

Part I – Agency Profile

Agency Overview

Research mission – investigation into forestry and rangeland resource management problems, forest nursery production, and related areas. Part of the College of Natural Resources, Forest Utilization Research also includes the Rangeland Center with a legislative mandate for interdisciplinary research, education and outreach as suggested by a partner advisory council to fulfill the University’s land grant mission (Idaho Code § 38-715), and the Policy Analysis Group with a legislative mandate to provide objective data and analysis pertinent to natural resource and land-use issues as suggested by an advisory committee of Idaho’s natural resource leaders (Idaho Code § 38-714).

Core Functions/Idaho Code

The duty of the Experiment Station of the University of Idaho’s College of Natural Resources is to institute and conduct investigations and research into the forestry, wildlife and range problems of the lands within the state. Such problems specifically include forest and timber growing, timber products marketing, seed and nursery stock production, game and other wildlife, and forage and rangeland resources. Information resulting from cooperative investigation and research, including continuing inquiry into public policy issues pertinent to resource and land use questions of general interest to the people of Idaho, is to be published and distributed to affected industries and interests. (Idaho Code §§ 38-701, 38-703, 38-706, 38-707, 38-708, 38-709, 38-710, 38-711, 38-714, 38-715)

Revenue and Expenditures:

Revenue	FY 2010	FY 2011	FY 2012	FY 2013
General Fund	<u>\$517,500</u>	<u>\$511,400</u>	<u>\$490,000</u>	<u>\$504,100</u>
Total	\$517,500	\$511,400	\$490,000	\$504,100
Expenditure	FY 2010	FY 2011	FY 2012	FY 2013
Personnel Costs	\$437,700	\$465,244	\$442,430	\$454,800
Operating Expenditures	79,800	48,156	47,570	48,750
Capital Outlay	0	0	0	550
Trustee/Benefit Payments	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	\$517,500	\$511,400	\$490,000	\$504,100

Profile of Cases Managed and/or Key Services Provided:

Cases Managed and/or Key Services Provided	FY 2010	FY 2011	FY2012	FY 2013
Number of Private Landowners Assisted: Pitkin Forest Nursery	1300	1300	1400	1400
Number of Seedling Industry Research Projects: Pitkin Forest Nursery	2	3	3	2
Number of:				
• Research Projects:				
Experimental Forest	8	7	13	11
Policy Analysis Group	6	6	8	7
Pitkin Forest Nursery	10	12	10	10
Rangeland Center	*	2	4	10
• Teaching Projects:				
Experimental Forest	30	21	24	24
Policy Analysis Group	26	20	24	8
Pitkin Forest Nursery	5	5	5	8
Rangeland Center	*	2	9	9
• Service Projects:				
Experimental Forest	2	5	9	9
Policy Analysis Group	14	14	15	16
Pitkin Forest Nursery	15	15	12	15
Rangeland Center	*	2	4	11

* The Rangeland Center was created in FY2011 and authorized in Idaho Code § 38-715 during FY2012.

Performance Highlights:**Experimental Forest:****Highlights:**

Research – 11 research projects were established, including a pre-commercial thinning study in collaboration with Potlatch Corp., a statewide weight-scaling study in collaboration with Idaho Dept. of Lands, and a cable logging safety study.

Education – Classroom involvement included 9 faculty, 12 different class courses, 24 field trips, 20 follow up lab sessions, involving more than 300 students with hands-on experience.

Internships – 9 student interns gained hands-on field experience in timber management, including developing critical thinking and problem-solving skills in the field. Student interns are exposed to a wide array of land management experiences involving multiple resources and the challenge of addressing regulatory policies with scientific information.

Outreach – 9 outreach and engagement activities include school teachers, loggers, professional foresters, non-industrial private forest land owners, and interested Idaho citizens. Hosted activities on a pair of active and completed harvest sites, where multiple objectives are achieved via management activities.

The centerpiece of the University of Idaho Experimental Forest (UIEF) is the 8,247 acres of forest land on Moscow Mountain that are adjacent to both industrial and non-industrial private forest lands surrounded by dry land farming in Latah County. Most of these lands were a gift from Potlatch Corp. in the 1930s. Today all but 450 acres are managed as working forests, balancing education, research, and demonstration with production of timber, clean water, fire hazard mitigation, smoke particulate management, and wildlife and fisheries habitat. The UIEF also manages 398 acres on two parcels in Kootenai County, and has a life estate of 1,649 acres in Valley County that eventually will come under

UIEF management. As noted in the highlights above and details below, these lands provide many research, education and outreach opportunities.

Research conducted on the UIEF in FY2013 included studies by College of Natural Resources faculty, collaborators in the College of Agriculture and Life Sciences, and the USDA Forest Service Rocky Mountain Research Station. During the year Dr. Robert Keefe was hired as Assistant Professor of Forest Operations, and as part of his duties supervises research and management activities on the UIEF, under the direction of the Dean. In FY2013, an existing UIEF outlying building in Princeton, ID was repurposed to create a new laboratory for the study of Forest Operations systems and equipment, focused specifically on forest utilization, harvesting productivity, efficiency, and cost analysis. Two new research projects were undertaken with partners. First, in collaboration with Potlatch Corp., a long-term thinning and overstory removal study evaluating biomass utilization impacts on productivity was established. Second, a statewide study to develop new methods for scaling logs by truck weight was established with the Idaho Dept. of Lands Forest Management Bureau.

Education involving hands-on experience to supplement classroom and laboratory exercises is a significant and valuable supplement to a college education in forest utilization. In FY2013 nine faculty members – College of Natural Resources (7), College of Agriculture and Life Sciences (1), and Washington State University (1) – used the UIEF for at least one field trip session during twelve different courses, ranging from an introductory freshman orientation to senior and graduate level courses demonstrating current research knowledge, land management practices, and using forest operations equipment. In total more than 300 university students visited the UIEF on 24 field trips, with an additional 20 follow-up laboratory sessions in which data collected during field trips were analyzed.

Internship opportunities for students have been offered by the UIEF since 1972. In FY2013 the UIEF employed 13 students and successfully completed the 40th consecutive year of the Student Logging Crew Program without a single injury to report. Staff provide hands-on education as the students help accomplish the management objectives in the UIEF Forest Management Plan, helping the College fulfill the duties of the Experiment Station as described in Idaho Code § 38-703 *et seq.* Student employee interns are required to think critically and solve problems on a daily basis, thus are acquiring job skills beyond just accomplishing the work-at-hand. These work assignments include technology transfer as students learn to employ state-of-the-art equipment and techniques, as well as incorporating their interdisciplinary academic learning in an operational and research forest setting. Upon graduation these student employee interns generally have little trouble finding employment.

The outreach and engagement highlight for FY2013 was the Washington Idaho Forest Owner's Field Day, hosted by the Experimental Forest. This event involved collaboration with WSU Extension, UI Extension, Idaho Dept. of Lands, the Idaho Forest Owners Association, had over 24 forestry and timber harvesting workshops, a Research Tour of current projects on the UIEF, and 150 participants from throughout Idaho. In addition to the Field Day, the UIEF hosted stops and lunch as part of the Idaho Dept. of Lands Stewardship Field Tour, a tour for visiting scientists from the U.S. Dept. of Energy's Idaho National Laboratory, and hosted multiple UI Extension Forestry workshops (Thinning and Pruning, Insects and Disease, and others), as well as one Inland Empire Tree Improvement Cooperative (IETIC) field tour.

Policy Analysis Group:

Highlights:

Economic Contributions – 4 publications featured the role of the forest products manufacturing industry in the Idaho economy, including a fact sheet with replies to questions from the Idaho Legislature's Economic Outlook and Revenue Assessment Committee. The waning economic contribution of federal lands in the State of Idaho and throughout the West was a topic of considerable interest to national policymakers during the year, and based on our previous work posted on the Internet we were invited to testify in March before a U.S. Senate Committee on Energy and Natural Resources oversight hearing on "Keeping the Commitment to Rural Communities."

Director Involvement – 8 invited presentations, including oral and written testimony at a U.S. Senate oversight hearing, as described in the previous paragraph. Other presentations at national meetings during the year included the Society of American Foresters convention and the International Biomass Conference and Exposition. Continued to represent Idaho on the Western Governors' Forest Health Advisory Committee. Continued as chair of the Idaho Strategic Energy Alliance's Forestry/Biomass Task Force and served on its Carbon Issues Task Force. Was appointed to the Society of American Foresters' Biogenic Carbon Response Team. Presented results of analysis at two continuing education events conducted by the Idaho Forest Products Commission, and in February served as master of ceremonies for the luncheon information session during Forestry Day at the Legislature.

Publications – 16 publications, including four mentioned above with estimates of the economic contribution of the state's natural resource-based industries. Other publications during FY 2013 focused on a variety of natural resource policy issues, including wildland fire management, sage-grouse conservation, wood bioenergy economics and policy, regulation of greenhouse gas emissions from wood bioenergy, oil and gas exploration and development policy in Idaho, and regulation of forest roads under the federal Clean Water Act.

The Policy Analysis Group continues to meet its legislative mandate to provide objective data and analysis on natural resource and land-use issues of concern to Idaho Citizens. These issues are suggested and prioritized by an Advisory Committee comprised of natural resource leaders in the state, as per our enabling legislation. As analyses of current issues are completed they are replaced by others suggested by the Advisory Committee. Our website was redesigned this year to improve access to publications and to provide easy access to presentation materials (www.uidaho.edu/cnr/pag). In addition to research and outreach duties described in our enabling legislation, the director advised eight Master of Natural Resources students (four completed during the year and were replaced by four others), served on three graduate student committees, and chaired the search committee for the Head of the Forest, Rangeland and Fire Sciences Department.

Pitkin Forest Nursery:

Highlights:

Research – Improve the quality of plant material available for reforestation and restoration throughout Idaho. Working with forest industry and private landowners, studies are designed and maintained with the objectives of improving tree seedling cost effectiveness throughout the establishment period. Developing and refining plant propagation protocols for use in Idaho's nursery industry, including difficult-to-grow species such as whitebark pine and big leaf maple.

Education – Supported 6 graduate and undergraduate students through research at the Pitkin Forest Nursery on a variety of issues including stocktype selection problems to help balance forest productivity with reforestation costs, broadening our understanding of sagebrush establishment in a restoration context, and the effects of animal browse on regenerating forests. These projects build on Idaho's reputation as a leader in reforestation practices and help improve our restoration of degraded forests and rangelands.

Outreach – Conducted several workshops and training sessions aimed at improving forest management practices in Idaho, including the Inland Empire Reforestation Council and the Intermountain Container Seedling Growers Association. Activities for children, land management professionals and laypersons provide further instruction and education opportunities.

Teaching – Provided research and teaching facility for several UI courses which require hands-on nursery experience. This provides experience which is sought by forest tree seedling nurseries throughout the United States.

Programmatic Growth – In FY 2013, we received a \$3.3 million dollar gift to support activities in teaching, research, and outreach relevant to nursery production. In addition this will include infrastructure upgrades at the Pitkin Forest Nursery.

The Pitkin Forest Nursery continues to actively engage with Idaho landowners, natural resource industries, and citizens. An ever-popular seedling growing program in partnership with the Idaho Forest Products Commission was documented in a web-clip for promoting the University of Idaho and Idaho's Forest Industry. Ongoing research into improved forest management practices included studying the effects of stocktype (the method of production of nursery stock for reforestation and restoration) selection on seedling development. This research topic will provide information and decision support across the state that is anticipated to streamline nursery production practices with the site-specific reforestation needs; a second layer of complexity (managing competing vegetation in the field) will further develop the utility of this information for Idaho. Similar research with rangeland species is also underway. An additional study on seed germination will allow for field foresters to better understand the opportunities for natural regeneration of stands following timber harvesting. In FY2013, six graduate and undergraduate students were working towards degrees through research conducted at the nursery, and many other students are using the facilities at the Pitkin Forest Nursery as a component of their graduate research on forest nutrition and soil management, fire modeling, and post-fire regeneration. Private donors, working with the University of Idaho and Idaho's forest industry, have partnered to construct a new, state of the art classroom featuring Idaho forest products. This will serve as the epicenter for teaching students and community members about reforestation, nurseries, and natural resources in general.

Through actively seeking to be a recognized leader in seedling research and technology transfer, we partnered extensively to have our facility serve as the base of training for American and International Students. Activities for children, land management professionals, and laypersons have helped increase understanding of the importance of forestry and natural resource management in Idaho. For example, in March our organization again planned the Inland Empire Reforestation Council (~200 attendees, Coeur d'Alene). In February, we co-organized an international workshop on managing the genetic base of future forests (Portland, OR). On the teaching side, several University of Idaho courses used the nursery facilities for hands-on education, where students are exposed to the intricacies associated with seed germination, fertilizing, and irrigation. Forest tree seedling nurseries throughout the United States are seeking graduates with experience such as that gained at the Pitkin Forest Nursery, with a high demand expected to continue as we are best suited to replace a retiring workforce.

Rangeland Center:

Highlights:

Research – 10 research projects can be specifically tied to the collaborative efforts of the Rangeland Center. Researchers in the Rangeland Center were also involved in about 75 related research projects that contribute to our understanding of rangelands and the communities that rely on them.

Teaching – 9 university courses taught by 7 faculty members are directly related to rangeland ecology and management research projects of the Rangeland Center.

Service – 11 service and outreach projects were conducted by the Rangeland Center in FY2013. Two projects provided service to conduct rangeland monitoring by student teams for ranchers and land management agencies. In addition, 9 workshops, symposia, or field tours were conducted by Rangeland Center members to provide educational opportunities for teachers, ranchers, and rangeland professionals.

Rangelands are vast natural landscapes that cover nearly half of Idaho. Rangelands account for over 26 million acres in Idaho (48%). Our ability to serve current and future generations of Idaho citizens will be influenced by our understanding of rangelands because these lands are vital to the ecological and economic health of Idaho. The innovative design of the Rangeland Center promotes active partnerships

with individuals, organizations and communities who work and live on the vast landscapes known as rangelands. The Rangeland Center is a group of 24 researchers and outreach specialists in the College of Natural Resources and the College of Agriculture and Life Sciences. Our expertise covers several disciplines that affect rangeland management and conservation including grazing, rangeland ecology, entomology, soil science, economics, rural sociology, fish and wildlife resources, invasive plants, forage production, animal science, wildland fire, restoration, and the use of spatial technologies to understand rangelands. Our research and outreach efforts are aimed at creating science and improving rangeland problems.

During FY 2013, the Rangeland Center initiated a long-term research project in collaboration with the Idaho Dept. of Fish and Game, the Bureau of Land Management (BLM), and others to examine the effects of spring grazing on sage-grouse habitat and nesting success. Several research and outreach projects focused on the effects of grazing on wildland fuels and sagebrush community characteristics. We continue collaborative efforts to assess the effects of livestock impacts on slickspot peppergrass (an endangered plant) and the relationship between livestock grazing and the abundance and diversity of insects that provide food for sage-grouse chicks. Four field teams of students worked on a monitoring project for ranchers on BLM allotments and a state-wide project to assess rangelands as part of the National Resource Inventory program directed by the U.S. Dept. of Agriculture's Natural Resources Conservation Service. The Rangeland Center also worked collaboratively with the Owyhee Initiative Science Center and the University of Idaho Library to create a new on-line open-access journal (The Journal of Rangeland Applications) that will provide scientific synthesis articles aimed at supporting well-informed land management decisions.

Several members of the Rangeland Center are involved in teaching university courses that focus on rangeland ecology and management. Five of 9 rangeland courses include extensive field trips where students engage in rangeland examinations and interact with land managers. Four rangeland courses are offered in an on-line format and are accessible to students and professionals who are unable to attend courses delivered only on campus. The Rangeland Principles course (REM 151) was also offered in cooperation with 6 Idaho high school teachers as a dual credit course in which high school student simultaneously gain high school and college credit. Rangeland Center members also created and participated in continuing education venues including the Intermountain Range Livestock Symposium and local workshops and field tours.

Service and outreach projects in the Rangeland Center this year include development of the Range Science Information System (www.rangescience.info) which provides ready access to scientific research papers for ranchers and land managers. We also worked with high school Future Farmers of America (FFA) programs to conduct the Idaho FFA Rangeland Assessment Career Development Event for high school students in Idaho and the Western National Rangeland Assessment event for high school students in Idaho, Nevada, and Utah. A summer workshop was also conducted for land owners and managers focused on plant identification and monitoring.

Part II – Performance Measures

Performance Measure	FY 2010	FY 2011	FY2012	FY2013	Bench- mark
Number of New Research Projects Per Year:					
Experimental Forest	5	5	10	11	4
Policy Analysis Group	2	1	2	4	2
Pitkin Forest Nursery	5	8	5	5	5
Rangeland Center	*	2	3	3	2
Goal 2, Objective A, Strategy 1, 2, 3 Goal 3, Objective A, Strategy 2					
Number of Research Studies Completed/Published Per Year:					
Experimental Forest	2	3	3	4	4
Policy Analysis Group	2	1	3	2	2
Pitkin Forest Nursery	8	8	5	5	5
Rangeland Center	*	0	1	2	2
Goal 3, Objective A, Strategy 1					
Number of Publications:					
Experimental Forest	2	3	3	4	3
Policy Analysis Group	14	14	15	16	10
Pitkin Forest Nursery	7	10	12	12	10
Rangeland Center	*	2	8	5	8
Goal 1, Objective B, Strategy 1					
Number of Workshops Conducted:					
Experimental Forest	4	9	6	10 [†]	12
Goal 3, Objective A, Strategy 1					
Policy Analysis Group	26	20	24	8	12
Goal 1, Objective B, Strategy 2					
Pitkin Forest Nursery	20	20	20	22	20
Goal 1, Objective A, Strategy 2					
Goal 3, Objective A, Strategy 2	*	2	2	5	2
Rangeland Center					
Goal 1, Objective A, Strategy 2					

* The Rangeland Center was initiated in FY2011; its benchmarks were established during FY2012.

† Includes Forest Owner's Field Day, counted as a single workshop, with 23 presenters doing independent, hands-on workshops on horse logging, portable sawmilling, log scaling, and many others.

For More Information Contact

Kurt Pregitzer, Dean and Thomas Reveley Professor
 College of Natural Resources
 University of Idaho
 875 Perimeter Drive MS 1138
 Moscow, ID 83844-1138
 Phone: (208) 885-6442 E-mail: kpregitzer@uidaho.edu
 Website: www.uidaho.edu/cnr