land Management all across the state ranging from creating river access trails in Pinedale to collecting seeds of native plants for scientific research, and thanks to a donation from Devon Energy, construction of a riparian fence enclosure in Rawlins;
- 6 projects with Medicine Bow National Forest on mitigating bark beetle impacts and conducting campsite maintenance efforts;
- 3 projects with a new agency partnership, the Casper Nordic Center, cutting a 20-foot-wide trail for the Casper Biathlon Club; and
- Working in the Bridger-Teton National Forest with The Murie Center in the Jenny Lake area on restoration work and trails and at the Craig Thomas Discovery and Visitor Center in Moose, Wyoming.





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