MESSAGE FROM THE DEAN

Supporting research and outreach on forest sustainability and certification have been important efforts during my term as Rachel A. Woods Professor. During the past year, the College examined future opportunities for our C. L. Pack Experimental Forest. Pack has historically been vital to our research, teaching, and outreach mission. I want to ensure its continued relevance by positioning it in the forefront of experimental and demonstration forests nationwide. Along with my decision to create a new Center for Sustainable Forestry at Pack Forest (see article, page 2), I also accepted a proposal to seek third party green certification for Pack Forest operations.

Interest in voluntary forest certification continues to grow in our region. Recently our state’s trust forests were assessed for environmental stewardship under the Forest Stewardship Council’s principles and found to be significantly above acceptable levels, meeting or exceeding the standards in all but one area. A pre-audit under the Sustainable Forestry Initiative (SFI) was also conducted; the full audit will occur when funding is available. Interest in public and private forest certification goes beyond regional and national boundaries — it is a major issue worldwide. Environmental groups see it as a way to verify a landowner’s or corporation’s commitment to sustainable forestry, while corporations and public agencies may use it to increase market share, gain new markets, or gain public trust.

At Pack Forest, we will initially seek certification under the SFI Standard. SFI, a management-based system that relies on general standards conforming to sustainable forestry principles, calls upon participants to meet market demands while using environmentally responsible practices promoting the protection of wildlife, plants, soil, and air and water quality to ensure the future of our nation’s forests. Specific objectives, including using the best available science and conservation practices; managing for wildlife habitat, protection of water quality, visual impact of forest operations, and recognition of qualities of special ecological, cultural, and historical significance; promoting efficient use of forest resources and continual improvement in sustainable forestry practices; and full reporting, cooperation with stakeholders, and provision for public participation, translate these principles into action.

In North America, over 136 million acres of forestland are now certified under SFI, 104 million of these acres are independently third-party certified. This makes SFI the largest forest certification program in North America and the only one that meets International Organization for Standardization auditing protocols requiring strict separation between standard setting and accreditation of certifying bodies. We will evaluate other certification systems and, if appropriate, pursue them as well. We will also explore development of a certification template that small non-industrial forest landowners can use to achieve cost-effective certification.

Third party verification, supported by a thorough documentation of policies and a commitment to sustainable practices, will demonstrate our leadership in integrating the concept of sustainability and its three component values — ecological, social, and economic — into all of our College’s programs. This will help set the standard for responsible professional forestry in our state and throughout the region.

B. Bruce Bare

“Demonstration of sustainable forestry practices will enhance Pack Forest’s leadership throughout the forestry community.”
College Plans New Center for Sustainable Forestry at Pack Forest

In 1929, the first class of UW forestry students tossed their bedrolls and Notebooks into the newly constructed cabins at Charles Lathrop Pack Experimental Forest. Seventy-five years later, learners in academic, professional, and public education programs still benefit from Pack Forest’s valuable field and research opportunities and demonstrations of forestry and environmental processes in action. The forest itself is a field laboratory containing a diversity of forest types, sites, and soils. Ongoing research projects at Pack include short-term evaluations of tree spacing and growth, long-term evaluations of the effects of pruning on wood quality, and forest amphibian response to landscape vegetation patterns. Projects range from individual graduate student research to large projects undertaken by the College’s Stand Management Cooperative.

Now Pack Forest will play an exciting new role as the site of the College’s Center for Sustainable Forestry. The Center will both embrace and update the forest’s historic mission, said Dean Bruce Bare as he announced the new Center in December. “The term ‘conservation’ used 77 years ago to describe the concept to be taught and demonstrated at Pack then meant keeping land financially productive, largely through reforestation. While that meaning is still valid, the College has adopted a much broader vision and mission that focuses on the concept of ‘sustainability’ — the ecological, economic, and social sciences by which we can better understand and manage our natural resources.”

The Center will be charged with discovering, teaching, and demonstrating the concepts of sustainable forestry, with a special focus on the College’s strategic themes — sustainable forest enterprises and sustainable land and ecosystem management in an urbanizing world — as well as providing services associated with sustainable forestry such as forest certification consulting and technology transfer. Existing College programs will benefit from Center support through partnerships in outreach and demonstration. The Center will also develop its own programs implementing the College’s strategic themes — possibilities include watershed and community development, forestry extension with a focus on sustainability, forest certification services, and public participation in resource management through forestry forums.

The Center’s development of partnerships with key public and private organizations will enhance the College’s recognition as a leader in sustainable forest management. Pack Forest already partners with the Nisqually Watershed Council, and Stewardship Program, Washington Office of the Superintendent of Public Instruction, and regional colleges and universities. The Center will also be charged with management responsibilities for Pack’s forest properties and conference center facilities. Forest operations will provide revenue to support Center and other College programs and to demonstrate sustainable forest operations. The conference center will continue to provide management and scheduling for classroom, conference facilities, residential accommodations, food service, and grounds maintenance.

Says Bare, “The Center for Sustainable Forestry will provide an exciting new chapter in our long history of forestry education leadership at the College and at Pack Forest.”

Study of Salmon and Aquatic Insect Interactions Will Aid in Stream Restoration

Jon Honea, Ph.D. candidate in the College’s ecosystems analysis program, is researching an important step in understanding the ecology of marine nutrients in salmon spawning streams. Honea, studying under Professor Bob Gara, is examining the effects of salmon spawning on aquatic insect production — whether nutrients released by dead salmon fertilize streams, resulting in more insects and thus more food for juvenile salmon. Spawning salmon bring large quantities of marine nutrients into fresh-water ecosystems. For example, Kennedy Creek, which drains into the south end of Puget Sound, receives up to 88,000 chum spawners in its approximately 4 kilometers of available spawning habitat — about 3.5 kilograms of nutrient-rich salmon tissue per square meter of stream and riparian area.

Researchers have traced nutrients released by spawning salmon to many different types of organisms, from freshwater invertebrates and fish to birds and bears and even to streamside vegetation. These organisms take up the nutrients by feeding directly on salmon eggs and spawned-out carcasses, taking up dissolved nutrients (e.g., algae and fungi), or feeding on other organisms that have taken up salmon nutrients. Honea’s research hypothesis is that streams fertilized by salmon nutrients are more productive than streams that receive relatively few or no salmon. Although salmon disturbing the stream bed as they dig nests for spawning may initially decrease insect populations, populations may subsequently increase from the availability of salmon nutrients. Long after the salmon carcasses and eggs have been consumed or decomposed, increased insect production would benefit the hatching fry and salmon that remain in streams because insects are an important food source for them.

Past research has demonstrated that insects are attracted to and consume salmon carcasses and eggs, insect growth-rate increases with consumption of salmon muscle tissue, and there are more insects in the local areas around salmon carcasses. However, given that streams are highly variable habitats frequently disturbed by high water flows, does the availability of marine nutrients really result in more insects overall? Honea’s research is measuring aquatic insect production in Kennedy Creek and then linking production differences to salmon. Although salmon disturbing the stream bed as they dig nests for spawning may initially decrease insect populations, populations may subsequently increase from the availability of salmon nutrients. Long after the salmon carcasses and eggs have been consumed or decomposed, increased insect production would benefit the hatching fry and salmon that remain in streams because insects are an important food source for them.

The study of Kennedy Creek research results will aid restoration and conservation efforts by providing a greater understanding of the role of salmon nutrients in aquatic insect community dynamics and the importance of insects as a link between generations of salmon.
Washington Park Arboretum Sponsors Show Garden

The Washington Park Arboretum sponsored a show garden at February’s Northwest Flower & Garden Show in Seattle. “Gardens in a Forest Glade” was designed by Iain Robertson, Associate Professor in Landscape Architecture and adjunct faculty member in the College, along with design student in UW’s Landscape Architecture program. Set in a Pacific Northwest forest biome, the garden presented twelve large container gardens, each embodying plant communities of ecosystems around the world, including Amazonia, Creta, a Central-American cloud forest, Turkey the Sonoran Desert, and a Rocky Mountain alpine area. The garden illustrated and reflected the Washington Park Arboretum, where open space grows as living backdrops for plant collections from around the world.

The garden was constructed by volunteers from the Arboretum Foundation and UW Arboretum staff, many of whom went to and talked to the public during the five-day show. The Arboretum Foundation sponsored the preview party opening the show as an Arboretum fundraiser.

College Association in the show also included a booth and events sponsored by the Center for Urban Horticulture and UW Arboretum staff and a booth co-sponsored by the College and the UW’s Program on the Environment.

Robertson, Associate Professor in Landscape Architecture and Co-Director of the College’s Rural Technology Initiative, was a principal investigator for a major new federal research initiative supported by the U.S. Department of Agriculture’s National Institute of Food and Agriculture (NIFA) and the Northern Great Plains Sagegrouse Cooperative Ecosystem Studies Unit.

New Endowed Fellowship Honors the Late Dean Bethel

The College is pleased to announce the establishment of the James and Marjorie Bethel Endowed Graduate Fellowship. Through the wonderful generosity of Jim and Dorothy Bethel, the fellowship will help the College recruit and support students in all of its graduate programs and fulfill its vision of providing world class knowledge and leadership for environmental and natural resource issues. Jim, who teaches civil engineering at the University of Washington, is in the sum of the College’s dean, Jim Bethel. St. The memorial endowment honors the strong research legacy instilled and nurtured by Dean Bethel and, through its unrestricted nature, wisely allows for flexibility and future change.

Rural Technology Initiative Reviewed

The Rural Technology Initiative (RTI), a collaborative effort of the College and Washington State University, funded by a Congressional appropriation through USDA Forest Service, recently hosted a site visit by a review team chosen by the USDA Cooperative State Research, Education, and Extension Service. RTI was created in 2000 to map out the use of technology in rural areas to manage forests for increased product and environmental values in support of local communities. RTI requested the review to gain external input and an evaluation of the program’s sustainability. The review team’s final report praised RTI for its major contributions in providing usable, cutting-edge technology to rural forest managers. The report noted both that these technologies would not have been available under conventional outreach structures, as well as their potential applications to regional and national constituencies.

Highlights

The Demers Forestry Issues Series on March 8, “Wildlife in the West,” featured College faculty Jim Agew, Bruce Lappe, David Prentice, and Scott Scannell. The three-hour program for community, industry, and public speakers represented public and tribal land managers and the Wilderness Society speaking on the complex issues of managing the threat of catastrophic wildfires in the inland west. The program was attended by 85 invited guests from a wide spectrum of natural resource stakeholders. It is available for viewing on UWTV and on streaming video from the UWTV website.

The College and the UW Alumni Association co-sponsored the lecture series, “Sustaining Our Northwest: When Humans and Nature Collide,” in February and March. The well-attended series featured College faculty Jerry Franklin, Steve West, and John Macaffa speaking on the challenges of forest stewardship in the 21st century, preserving wildlife habitat for bats in the region’s managed forests, and balancing human needs and desires with ecological functions in urbanizing landscapes.

Alumni News

David Hagawa (’77) was appointed to Washington State’s Forestry Practice Board. Established in 1975 by the State Legislature, the board develops rules to protect the state’s natural resources while maintaining a viable timber industry.

Professor John Stuart (’83) was appointed chair of the Department of Forestry and Watershed Management at Humboldt State University in Arcata, California.

William Bennett (’70), employed by the College’s Stand Management Cooperative, was named Chair of the Faculty as the College restructured from two academic divisions to a single faculty body. Professor Rick Gustafson serves as Faculty Chair.

Changes in the College’s graduate programs designed to increase efficiency and ensure that all students share knowledge from core subject areas were formally approved in Winter Quarter. A new fifth-year, professional non-thesis master’s program, Master of Environmental Horticulture, was also approved. Another new fifth-year professional non-thesis master’s program, Master of Forestry, is being reviewed for approval in Autumn 2004.

The Rural Technology Initiative was a cooperative in the USDA’s Forest Service, the Western Regional National Association of Professional Forestry Schools and Colleges (NAPFSC), of which he is chair.

Professor David Briggs, Director of the Stand Management Cooperative, was named Vice-Chair of the Faculty as the College restructured from two academic divisions to a single faculty body. Professor Rick Gustafson serves as Faculty Chair.

Dean Bruce Bare held an April meeting on the UW campus of the Western Regional National Association of Professional Forestry Schools and Colleges (NAPFSC), of which he is chair.

Dave Peterson, Professor of Forest Ecology and Research Forester, USDA Forest Service, is a principal investigator on a grant from the USGS Global Change Research Program. The grant will provide $130,000 yearly for five years to fund a new effort, the Western Mountain Initiative. Peterson will have administrative oversight of the synthesis and integration of research on the effects of climate variability and change on natural resources in mountain ecosystems.

Dean Powell, long-time UW employee (33 years) retired from his position as plant technician at the Washington Park Arboretum (28 years) in February.

Visiting Scholar Program with Taiwan University

Assistant Professor Sarah Reichard is the first faculty member in the College of Agriculture and Natural Resources at National Chung Hsing University in Taichung, Taiwan. Says Reichard, “Over 100 students registered for the intensive short course in conservation biology that I helped to teach. The course focused on conservation messages using examples from invasion biology, rain-forest studies, and ecological restoration. In addition, several students expressed an interest in participating in a secondyear course in evolutionary biology, gave a seminar to the forestry department, and presented a lecture on biological invasions to Taiwan Forestry Research Institute scientists in Taipei. Working with students was the best part of the experience. I found them to be respectful and inquisitive — with lots of questions and some discussions outside of class about conservation and educational opportunities in the U.S. But it was not all work! My gracious host, Iraiel Jiang, and his graduate students Su-jui, Dierke, and Lisa, made sure that I visited the nearby national seed storage facility (which is impressive!), a mangrove forest, and an historic part of Taiwan. We also had excursions to Taroko (yes, they are there too) and to local restaurants. On my last day in Taiwan, a couple of scientists took me to visit a long-term ecological research station in northern Taiwan, the Fu Shan Experimental Forest, which is simply breathtakingly beautiful! I have seen, the range of temperate Asian trees in the station’s forest and arborist was astounding and several sightings of tiny barking deer were an added bonus.

I learned from the experience: Taiwanese students are very serious scholars but like to have fun too, the food was wonderful (real bamboo shoots are nothing like those rubbery things that come in a can here), and to drive in Taiwan must be completely insane or have reigned yourself to the fates!”

Volunteer Form

The Arbor Day Fair, a wildly successful event conceived by the College of Forest Resources Alumni Association (CFRAA) and jointly sponsored by the College and CFRAA brings over 2,000 elementary school children to a hands-on learning experience for the approximately 700 children and support are essential to its success.

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Rainforests at the Crossroads
JASON Project in Panama Inspires Students to Study Science

The JASON Foundation, working with NASA, the UW and other universities, and the Smithsonian Tropical Research Institute (STRI), recently brought discovery into the classroom with the program “Rainforests at the Crossroads.” JASON, founded by Robert Ballard, the scientist who discovered the wreck of the RMS Titanic, is named in the spirit of the myth of Jason and the Argonauts. It enables students and teachers to do fieldwork from the classroom, giving them an opportunity to pursue the “Golden Fleece” by learning through adventure and discovery. JASON visits a different location each year — this winter, middle school students, teachers, and scientists explored rainforests on Panama’s Barro Colorado Island while JASON’s worldwide network of classrooms participated via televised broadcasts and interactive technology.

Stephanie Bohlman, Ph.D. candidate in the College and a NASA Earth System Science Fellow, is a JASON guest researcher who provided scientific oversight for the field broadcasts, and with NASA researchers and educators wrote on-line activity for the project. Bohlman was one of the researchers hosting two weeks of live broadcasts from the field site, working on camera with students to answer questions and coordinate student input from interactive sites in the U.S. An estimated 1.6 million people worldwide watched the broadcasts. College alumnus Mark Wahlne (’98), Director of Yale University’s Native Species Reforestation Project at STRI and a JASON host researcher, helped students learn about reforestation in Panama.

Through her dissertation research on Barro Colorado Island and the Parque Metropolitano canopy crane near Panama City, Bohlman is studying how remote sensing technology can be used to determine carbon uptake and map tropical forest species. Many researchers are looking at how uptake and storage of carbon by forest ecosystems relate to global warming and climate change. Current models of carbon uptake are based on relationships between environmental and biological phenomena developed in simple crop, grassland, or temperate ecosystems, which are then applied to the more complex ecosystems of tropical forests. Working with Professor Tom Hinckley, Bohlman is testing these relationships in tropical forests for the first time. Results show that important modifications are needed to account for tropical forests’ multi-layered canopies and complex phenological patterns. Unique tools, including a helicopter-mounted multi-spectral camera and canopy access via the canopy crane, allowed her to look at field and remote sensing data at the same spatial scale. Collaborating with College alumnus Matthew Clark (’98), she has also shown that mapping some tropical forest canopy species — important in biodiversity and conservation studies — is possible using remote sensing. After receiving her dissertation, Bohlman will research forest dynamics and fragmentation in Manaus, Brazil with STRI.

Upcoming Events Calendar

April 11-13 Introduction to ArcView and the Use of GIS Workshop, C. L. Pack Experimental Forest, Eatonville, WA
May 12 Arbor Day Fair, UW campus
May 15 Earth Day, C. L. Pack Experimental Forest, Eatonville, WA
June 2-3 Washington Pulp and Paper Foundation annual banquet, UW Campus
June 5 Denman Forestry Issues Series, “Invasive Species, UW Campus
June 11 CFR Graduation, UW campus
June 20-22 Global Positioning System Workshop, C. L. Pack Experimental Forest, Eatonville, WA

PNW CESU Expands Membership and Attracts Research

The Pacific Northwest Cooperative Ecosystems Study Unit (PNW CESU), a cooperative venture among academic institutions, a state agency, a science commission, and federal land management/natural resource research organizations, was established at the College in October 2000 — the UW serves as host institution. Management and stewardship of the nation’s public lands and waters requires skillful public service supported by sound science and responsive technical assistance. The goal of the National CESU Network connecting 17 bio-geographic regions, each served by a distinct CESU, is to improve the scientific base for managing federal lands by providing resource managers with high-quality scientific research, technical assistance, and education.

Since the establishment of the PNW CESU, more than 100 projects totaling over $6 million have been funded through its Cooperative Agreement. Projects range from historic preservation projects on National Park cultural sites to an analysis of black bear distribution patterns in Olympic National Park.

PNW CESU co-leaders Professor Gordon Bradley and NPS Research Coordinator Darryl Johnson anticipate steady growth of the cooperative’s research funding as well as greater opportunities to facilitate interdisciplinary and interagency cooperation. In the past year alone project funds totaled over $2.75 million, a 30 percent increase over the previous year’s activity. 2003 events included a meeting of U.S. Forest Service superintendents with National Park Service superintendents to discuss social science research and the Anthropogenic Northwest Prairies Conference held at the UW and drawing participants from 13 state and federal agencies. The upcoming 2004 PNW CESU Annual Meeting, planned for fall, will focus on the theme of “Human Dimensions in Public Land Management.”

Researchers on PNW-CESU project in Alaska studying human use of public lands for fishing and hunting.