



WASHINGTON

FOREST SERVICE RESEARCH AND DEVELOPMENT

STATE FUNDING HISTORY	Enacted FY 2003 (\$)	Enacted FY 2004 (\$)	Pres. Budg. FY 2005 (\$)
OLYMPIA			
PNW-4166-Focused Science Delivery	286,000	497,000	497,000
PNW-4163 Resource Mgmt. & Productivity	2,382,000	2,139,000	2,089,000
PNW-4261 Aquatic and Land Interactions	997,000	905,000	905,000
PNW-4362 Ecosystem Processes	1,977,000	1,898,000	1,898,000
PNW-4XXX Communications & Applications	0	222,000	222,000
OLYMPIA TOTAL	5,642,000	5,661,000	5,611,000
SEATTLE			
PNW-4166 Focused Science Delivery	146,000	0	0
PNW-4865 Human & Natural Res. Interactions	501,000	511,000	511,000
PNW-4577 Managing Disturbance Regimes	595,000	412,000	412,000
PNW-4XXX Communications & Applications	0	31,000	31,000
SEATTLE TOTAL	1,242,000	954,000	954,000
WENATCHEE			
PNW-4577 Managing Disturbance Regimes	1,264,000	1,193,000	1,193,000
PNW-4261 Aquatic and Land Interactions	336,000	440,000	740,000
PNW-4XXX Communications & Applications	0	60,000	60,000
WENATCHEE TOTAL	1,600,000	1,693,000	1,993,000
WASHINGTON TOTAL	8,484,000	8,308,000	8,558,000

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 in Oregon, Washington, and Alaska. The FY 2005 President's Budget is \$43,435,000 for the Pacific Northwest Research Station.

OLYMPIA

PNW-4163, Resource Management and Productivity. Research focuses on evaluating the biological, cultural, mensurational and operational aspects of managing coniferous and mixed species stands using a broad range of silvicultural tools and alternatives. This includes producing high quality wood under longer cutting cycles while also managing for other societal values.

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. Research is focused 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 in Olympia is focused on improving our understanding of the factors controlling the productivity of aquatic ecosystems. Research will be conducted on (1) implementation strategies within the range of the northern spotted owl which emphasize developing cost-effective techniques for aquatic and riparian habitat restoration and management, and (2) the biology and habitat requirements of anadromous salmonids and other important fishes.

PNW-4362, Ecosystem Processes.

Research focuses on the ecology and conservation of threatened and endangered birds and mammals and understanding the interaction of wildlife associated with older forests, trees, and fungi of commercial value to ensure the sustainable production from managed forests. The program also funds, co-manages, and conducts research at the Wind River Canopy Crane Research Facility.

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.

SEATTLE

PNW-4163, Resource Management and Productivity.

Research focuses on developing techniques for measuring and modeling structural and spatial characteristics at the plant, stand- and landscape-levels; tools that integrate research results into development products that allow better planning, visualization (e.g., Envision), evaluation, and monitoring (e.g., LIDAR and IFSAR

applications) of silviculture practices and forest operations.

PNW-4577, Managing Disturbance Regimes. Scientists at the Pacific Wildland Fire Sciences Laboratory in Seattle pursue fundamental and applied research in core fire science and fire effects, including predictions of air quality impacts of fire, fire/weather relationships, ecological effects of fires, and development of technologies and decision support tools for fuels and fire management.

PNW-4865, Human and Natural Resources Interactions. Research focuses on developing methods to understand structural change in rural communities' economies that are dependent on natural resources, developing and testing of social/economic monitoring indicators and the development of typologies and frameworks to integrate social and economic well being with ecosystem conditions.

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.

WENATCHEE

PNW-4261, Aquatic and Land Interactions. The Wenatchee team conducts research to: (1) understand the ecology of aquatic and riparian organisms, community relationships, and their inter-relationship with aquatic, riparian and upland processes, and (2) understand individual and cumulative effects of resource management and

anthropogenic activities on aquatic and riparian habitats and biota.

PNW-4577, Managing Disturbance Regimes. Research is focused on protecting and restoring forest health and productivity, resource sustainability, and biodiversity. Emphasis is on integrating landscape and conventional stand-scale research and management approaches with managing insects, diseases, and fire as natural disturbances. Research on invasive plant species detection and control strategies will also contribute to the Invasive Species Initiative proposed for eastern Washington.

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 WASHINGTON 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. 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 is actively engaged in the development of new planning or evaluation tools to help land managers blend projects designed to restore aquatic and riparian ecosystems and increase cost effectiveness in achieving aquatic and riparian management goals while reducing trade-offs with other resource use and values.
 - **Assess risk to watersheds from wildfire.** Key watersheds are at high risk from catastrophic wildfire. PNW will increase work in developing and applying models with NFS partners to assess risks to watersheds from fire and other large disturbance events and apply effective treatments to protect key water resources, including assessing risk to watersheds from no action and from cumulative effects of actions.
 - **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.
- 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.
- A new approach to identifying communities in the Northwest Forest Plan area is key to developing and implementing community-level socio-economic monitoring, now underway in 12 communities and 4 federal forests in Washington, Oregon, and California.
 - The successful application of Airborne laser scanning systems (LIDAR) to accurately map stream systems and roads under dense forest canopies provides a potential cost savings to developing data for road and harvest planning.
 - The discovery of the role that disturbance plays in maintaining dynamic stream systems is changing how policy makers and managers view current practices to maintain stream productivity.
 - Application of sophisticated DNA analysis unlocks the key for management of fisher populations in Washington, Oregon, and northern California.
 - Discovery of the relationship between climate and historical fires in eastern Washington is the key to developing accurate forecasts of severe or mild fire seasons a year in advance.
 - The BlueSky 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.

SIGNIFICANT RESEARCH PRODUCTS:

- The recent Resources Planning Act forecasts that an increase in wood imports and domestic

SOME CLIENTS/COLLABORATORS:

Central Washington University
Columbia Basin Fish and Wildlife Foundation
Environmental Protection Agency
Humboldt State University
National Oceanic and Atmospheric
Administration, Fisheries
National Research Council
Northwest Power Planning Council
Ohio State University
Oregon State University
PacifiCorps
Simpson Timber
University of Washington
USDI, National Park Service
Washington State Department of Ecology
Washington State Governor's Salmon Recovery
Office
Washington State University
Weyerhaeuser Company

