



OREGON

FOREST SERVICE RESEARCH AND DEVELOPMENT

STATE FUNDING HISTORY	Enacted FY 2003 (\$)	Enacted FY 2004 (\$)	Pres. Budg. FY 2005 (\$)
CORVALLIS			
PNW-4163 Resource Mgt & Productivity	1,489,000	1,331,000	1,381,000
PNW-4166 Focused Science Delivery	598,000	254,000	254,000
PNW-4261 Aquatic and Land Interactions	1,302,000	1,057,000	1,257,000
PNW-4362 Ecosystem Processes	3,535,000	3,812,000	4,112,000
PNW-4577 Managing Disturb. Regimes	1,809,000	1,857,000	1,857,000
PNW-4865 Human & Natural Res. Interact.	675,000	640,000	772,000
PNW-4XXX Communications & Applications	0	344,000	344,000
CORVALLIS TOTAL	9,408,000	9,295,000	9,977,000
La GRANDE			
PNW-4577 Managing Disturb. Regimes	2,378,000	2,418,000	2,418,000
PNW-4XXX Communications & Applications	0	87,000	87,000
La GRANDE TOTAL	2,378,000	2,505,000	2,505,000
PORTLAND			
PNW-Station Director's Office	0	-57,000	178,000
PNW-4865 Human & Natural Res. Interactions	2,225,000	2,083,000	1,951,000
PNW-4869 Forest Inventory and Analysis	5,959,000	8,295,000	8,295,000
PNW-4163 Resource Mgt & Productivity	745,000	699,000	699,000
PNW-4166 Focused Science Delivery	1,577,000	1,548,000	1,548,000
PNW-4362 Ecosystem Processes	303,000	154,000	154,000
PNW-4XXX Communications & Applications	0	377,000	377,000
PORTLAND TOTAL	10,809,000	13,099,000	13,202,000
OREGON TOTAL	22,595,000	24,899,000	25,684,000

RESEARCH & DEVELOPMENT, a division of the USDA Forest Service (FS R&D), strives to be the "go to" organization for information and solutions to sustain forests and rangelands and the values they provide people. FS R&D has the flexibility to address today's issues effectively and to respond to tomorrow's needs. Among the world's leaders in forest conservation research,

scientists contribute to the stewardship of land, real property and society by providing research results that help create jobs and affordable homes, and improve the health of trees, forests and forest ecosystems. Innovative research products permit the Forest Service and other public and private land managers to monitor and manage forest responses to environmental change, contributing

significantly to the sustainability of the nation's forests and rangelands and improving human health.

FS R&D operates six research stations, the Forest Products Laboratory, and the International Institute of Tropical Forestry in Puerto Rico. It employs over 500 scientists and hundreds of technical and support personnel at 67 field sites throughout the nation. The FY 2005 President's Budget includes \$280,654,000 for Forest and Rangeland Research.

The **Pacific Northwest Research Station**, (<http://www.fs.fed.us/PNW/>), headquartered in Portland, Oregon, maintains research and development programs located in Oregon, Washington, and Alaska. The FY 2005 President's Budget is \$43,435,000 for the Pacific Northwest Research Station.

CORVALLIS

PNW-4163, Resource Management and Productivity. Research in Corvallis focuses on conducting basic and applied biological research, in collaboration with university scientists and other partners, providing critical information to federal, state, and private land managers on sustainable forest management and native plant conservation with focus on the biology and culture of forest plants, and plant genetics.

PNW-4166, Focused Science Delivery. The program is responsible for synthesizing existing knowledge across disciplinary areas and spatial scales specifically to proactively inform policy and decision-making processes. Current research focuses on a range of PNW priorities and issues

including Sustainable Management Strategies, Sustainable Wood Production, Reducing Fire Risk to People and Resources, Recreation and Tourism, and Biodiversity Strategies.

PNW-4261, Aquatic and Land Interactions. Research focuses on long-term and large-scale relations between aquatic resources and watershed and processes within the range of the northern spotted owl.

PNW-4362, Ecosystem Processes. Research is focused on: (1) fundamental processes of forest development and productivity; (2) factors contributing to ecosystem sustainability; and (3) relationships of land management to stream and watershed processes.

PNW-4577, Managing Disturbance Regimes. Researchers in Corvallis are developing insect attractants and dispersing agents as management tools to protect forests, and evaluating the interactive effects of insects and tree pathogens with prescribed fire, and the resulting vegetation and forest composition. Research is also investigating the implications of potential climate change scenarios on regional, national and global resources; relationships between climate change and wildfire; and seasonal wildfire prediction based on climatic factors.

PNW-4865, Human and Natural Resources Interactions. The program addresses emerging questions of land use changes; the international context for markets and policies; the role of institutions in implementing sustainable forest management; and conducts interdisciplinary work

to address the interaction of economic and ecological concepts.

PNW-4XXX, Communications and Application Program. Our new Communications and Application Program will meet the changing communication expectations of external and internal customers while giving station products high visibility.

La GRANDE

PNW-4577, Managing Disturbance Regimes. Research is focused on conducting integrated research aimed at options to manage disturbance regimes to restore and enhance forest and rangeland ecosystem health. Current research focuses on eastside silviculture, the management and role of fire in interior ecosystems, forest pathology and entomology, wildlife ecology and management, and a major new emphasis on invasive plant species. Also, the Starkey Project is one of the most comprehensive field research projects ever attempted. Studies examine key questions about elk, timber, cattle, deer and recreation uses on National Forests.

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PORTLAND

PNW-4865, Human and Natural Resources Interactions. Current efforts in Portland include: (1) development and testing of various approaches to estimating measures for community capacity; and (2) research on the financial and utilization potential (considering both timber and non-timber products) of prospective land management (at both stand and landscape scales) activities.

PNW-4362, Ecosystem Processes. Research is focused on: (1) fundamental processes of forest development and productivity; (2) factors contributing to ecosystem sustainability; and (3) relationships of land management to stream and watershed processes.

PNW-4869, Forest Inventory and Analysis. This program conducts multi-resource inventories of renewable natural resources of the forest lands of the Pacific Coast States of Oregon, Washington, California, and Hawaii, which includes: (1) collecting information on current status, condition, extent of forest ecosystems, estimating use and productivity, and assessing past, current, and future trends; (2) producing state evaluations and reports, regional analyses, assessments, and studies of critical issues; (3) analyzing renewable resource use and forest industry production; and (4) developing resource inventory techniques.

PNW-4163, Resource Management and Productivity. Researchers conduct basic and

applied biological research in collaboration with university scientists and other partners providing critical information to federal, state, and private land managers on sustainable forest management and native plant conservation.

PNW-4166, Focused Science Delivery. The program is responsible for synthesizing existing knowledge across disciplinary areas and spatial scales specifically to proactively inform policy and decision-making processes. Current research focuses on a range of PNW priorities and issues including Sustainable Management Strategies, Sustainable Wood Production, Reducing Fire Risk to People and Resources, Recreation and Tourism, and Biodiversity Strategies.

PNW-4XXX, Communications and Application Program. Our new Communications and Application Program will meet the changing communication expectations of external and internal customers while giving station products high visibility.

FIRE RESEARCH IN OREGON SUPPORTS THE NATIONAL FIRE PLAN. National Fire Plan funding continues the long tradition of Forest Service Research and Development building and leading federal, State, and local partnerships (the guiding principle of the 10 year Comprehensive Strategy) to develop and deliver the scientific foundation of modern management practices. The PNW will increase work to apply fire behavior and prediction models to fuels treatment decision making by developing tools for use by land managers to improve effectiveness of fuel treatments.

FY 2005 PROGRAM CHANGES:

- **Healthy watersheds:** The PNW Research Station will focus on developing new planning or evaluation tools to help land managers restore aquatic and riparian ecosystems using cost effective strategies to achieve aquatic and riparian management goals while reducing trade-offs with other resource use and values.
- **Assess role of riparian buffers during wildfires.** It is unclear what roles riparian buffer zones play during wild land fires—a conduit for fire or a firebreak. PNW will assess current practices within riparian areas and recent fire behavior in these areas for a better understanding of the benefits and tradeoffs of riparian management actions to provide guidance for future management decisions in these areas.
- **Understand effects of climate and land use changes on water quantity and quality.** Changes in climate and land use occurring in the western United States impact water quantity and quality. Without a better understanding of the interaction and impacts from climate change and shifting uses of land, planners cannot effectively work to mitigate the effects on water resources. PNW will increase efforts to assess the impacts of changes in climate and land use on watersheds capability to clean water, including economic impacts.
- **Science-based Technology Transfer.** Forest Service Research and Development will lead an Agency-wide effort to optimize the delivery and practical use of research findings. This is essential to successful implementation of Forest Service priorities, including the President's Healthy Forest Initiative. Opportunities have

been identified that leverage current science and technology applications efforts in healthy forests applied science, watershed management, invasive species, hazardous fuels utilization and management, and community preparedness. New funds in FY 2005 will be targeted to leading-edge technical assistance on a competitive basis.

SIGNIFICANT RESEARCH PRODUCTS:

- The recent Resources Planning Act forecasts that an increase in wood imports and domestic production will easily meet the needs of US citizens for wood based products, projected to increase by 42% over the next 50 years due to increases in population of 126 million.
- Application of the dynamic MC1 model to the 2003 fires season accurately predicted the location of the B&B complex fire in Oregon and the late-season wildfire disaster in southern California.
- The Blue Sky smoke model became operational in the Northwestern United States and in parts of Arizona and New Mexico in 2003 providing coordination for planning prescribed burning and developing strategies to fight wildfires and warn nearby communities of health risks.
- Scientists provided an easy to use GIS tool to improve decision making in allocating funding to various state and private forestry programs for National Fire Planning fuels reduction projects in 2003, incorporating fuels density, fire risk, community location, etc.
- Forest inventory results provided key information to policy makers and managers in

the Oregon Department of Forestry in developing forest management plans for state forests.

- A new approach to identifying communities in the Northwest Forest Plan area is key to developing and implementing community-level socioeconomic monitoring, now underway in 12 communities and 4 federal forests in Washington, Oregon, and California.
- Application of the BioSum model across the west provided economic evaluation for several biomass utilization projects supplying decision makers with critical information to identify the best proposals for hazardous fuels reduction projects.
- Application of sophisticated DNA analysis unlocks the key for management of fisher populations in Washington, Oregon, and northern California.
- Discovery of the unique foraging preferences of elk, mule deer, and cattle provide managers critical information for developing successful strategies for joint rangeland use by these animals.

SOME CLIENTS/COLLABORATORS:

American Forest and Paper Association
Association of Oregon Counties
Benton County Parks
Boise Cascade
British Columbia Ministry of Forests
Bureau of Land Management
Eastern Oregon University
Environmental Protection Agency
Harvard University
Yale University