

HSU Academic Department Report – Forestry & Wildland Resources September 30, 2008 - Program Prioritization

The departmental reports provide context for the academic programs administered by the department, and will be considered in conjunction with the program reports for final program ranking. This report is to be completed by September 30. Use 12-point Times New Roman with 1.5 line spacing.

I. Departmental History, Mission, and Goals

Insert the department mission statement and the department goals. In addition, provide a brief (2 page limit) overview of the departmental history with emphasis on the last 5 years.

History

The HSU Forestry program was founded in 1953, and was the first forestry program in the CSU. The forestry program first received accreditation from the Society of American Foresters in October 1979. The program boasts nearly 2,500 alumni, scattered on the ground and in leadership positions throughout forest industry, state and federal agencies, NGOs, including many university professors. The range program was authorized by the CSU in 1967 and began as a degree program (Range Management) during the Fall 1968 quarter. HSU's Rangeland Resources program continues to be the only university in the CSU system and California to offer a baccalaureate in range management (rangeland resource science). In Fall 1996 all soils courses are changed from an "NR" prefix to a "SOIL" prefix and in Fall 1998 the Wildland Soils option in the RRS major was approved by the university. FTES and FTEF accounting for soils courses were moved onto the RRS ledger from the NRPI/NR ledger. The department was renamed to Rangeland Resources and Wildland Soils beginning AY 1998-1999.

In the past five years, the program has seen tremendous change in staffing. In AY 2004/2005, the Forestry & Watershed Management and the Rangeland Resources & Wildland Soils programs were combined and Dr. Fulgham became the Chair in January 2005. In AY 2007/2008 they were officially merged into the Department of Forestry & Wildland Resources. Since AY 2003/2004, 8 faculty have retired and four others have departed. In Forestry & Watershed Management, long-time faculty Allen, Bicknell, Bigg, Sin, Sise, and Thornburgh retired; faculty members Keyes, Matzka, Perry, and Robison departed HSU within 6 years of their arrival. Five new faculty have been hired over the last five year period: Berrill, Edgar, Han, Stubblefield, and Varner. Professor Sillett was reassigned to the department in AY 2007/2008. In Rangeland Resources & Wildland Soils, Hauxwell retired (AY 2006/2007) and has not been replaced.

The graduate program of the department is sequestered within the Natural Resources MS program, with options in Forestry, Rangeland Resources, and Watershed Management. The graduate programs have produced many theses, peer-reviewed publications, and relevant reports that have improved the

understanding and management of the region's natural resources. Significant levels (c. \$3,466,960.00) of gross revenues, including external grants and contracts, have come to the department over the last three academic years. Additionally, the FWR Department boasts the only endowed chair in HSU's history with the Kenneth L. Fisher Chair of Redwood Forest Ecology, held by Professor Steve Sillett.

Mission

The Department of Forestry and Wildland Resources has the responsibility to meet the broad educational needs of individuals and the specific needs of the forestry, rangeland resources, and wildland soils professions. Additionally, the mission of the of the programs is to provide an undergraduate and graduate educational environment that fosters and develops the capability to analyze, understand, manage and improve the forestland, rangeland and wildland soil resources. It is also incumbent that our programs meet the societal needs for an educated workforce and citizenry, the continuing educational needs of practicing foresters, hydrologists, rangeland specialists, soils specialists, and the needs of faculty for development and improvement of teaching effectiveness.

Goals

Six goals have been set forth by the Department of Forestry & Wildland Resources. These are:

1. To attract and retain well-qualified and motivated students;
2. To maintain relevancy and excellence in undergraduate education and to instill recognition for the need for interdisciplinary cooperation;
3. To educate students to be thinking, responsible citizens, well-prepared to be leaders in their communities and profession;
4. To produce graduates who possess the technical knowledge and professional qualities needed by a rapidly changing society;
5. To provide continuing education for professionals in the field of forestry, rangeland resources, and wildland soils; and
6. To provide for faculty development and increased teaching effectiveness through active involvement in research, professional activities, and continuing education.

II. Departmental Faculty and Staff

Forestry & Wildland Resources Dept Instructors -- AY Average Count of Appointments						
facpos_FWM report generated: 22-FEB-08						
Appt Category	AY 02/03	AY 03/04	AY 04/05	AY 05/06	AY 06/07	AY 07/08
Lecturer	1	2	2	1	3	6
Assist Prof	4	4	3	4	4	3
Assoc Prof	0	0	0	0	1	1
Professor	6	5	5	5	5	5
Teach Assoc	0	0	0	1	0	1
Volunteer	2	1	2	2	2	1
Total	12	12	11	12	14	16

Forestry & Wildland Resources AY average FTEF (time base totals)						
facpos_FWM report generated: 22-FEB-08						
Appt Category	AY 02/03	AY 03/04	AY 04/05	AY 05/06	AY 06/07	AY 07/08
Lecturer	.10	.44	1.10	.10	.60	1.53
Assist Prof	4.00	4.00	3.00	4.00	4.00	3.00
Assoc Prof	.00	.00	.00	.00	.50	1.00
Professor	6.00	5.00	4.04	4.24	3.40	4.50
Teach Assoc	.00	.00	.00	.07	.00	.20
Volunteer	.34	.13	.30	.10	.07	.02
Total	10.44	9.57	8.44	8.50	8.56	10.25

Forestry & Wildland Resources department release/assigned time						
facpos_FWM report generated: 22-FEB-08						
Assignment Description	AY 02/03	AY 03/04	AY 04/05	AY 05/06	AY 06/07	AY 07/08
New Preparations	.10	.00	.00	.00	.30	.03
Course or Supervision Overload	.00	.00	.00	.00	.08	.10
Instr Experimt Innov/Research	.07	.10	.08	.08	.00	.00
Instr-Related Services	.22	.00	.00	.00	.08	.00
Advising Responsibilities	.10	.00	.00	.00	.00	.00
Dept Chair AY, Leaders/Dir.	.61	.36	.35	.26	.14	.42
Dept Chair - 12mo	.13	.13	.13	.13	.07	.13
Other State Funds	.00	.00	.00	.08	.21	.00
Grant: Academic	.00	.00	.00	.00	.23	.20
Total	1.23	.59	.56	.55	1.10	.88

Personnel (At least .5 FTE)

Name	Position	Description of Specialty and Key Contributions (100 words max)
Pascal Berrill	Assistant Professor	Berrill specializes in silviculture, ecology, physiology, and how these disciplines interact to promote forest management. He teaches FOR 116, FOR 331, FOR 432, and FOR 479. His research focuses on multiage silviculture, tree response to stress/climate change, forest restoration, and silviculture to maximize biomass production/carbon sequestration. Research published in Canadian Journal of Forest Research, Western Journal of Applied Forestry, and New Zealand Journal of Forestry Science among others.
Chris Edgar	Assistant Professor	Edgar specializes in forest mensuration, including evaluation of survey and monitoring designs and techniques that result in better stand assessments. He teaches FOR 100, FOR 210, FOR 311, and FOR 479. His research involves comparisons of forest productivities as well as computer modeling and simulation. Research published in Canadian Journal of Forest Research, Ecological Modelling, and Environmental Monitoring and Assessment, among others.
Larry Fox	Professor (0.5 FTE; FERP)	Fox specializes in landscape ecology and remote sensing. He teaches FOR 216, FOR 506, and NRPI 270. His research aims to enhance understanding of ecological process by examining landscape elements in a regional context. Research published in Fire Ecology, Forest Science, and Natural Areas Journal, among others.
Ken Fulgham	Professor and Chair	Fulgham, Chair of FWR, specializes in rangeland resources. He teaches a wide variety of courses in rangeland resources, emphasizing plant communities and ecology, and in basic natural resources. His research focuses on responses of sagebrush-grass ecosystems to prescribed fire, habitat management for Aleutian Canada Geese, and ecology of Western Juniper. Research published in Madroño, Journal of Range Management, and Journal of Wildlife Research, among others. He is very active in professional organizations, campus committees, and department outreach.
Han-Sup Han	Associate Professor	Han specializes in forest operations and engineering. He teaches FOR 315, FOR 343, FOR 350, FOR 444, and FOR 479. His research focuses on collection and transportation of woody biomass for energy, economics of forest operations, assessment of environmental impacts of forest operations, and forest transportation systems. Research published in Forest Products Journal, International Journal of Forest Engineering, Forest Ecology and Management, and Western Journal of Applied Forestry, among others.
Susan Marshall	Professor	Marshall specializes in wildland soils. She teaches SOIL 260, SOIL 360, SOIL 465, SOIL 467, RRS 306 RRS 430, RRS/SOIL 485, and NRPI 210. Her research interests include surface properties of soils, belowground plant competition, and implications of soil properties for plant production. Research published in Earth Surface Processes and Landforms.
George Pease	Stockroom Manager	Pease supports all teaching and research activities of the department. He operates the stockroom daily, prepares field trip and laboratory supplies and equipment for students, orders equipment and supplies as needed, and manufactures or repairs field and laboratory equipment.

Stephen Sillett	Professor	Sillett holds the Kenneth L. Fisher Chair in Redwood Forest Ecology. His research focuses on old-growth forest canopies and the biology of the five tallest tree species: coast redwood, Douglas-fir, Sitka spruce, giant sequoia, and Australian mountain-ash. Sillett was recognized as HSU Scholar of the Year. Starting Spring 2010, he will teach FOR 331. Research published in <i>Nature</i> , <i>Ecological Monographs</i> , <i>Tree Physiology</i> , <i>Biotropica</i> , <i>Oecologia</i> , <i>Soil Science Society of America Journal</i> , and <i>Canadian Journal of Forest Research</i> , among others.
Gayleen Smith	ASC	Smith support all teaching and research activities of the department. She is the daily contact for students. She maintains all attendance documents, travel authorization and reimbursement forms, processes faculty evaluations, maintains the department budget and trust records, orders teaching supplies, and provides logistical support for the Chair. Works with the Chair and faculty on scheduling classes for each semester. Maintains announcements for scholarships and employment opportunities. Arranges Spring Awards Banquet and tracks scholarship allocations. Provides logistical support for all travel and field trips. Forestry Alumni Chapter liaison.
John Stuart	Professor	Stuart specializes in dendrology, forest and fire ecology. He teaches FOR 230, FOR 231, FOR 307, and FOR 321. His collaborative research with graduate students focuses on vegetation classification, fire ecology, dendrology, and human impacts on forest ecosystems. Research published in <i>Canadian Journal of Forest Research</i> , <i>Forest Science</i> , <i>Forest Ecology and Management</i> , and <i>Fire Ecology</i> among others. He is co-author of <i>Trees of California</i> (UC Press).
Andrew Stubblefield	Assistant Professor	Stubblefield specializes in hydrology and watershed management. He teaches WSHD 310, WSHD 410, WSHD 485, and WSHD 530. His research focuses on the hydrological processes that link land management, erosion, and sediment transport with water quality. Research published in <i>Hydrological Processes</i> , <i>Catena</i> , and <i>Integrated Environmental Assessment and Management</i> , among others.
Morgan Varner	Assistant Professor	Varner specializes in wildland fire management and ecology. He teaches FOR 116, FOR 321, FOR 323, FOR 422, FOR 423, FOR 424/685, FOR 430/530, and FOR 479. His research focuses on fire management, fuel dynamics, post-fire tree damage, and natural history of managed forests. Varner was recognized as a McCrone Promising Faculty Scholar. Research published in <i>Canadian Journal of Forest Research</i> , <i>Forest Ecology and Management</i> , <i>International Journal of Wildland Fire</i> , and <i>Restoration Ecology</i> , among others.

III. Recruitment and Retention

Describe any specific actions (other than HOP or similar standard efforts) the department has taken to recruit and/or retain students, particularly diversity students and/or students who are underrepresented in your discipline. What have been the results of those actions?

1) Funding to hire a recruiter for students in CNRS came from US Forest Service grant submitted by FWR faculty to meet the court ordered Settlement Agreement for Region 5 (R5) of the US Forest Service to increase the number of Hispanic employees at all levels within R5-California. Faculty have worked with the CNRS recruiter to educate her about the program and career prospects for graduates in forestry. The recruiter's credentials in education and experience from employment with the California Forest Products Commission have been invaluable in talking to young people, their parents and teachers about abundant educational and employment opportunities. Match funding for this multi-year program came from the Office of Enrollment Management and the CNRS Dean's Office. Enrollments have increased across CNRS because of her efforts.

2) Faculty meet with high school and community college student and advisors from institutions such as College of the Redwoods, Reedley College, and Shasta College to show them our facilities and discuss our program. Faculty are active in developing articulation agreements to facilitate transfer. A new website and brochure have been created to better communicate the strengths and uniqueness of our program and career opportunities with prospective students. A "Watershed Management" night held during Fall 2008 and a forestry and wildland resources guest lecture series held during the Spring 2008 will raise the visibility of the undergraduate and graduate programs.

3) There are numerous student clubs and activities, providing opportunities for students to interact with each other and faculty. Examples include: the student chapter of the Society of American Foresters which competes in a SAF National Quiz Bowl competition with other forestry programs; the Logging Sports Team also competes across the West and hosts local events; the student chapter of the Student Association of Fire Ecology which hosts a seminar series; the Range Plant ID Team which competes nationally each year against teams from nearly two dozen North American universities; and, the Range & Soils Club which organizes field trips within the region.

4) Submission of a USDA grant written to support from 10 to 20 new "Wildland Multicultural Scholars." Students wishing to study any option in the Department of Forestry and Wildland Resources will be eligible for this scholarship, and is likely to boost student numbers in the Forest Soils option.

5) Completion for the Forestry program's curriculum change, effective AY 09/10, to where the number of units required for graduation has been reduced while still meeting the requirements to qualify for

federal jobs and meet SAF accreditation goals. This should help recruitment/transfer and retention. The curriculum of the options in Rangeland Resources and Wildland Soils are currently under revision.

6) Two of our faculty members were long-term residents of other countries (New Zealand and South Korea), another is Native American, and the remainder brings tremendous regional, cultural and experiential diversity to the program.

IV. Learning, Curriculum, and Assessment.

List the student learning outcomes for your academic programs. Then for each learning outcome that has been assessed, provide a summary paragraph that includes the methodology and results of the assessment.

The student learning outcomes in our forestry program are aligned with departmental learning goals, and follow guidelines in the Accreditation Handbook of the Society of American Foresters. Our program provides in-depth coverage of forest ecology and biology; protection, measurement, and management of forest resources; and forest resource policy, economics, and administration. Our forestry curriculum fosters analytical and critical reasoning skills, including systematic problem solving and decision-making. Awareness of historical and current issues and policies affecting resource management and conservation is established. The rangeland resources program was originally developed following the criteria established by the Range Science Education Council and the Society for Range Management. Over the years, modifications in the program have paralleled recommendations in these two organizations. In fact, through the participation of HSU RRWS faculty in these professional organizations, curricular changes, such as incorporating natural resource recreation and natural resource economics courses reflect strategies begun at HSU. The Wildland Soils program follows curricular advice from the Soil Science Society of America and the California Forest Soils Council.

The forestry and wildland resources curricula provide a variety of educational experiences including lectures, discussion, computer applications, and individual and group projects in laboratories and field experiences. The purpose of these experiences is to enable students to collaborate, communicate, and apply scientific methodologies necessary to attain an array of beneficial products, services, and conditions derived sustainably from forestlands and rangelands, while protecting the wildland soils and watershed characteristics of these landscapes.

Each of the learning outcomes is evaluated using a combination of diverse methodologies:

1. Periodic review of curriculum by Society of American Foresters' Site Evaluation Team. Findings are communicated to University President and filed in the department office. We are currently accredited having met all curricular and professional standards and are up for review in 2013.

2. Periodic surveys sent to employers and to students help assess how well the curricula prepared graduates in knowledge of specific areas, professional skills, and professional qualities. The survey instruments and results are on file in the department's office.
3. Pass-rate statistics for State of California licensing exams: In the period from 2001 through 2007 HSU, forestry alumni accounted for 55% of new California licensed registered professional foresters. In contrast, Cal Poly accounted for 8% and UC Berkeley accounted for 7%. This is testimony of the quality of our student's preparation. Both RRWS faculty are Certified Rangeland Managers (CRM) within the licensing program and 15% of active CA-CRMs are Humboldt graduates.
4. Review of forestry capstone projects and presentations: all students must complete a capstone project in their final term. A three-person faculty review team assesses each capstone project for depth and breadth of knowledge in the field of forestry. RRWS students complete several terminal courses including a range/ranch plan, senior project, and senior seminar.
5. Annual advisory committee meeting: the committee is made up of professionals from industry, public agencies, and non-governmental organizations. They review our curriculum and give advice on how well it meets the needs of the forestry and wildland resources professions.
6. Annual alumni meeting: association provides feedback on the forestry curriculum and how well it prepares recent graduates for the work place. Alumni input from graduates in the rangeland resources and wildland soils options provides continuing input for curricular changes.
7. Exit interviews of graduating seniors: seeks opinion on preparedness to be a California licensed registered professional forester. Nothing in place for the graduates in the rangeland resources and wildland soils options.
8. Review of alumni employment: the last completed employment outcome survey showed that forestry, rangeland resources, and wildland soils students had the highest percentage of respondents in the natural resource disciplines who found jobs related to their majors (84%). In recent years, the job market has been even stronger. We also collect and display business cards of our alumni indicating the employment success they have enjoyed in their careers.

Results of assessment are interdisciplinary specific learning outcomes are:

1. Understanding of Ecology and Biology: taxonomy and ability to identify forest and rangeland plant species, their distribution, and associated vegetation and wildlife; soil properties and processes, hydrology, water quality, and watershed functions; ecological concepts and principles including the structure and function of forest and rangeland ecosystems, plant and animal communities, competition, diversity, population dynamics,

succession, disturbance, and nutrient cycling; and plant physiology and the effects of climate, fire, pollutants, moisture, nutrients, genetics, insects and diseases on forest and rangeland health and productivity.

2. Ability to Measure Forest, Rangeland, Watershed and Wildland Soil Resources: identify and measure land areas (watershed units) and conduct spatial analysis; design and implement comprehensive inventories of animal, plant, and soil resources that meet specific objectives using appropriate sampling methods and units of measurement; and analysis of inventory data.
3. Ability to Manage Forest Rangeland, Watershed and Wildland Soil Resources: develop and apply land use prescriptions appropriate to management objectives, including methods of establishing and influencing the composition, growth, and quality of forest and rangeland plant communities, and understand the impacts of those prescriptions; analyze the economic, environmental, and social consequences of forest and wildland resource management strategies and decisions; develop management plans with specific multiple objectives and constraints; understanding of the valuation procedures, market forces, processing systems, transportation and harvesting activities that translate human demands for consumable forest and wildland products into the availability of those products and non-consumptive products and services of these working landscapes; and understanding of the administration, ownership, and organization of forest and wildland resources management enterprises.
4. Understanding of Forest and Wildland Resource Policy, Economics, and Administration: forest and range policy and the processes by which it is developed; how federal, state, and local laws and regulations govern the practice of forestry, rangeland, watershed, and wildland soil management; professional ethics, including the SAF Code and SRM Ethics and Code of Conduct, and recognition of the responsibility to adhere to ethical standards in decision making on behalf of clients and the public; integration of technical, financial, human resources, and legal aspects of public and private enterprises.

Students in Forestry and Wildland Resources gain a depth and breadth of knowledge and skills from a unique departmental structure rich in history, complex and important mission, and an active and diverse faculty. Relevant technical and professional qualities and experiences prepare FWR graduates to adapt to the changing needs of society and the natural environment.