



Directory for
**Research
Programs**

Pacific Northwest
Research Station

July 2003



Station Mission

Our mission is to generate and communicate scientific knowledge that helps people understand and make informed choices about people, natural resources, and the environment.

The PNW Research Station is one of eight research units in the USDA Forest Service. The research units collectively conduct the most extensive and productive program of integrated forestry research in the world. The PNW Research Station was established in 1925. The Station has its headquarters in Portland, Oregon, and 10 research locations in Alaska, Oregon, and Washington.

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This brochure has been designed to present the research of the Pacific Northwest Research Station. Information about each program is presented on pages 3 through 5 followed by a description of the research at our 10 locations, beginning on page 6. Periodic updates will be published in an effort to keep information on both personnel and research current.

For an index of team leaders and Station leadership team members, see page 32. For a complete directory, see www.fs.fed.us/pnw. Email should be addressed to the **indicated name@fs.fed.us**.

Pacific Northwest Research Station

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Station Programs

Aquatic and Land Interactions

Program Manager: Vacant, Olympia, Washington

Mission: To increase understanding of the effects of natural processes and human activities on interactions between aquatic and terrestrial ecosystems, with emphasis on understanding the effects of land management on watershed processes and associated biota (e.g., salmonids, amphibians) in the Pacific Northwest.

An important element of the program mission is to discover general relations and processes that are not limited to a specific geographic locality. Applications of the research will be most direct within the region where the work was done, but much of the knowledge will be broadly applicable and transferable to other geographic regions and ecosystems.

See: Corvallis, Juneau, Olympia, Wenatchee

Ecosystem Processes

Program Manager: John A. Laurence, Corvallis, Oregon, (541) 750-7357; email: jalaurence

Mission: To improve knowledge about ecosystem processes at multiple scales for the forests of the Pacific Northwest, the Nation, and the globe and to develop approaches for applying this knowledge to protect, use, and enhance forest resources for present and future generations.

See: Corvallis, Fairbanks, Juneau, Olympia

Focused Science Delivery

Program Manager: R. James (Jamie) Barbour, Portland, Oregon, (503) 808-2542; email: jbarbour01

Mission: To develop and communicate science products that synthesize and integrate existing research knowledge across disciplinary areas and spatial or temporal scales, to proactively inform policy and decisionmaking processes.

See: Portland

Forest Inventory and Analysis (FIA)

Program Manager: Susan A. Willits, Portland, Oregon, (503) 808-2066; email: swillits

Mission: To improve the understanding and management of Pacific coast forest and range ecosystems by developing and applying inventory and monitoring technology to maintain comprehensive inventories and assessments of the status, trends, and prospective futures of the region's ecosystems, their use, and their health.

See: Anchorage, Portland

Human and Natural Resources Interactions

Program Manager: Richard W. Haynes, Portland, Oregon, (503) 808-2002; email: rhaynes

Mission: To improve our understanding of the social and economic values as input to and evaluation of resource management decisions.

See: Corvallis, Juneau, Portland, Seattle, Sitka

Managing Disturbance Regimes

Program Manager: Edward J. DePuit, Wenatchee, Washington, (509) 662-4315 ext. 222; email: ejdeput

Mission: To provide new insights and scientific knowledge about the role of disturbance regimes in ecosystems and the degree to which they can be effectively managed to restore and maintain ecosystem integrity and productivity.

See: Anchorage, Corvallis, Juneau, La Grande, Portland, Seattle, Wenatchee

Resource Management and Productivity

Program Manager: Charles E. Peterson, Jr., Portland, Oregon, (503) 808-2026; email: cepeterson

Mission: To increase understanding of the biology and productivity of forest ecosystems and develop management tools and operational systems that enhance production of wood products and other resource values.

See: Corvallis, Juneau, Olympia, Seattle

Research by Location

Anchorage **Forestry Sciences Laboratory**

3301 C Street, Suite 200
Anchorage, AK 99503-3954
Phone: (907) 743-9400
FAX: (907) 743-9482

Programs, Teams, and Current Investigations

Forest Inventory and Analysis

Kevin Dobelbower and **Ray Koleser**, Team Leaders, *Alaska Inventory*, (907) 271-2588; emails: kdobelbower; rkoleser

- Data collection of forest and rangeland resources for Alaska
- Remote sensing applications and integration with field-collected data
- Development and application of quality control

Willem W.S. van Hees, Team Leader, *Alaska Resource Analysis*, (907) 271-2582; email: bvanhees; Researchers: Bert Mead, Beth Schulz

- Comprehensive forest and rangeland resource analyses and assessments
- Analysis of trends and changes in the status, extent, condition, and uses of forest ecosystems
- Development of techniques and methods for statistical inventories

Managing Disturbance Regimes

Rick G. Kelsey, Team Leader, *Behavioral Chemistry and Ecology of Insects and Disease*, (541) 750-7368; email: rkelsey, located in Corvallis, OR; Anchorage contact is **Ed Holsten**, research entomologist, (907) 271-2573; email: eholsten

- Develop insect pheromones as management tools to regulate bark-beetle effects in forest ecosystems of south-central and interior Alaska
- Develop integrative management approaches for insects and related disturbances in Alaska's forests

Corvallis

Forestry Sciences Laboratory

3200 SW Jefferson Way
Corvallis, OR 97331
Phone: (541) 750-7250
FAX: (541) 750-7329

Programs, Teams, and Current Investigations

Aquatic and Land Interactions

Gordon H. Reeves, Team Leader, *Corvallis Aquatic and Land Interactions Team*, (541) 750-7314; email: greeves; Researchers: Deanna Olson, Kelly Burnett

- Understand the effects of land management activities and natural disturbances on aquatic ecosystems at the reach, the watershed, and the landscape scales
- Develop monitoring plans and protocols for fish habitat and populations, amphibians, and mollusks
- Determine the distribution and ecology of selected aquatic amphibians
- Develop models to evaluate the effect of proposed land management activities and policies on aquatic ecosystems at various spatial scales

Ecosystem Processes

Bernard T. Bormann, Team Leader, *Sustainable Ecosystem Productivity*, (541) 750-7323; email: bbormann; Researcher: Ching-Yan Li

- Study microbial and belowground processes that underpin productivity
- Conduct retrospective disturbance ecology studies
- Conduct regional long-term productivity experiments
- Develop adaptive management theory
- Demonstrate and improve adaptive management practices in pilot research and application projects

Randolph J. Molina, Team Leader, *Forest Mycology*, (541) 750-7391; email: rmolina; Researchers: Michael Castellano, Jane Smith

- Understand the biological and functional diversity of fungi in forest ecosystems and integrate this knowledge into sustainable ecosystem management practices
- Develop conservation strategies for rare and endangered forest fungi by measuring and modeling habitat requirements across the regional landscape as defined in the Northwest Forest Plan
- Understand the productivity of commercially valuable, edible special forest product fungi in managed forests and develop harvest guidelines and monitoring protocols to sustain their long-term productivity

Thomas A. Spies, Team Leader, *Forest Landscapes and Ecosystems*, (541) 750-7354; email: tspies; Researchers: Warren Cohen, Gordon Grant, Sarah Greene, Sherri Johnson, Janet Ohmann, Frederick Swanson

- Understand the effects of land use, natural disturbances, and climate change on forest and stream ecosystems
- Conduct integrated ecological and socioeconomic analyses to understand consequences of alternative management regimes
- Understand natural and managed stream ecosystems
- Understand long-term forest dynamics at multiple scales
- Manage and coordinate activities at the H.J. Andrews, Cascade Head, and Wind River Experimental Forests and 100 research natural areas

- Develop and evaluate remote sensing tools, geographic information systems, and ecological simulation models for landscape and regional assessments

Frederick C. Meinzer, Team Leader, *Canopy Processes in Temperate Mesic Forests*, (541) 758-7798; email: fmeinzer

- Develop basic knowledge of canopy processes in temperate mesic forests and relate those processes to stand, landscape, and regional phenomena regulating water and carbon budgets
- Coordinate, develop, and promote cooperative research at the Wind River canopy crane and nearby research sites
- Develop universal organizing principles governing canopy processes in all types of forests

Human and Natural Resources Interactions

Ralph J. Alig, Team Leader, *Land Use and Land Cover Dynamics*, (541) 750-7267; email: ralig

- Determinants of changes in major land uses, interactions across sectors, and long-range projections
- Private landowner behavior, incentives, and policy analyses
- Forest cover changes, forest investments, and global change analyses

Managing Disturbance Regimes

Rick G. Kelsey, Team Leader, *Behavioral Chemistry and Ecology of Insects and Disease*, (541) 750-7368; email: rkelsey; Researchers: Chris Niwa, Walt Thies

- Develop pheromones and phytochemicals to detect and mitigate insects and disease, including at the landscape scale
- Develop silvicultural approaches to regulate effects of diseases and insects on forest structure and composition
- Determine how to monitor effects of disturbance on abundance, function, and diversity of arthropods
- Determine the ecological roles of root diseases and develop strategies to encourage their desired effects in ecosystem management

- Determine roles of heart rot, dwarf mistletoe, and other organisms as disturbance agents in old-growth forests of southeast Alaska
- Determine the epidemiology of yellow-cedar decline in southeast Alaska and evaluate the salvage value of killed trees

Ronald P. Neilson, Team Leader, *Mapped Atmosphere-Plant-Soil System*, (541) 750-7303; email: rneilson; Researchers: Jim Lenihan, Ray Drapek

- Predict vegetation distribution, growth, and disturbance dynamics at global to landscape scales under current and future climatic conditions
- Forecast near-term fire risks at a high spatial resolution over the United States for upcoming seasons for the National Fire Plan
- Simulate ecosystem disturbances (such as fire, wind, and pests) under current and future climate and management scenarios, and predict associated ecosystem impacts
- Simulate upland ecosystem dynamics integrated with hydrologic processes for analysis of upland and stream habitats under alternative management practices and global warming
- Couple vegetation distribution and nutrient cycling simulations for estimation of trace gas fluxes and other biophysical feedbacks between land cover processes and global warming
- Conduct assessments for the Intergovernmental Panel on Climate Change and the U.S. Global Change Research Program
- Build predictive capability for sustainability of forest and water resources, including wildlife habitat, species diversity, and economic considerations

David V. Sandberg, Team Leader, *Fire and Environmental Research Applications*, (541) 750-7265; email: dsandberg. Other researchers are located in Seattle.

- Provide decision support for fuel and fire hazard management
- Provide decision support for managing smoke from fires
- Understand the role of the atmosphere in ecosystem disturbance processes
- Provide globally applicable mechanistic models of fire effects

Resource Management and Productivity

Brad St. Clair, Team Leader, *Forest Genetics*, (541) 750-7294; email: bstclair; Researchers: Richard Cronn, Randy Johnson

- Study the organization and variation of molecular and adaptive genetic diversity found in natural forests populations
- Study the genetic issues associated with the management of natural stands, planted stands, and restoration efforts—including interdisciplinary genetics, silvicultural, and disease resistance studies
- Evaluate biological and management-related barriers that hinder efficient implementation of gene resource management programs

Paul Anderson, Team Leader, *Biology and Culture of Forest Plants*, (541) 750-7786; email: pdanderson; Researcher: Nan C. Vance

- Analyze response of understory and riparian vegetation to silvicultural management systems
- Develop knowledge of plant ecology and biology with application to conservation and sustainable management of valuable and vulnerable plant resources
- Increase understanding of dynamics of native and invasive nonnative plant species and how they are affected by fire and other perturbations to aid in developing restoration and remediation techniques

Fairbanks

Forestry Sciences Laboratory

University of Alaska at Fairbanks
P.O. Box 756780
Fairbanks, AK 99775-6780
Phone: (907) 474-2424
FAX: (907) 474-6251

Programs, Teams, and Current Investigations

Ecosystem Processes

Marilyn D. Walker, Team Leader, *Boreal Ecology Cooperative Research Unit*, (907) 474-2424; email: mdwalker; Researcher: Tricia Wurtz

- Understand interactions between climate, disturbance, and ecosystems in central and northern Alaska
- Develop conceptual and real models of multiple spatial and temporal scales of pattern in Alaska vegetation
- Lead cooperative research at the Bonanza Creek Long-Term Ecological Research site

Juneau

Forestry Sciences Laboratory

2770 Sherwood Lane, Suite 2A

Juneau, AK 99801-8545

Phone: (907) 586-8811

FAX: (907) 586-7848

Programs, Teams, and Current Investigations

Aquatic and Land Interactions

Richard T. Edwards, Team Leader, *Juneau Aquatic and Land Interactions Team*, (907) 586-8811, ext. 269; email: rtedwards;
Researcher: Mason Bryant

- Quantify processes affecting productivity of stream habitats
- Develop and assess techniques to monitor and inventory aquatic habitat
- Determine the ecological role of surface-groundwater exchange zones in streams
- Develop methods to monitor coho responses to timber harvest
- Understand physical and chemical processes in high-gradient headwater streams and their effect on productivity of stream systems
- Identify essential habitats and processes for anadromous salmonids across landscapes of southeast Alaska
- Quantify the movement of fish in high-gradient streams in response to hydrologic variability

Ecosystem Processes

Thomas A. Hanley, Team Leader, *Alaska Wildlife Habitat Team*, (907) 586-8811 ext. 250; email: thanley; Researcher: Winston Smith

- Habitat modeling for black-tailed deer and moose in Alaska
- Ecology of understory vegetation in forests and its implications for wildlife habitat in southeast and south-central Alaska
- Role of moose in dynamics of flood-plain forests
- Ecology of endemic small mammals of southeast Alaska
- Evaluation of Tongass land management plan implementation, monitoring, and effectiveness for wildlife
- Bird communities of old-growth forests and mixed red alder-conifer forests of southeast Alaska

Human and Natural Resources Interactions

Linda Kruger, Acting Team Leader, *Sustainable Communities*, (206) 732-7832; email: lkruger, located in Seattle, WA

- Understand the relations between natural resource conditions and policies and community conditions and policies
- Understand the social values regarding rural peoples, communities, and development
- Assess the role of traditional ecological knowledge in contemporary approaches to forest management
- Understand the role of forest management in economic and social change in Alaska

Managing Disturbance Regimes

Rick G. Kelsey, Team Leader, *Behavioral Chemistry and Ecology of Insects and Disease*, (541) 750-7368; email: rkelsey, located in Corvallis, OR; Juneau contact is **Paul Hennon**, research pathologist, (907) 586-8811 ext. 277; email: phennon

- Determine epidemiology of yellow-cedar decline in southeast Alaska
- Determine roles of heart rot, dwarf mistletoe, and other micro-organisms as disturbance agents in forest ecosystems of southeast Alaska

Resource Management and Productivity

Michael H. McClellan, Team Leader, *Silviculture and Ecology of Southeast Alaska*, (907) 586-8811 ext. 246; email: mmcclellan;
Researcher: Dave D'Amore

- Develop and evaluate alternative silvicultural systems to protect and enhance the productivity of upland and riparian forest ecosystems
- Understand the role of natural and human-caused disturbances in controlling the structure, dynamics, and productivity of temperate rain forests and forested wetlands
- Develop growth and yield models and other mensurational tools to evaluate silvicultural treatments in southeast Alaska
- Improve understanding of the interactions of soil physiochemical properties and vegetation of temperate rain forests

La Grande

Forestry and Range Sciences Laboratory

1401 Gekeler Lane
La Grande, OR 97850-3368
Phone: (541) 963-7122
FAX: (541) 962-6504

Programs, Teams, and Current Investigations

Managing Disturbance Regimes

Jane L. Hayes, Team Leader, *Disturbance Ecology and Management*, (541) 962-6549; email: jlhayes; Researchers: Evelyn Bull, Catherine Parks, Dana Perkins, Torolf Torgersen (Emeritus), Andy Youngblood

- Develop alternative fuel-reduction strategies and evaluate the effects of fire in maintaining low-elevation east-side forests
- Characterize current and future risk and opportunities for sociocultural values in east-side forests
- Characterize the interactions between amphibian communities and disturbance agents in east-side forests
- Characterize the relation between disturbance events and wildlife associated with late-successional/old-growth forests
- Develop practices for regeneration of boreal forests in Alaska
- Examine the relations among disturbance agents and disturbance-dependent species; develop and assess integrated management strategies
- Characterize the impact of nonnative invasive plant species on community structure and function in relation to other disturbances

Marty Vavra, Team Leader, *Effects of Ungulates on Ecosystems*, (541) 962-6561; email: mvavra; Researchers: John Kie, Mike Wisdom

- Investigate the spatial and temporal variations in ungulate herbivory effects on ecosystem dynamics and disturbance regimes
- Describe how ungulate herbivory interacts with other disturbance factors such as insect outbreaks, disease, and fire
- Examine the effects of forest management (fuels reduction, prescribed fire) on the distribution of mule deer, elk, and cattle
- Determine the effects of human activities of off-road vehicle, horse, and walking traffic on elk, deer, and other wildlife species
- Investigate the spatial distribution and dietary overlap of elk, mule deer, and cattle, and formulate animal-unit equivalents that can be used to allocate forage in the intermountain West
- Investigate spatial distribution and dietary preference and overlap of elk, mule deer, and cattle, and develop models that can be used to predict herbivory influences on plant succession. Incorporate those models into the interior Northwest landscape analysis system (INLAS), thereby providing tools to resource managers

Olympia

Forestry Sciences Laboratory

3625 SW 93rd Avenue
Olympia, WA 98512-9193
Phone: (360) 956-2345
FAX: (360) 956-2346

Programs, Teams, and Current Investigations

Aquatic and Land Interactions

Peter A. Bisson, Team Leader, *Olympia Aquatic and Land Interactions Team*, (360) 753-7671; email: pbisson; Researcher: Steven M. Wondzell

- Riparian ecosystem management in western Washington
- Role of salmon carcasses as vectors of marine-derived nutrients to freshwater and riparian ecosystems
- Model salmonid productivity in the Columbia River basin
- Assess the effects of large flood events on aquatic productivity
- Scientific evaluation of the Northwest Power Planning Council's and Bonneville Power Administration's fisheries programs
- Long-term recovery of Mount St. Helens ecosystem
- Implementation of Columbia River basin ecosystem management plan
- Development of monitoring and restoration strategies for fish
- Biophysical processes responsible for maintaining productive aquatic ecosystems and clean water

Ecosystem Processes

Andrew B. Carey, Team Leader, *Ecological Foundations of Biodiversity*, (360) 753-7688; email: acarey; Researchers: Juliann Aukema, Todd Wilson

- Synthesis of retrospective studies on wildlife, fungal, and plant communities of old-growth, naturally young, and managed forests to determine the process of forest development as it relates to composition, structure, and function of healthy Douglas-fir/western hemlock forest ecosystems
- Develop the conservation of biodiversity concept into a useful strategy for forest ecosystem and forested landscape management
- Simulation modeling of biodiversity pathways and alternatives to determine optimal approaches to joint production of ecological and economic goods and services under the principle of general sustainability
- Experimental testing of hypotheses, alternative biodiversity pathways, and indices of ecosystem health
- Develop innovative multimedia approaches to effectively and efficiently communicate research and syntheses of research to forest managers, landowners, and other stakeholders

Martin G. Raphael, Team Leader, *Ecology, Management, and Conservation of Sensitive Wildlife Species*, (360) 753-7662; email mraphael; Researchers: Keith Aubry; Eric Forsman, located in Corvallis, OR; Bruce Marcot, located in Portland, OR

- Investigate wildlife habitat relations, patterns of disturbance and abundance, and determinants of population persistence in relation to past, current, and future ecosystem management practices
- Investigate the role of wildlife species in the maintenance of biodiversity and the structure and function of managed and unmanaged forest ecosystems
- Investigate the role of aquatic and riparian environments as wildlife habitat, and study the effects of forest management on associated wildlife species
- Develop methods to assess viability of threatened wildlife populations
- Develop protocols for surveying and monitoring sensitive and threatened wildlife populations

Resource Management and Productivity

Stephen E. Reutebuch, Team Leader, *Westside Silviculture Options*, (206) 543-4710; email: sreutebuch, located in Seattle, WA; Researchers: Connie Harrington, David Marshall, Tim Harrington

- Study the biology and culture of conifer and hardwood species
- Evaluate the growth and development of tree species in response to a variety of silvicultural practices that include site preparation, planting density, fertilization, precommercial thinning, pruning, commercial thinning, and a variety of regeneration harvest strategies
- Determine quantitative relations of tree growth, stand structure, and silvicultural practices to ecosystem productivity, including quality and quantity of wood and abundance and diversity of other biota in forest stands and landscapes
- Investigate the effects of forest operations and management activities on long-term site productivity including nutrient cycling, changes in soil conditions, and vegetation responses
- Investigate public understanding and acceptance of silvicultural practices

Portland

Forestry Sciences Laboratory

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Programs, Teams, and Current Investigations

Focused Science Delivery

R. James (Jamie) Barbour (Portland), Jane L. Hayes (La Grande, Managing Disturbance Regimes Program), and Alan Ager (Pendleton), Issue Leads, *Reducing Fire Risk to People and Resources Issue*, (503) 808-2542; (541) 962-6549; (541) 278-3740; emails: jbarbour01; jlhayes; aager; Researchers: Roger Clark, located in Seattle, WA; Jeremy Fried, Roger Fight, and Miles Hemstrom, located in Portland, OR; Jeff Kline, located in Corvallis, OR; Steve Wondzell, located in Olympia, WA; Marty Vavra and Mike Wisdom, located in La Grande, OR

- Develop methods and models to simulate the long-term economic and ecological consequences of current forest management, and the interactions among forest and rangeland succession, management activities, and disturbance on subbasin scales (e.g., 202 343 hectares) to better understand how natural disturbance regimes can be managed while simultaneously achieving social goals like community stability
- Identify optimal spatial schedules of forest management to mitigate the spread of wildfire and identify the current land management policies that might prevent the implementation of these schedules
- Develop a scientific process to measure the balance between the costs, benefits, and risks of forest management activities that mitigate wildfire occurrence and spread; analyze the amounts and types of forest products that are generated from forest management that targets mitigation of large disturbances

- Develop methods to identify problematic subwatersheds that require high levels of forestry investments to maintain sustainable conditions over the long term
- Combine forest inventory and analysis data, GIS information on road networks, harvesting costs, and estimates of reduction in fire hazard to evaluate proposed locations for biomass cogeneration plants
- Develop techniques to prioritize economic assistance activities

Rebecca A. Gravenmier, Team Leader, *Science Delivery Methods*, (503) 808-2851; email: bgravenmier; Staff: Gary Benson

- Synthesize existing scientific knowledge and provide conceptual frameworks, tools, methods, and information for multiscale assessments to inform policy and decisionmaking processes within the Pacific Northwest
- Develop methods for monitoring the effectiveness of land management strategies and provide research to support successful implementation of adaptive management in the federal land use planning processes
- Facilitate planning support and technology transfer activities to federal land managers for integrated research findings in the Pacific Northwest
- Provide the mechanisms for sharing and communicating synthesis products to policy and decisionmakers in the Pacific Northwest
- Provide an opportunity for presenting and discussing the latest science findings regarding priority topics within the Pacific Northwest to a variety of audiences
- Proactively share significant science findings and provide for interaction with regional and local managers on key topics relating to decisionmaking
- Develop new methods to communicate science findings in innovative ways to facilitate their application

Linda Kruger (Seattle, Human and Natural Resources Interactions Program) and Susan J. Alexander (Corvallis, Human and Natural Resources Interactions Program), Issue Leads, *Recreation and Tourism Issue*, (206) 732-7832; (541) 750-7417; emails: lkruger, salexander; Researcher: George Stankey

- Provide syntheses that provide our best current understanding of the role and value of natural resource systems (forests, rangelands, riparian areas) for recreation/tourism services and the impacts of recreation/tourism use on these systems
- Review, update, and synthesize existing research and management experience relative to concepts and techniques for management of biophysical, social, and economic impacts of recreation/tourism use
- Design programs to enhance institutional capacity in recreation/tourism management and its integration with other resource management programs
- Develop frameworks and protocols to facilitate communication of existing recreation and tourism research and management experience to practitioners, and define priority research needs

Robert Deal (Portland), Issue Lead, *Sustainable Wood Production Issue*, (503) 808-2015; email rdeal

Note: Team leader and scope of work yet to be determined.

Biodiversity Issue

Note: Team leader and scope of work yet to be determined.

Forest Inventory and Analysis

Bob Rhoads, Team Leader, *Data Collection*, (503) 808-2022; email: brhoads

- Data collection of forest and rangeland resources for Oregon, Washington, California, and the Pacific Islands
- Remote sensing applications and integration with field-collected data
- Development and application of quality control

George Breazeale, *Compilation and Application Team*, (503) 808-2012; email: gbreazeale

- Develop and manage standards, quality control, and inventory documentation
- Application and integration of GIS and inventory data
- Response to clients and customer requests

Jeremy Fried, Team Leader, *Resource Analysis*, (503) 808-2058; email: jsfried; Researchers: Dave Azuma, Andrew Gray, Tara Barrett, Joseph Donnegan, Vicente Monleon, Susanna Melson

- Assessment of Pacific coast forest and range health
- Evaluation of effects of land use change on wildlife habitat quality, carbon sequestration dynamics, fire risk in the urban-wildland interface, economic productivity of forest land, and public expectations of the forest
- Assessment and characterization of forest composition and structure at the landscape scale and their relation to habitat conditions, susceptibility, and response to disturbance
- Develop techniques and methods for statistical inventories

Sally Campbell, Team Leader, *Inventory Reporting and Mapping*, (503) 808-2034; email scampbell; Researchers: Karen Waddell, Dale Weyermann

- Analysis of trends and changes in the status, extent, condition, and uses of forest ecosystems
- Develop techniques and methods for statistical inventories
- Comprehensive forest and rangeland resource analysis and assessments

Human and Natural Resources Interactions

Robert Monserud, Team Leader, *Ecologically Sustainable Production of Forest Resources*, (503) 808-2059; email rmonserud; Researchers: Eini Lowell, Susan Hummel, Ellen Donoghue

- Evaluate the influence of stand treatments on the quality and quantity of forest products
- Determine the feasibility of financing ecosystem restoration activities through removal of forest products
- Characterize the forest resources at different geographic scales
- Provide information and technology to aid resource managers in understanding impacts of forest management on an array of forest products
- Improve understanding of changing timber characteristics, processing technology, product standards, or measurement systems on product recovery of western tree species

Roger D. Fight, Team Leader, *Joint Production in Land Management*, (503) 808-2004; email: rfight; Researchers: Sue Alexander, located in Corvallis, OR; Geoffrey Donovan

- Financial evaluations and development of analytical tools for assessing ecosystem management, silvicultural practices, use of small trees, joint production of timber and nontimber forest products, and stream restoration
- Valuation of nonmarketed forest activities

John R. Mills, Team Leader, *Timber Resource Analysis Systems*, (503) 808-2076; email: jmills

- Long-term projections of timber resources at regional and national scales
- Analyze supply and demand trends and influences
- Evaluate alternative futures for forest resource conditions

Richard W. Haynes, Team Leader, *Forest Sector-Market Analysis*,
(503) 808-2002; email: rhaynes

- Develop databases, methods, and frameworks for strategic planning at multiple geographic scales
- Report price and other market variables for western regions
- Assess links among international trade and international economic and environmental issues
- Address policy issues surrounding sustainable forest management at large scales

Susan Charnley, Team Leader, *Protocols for Socioeconomic Monitoring*, (503) 808-2051; email: scharnley

- Develop protocols for socioeconomic monitoring
- Develop frameworks to increase our understanding of the human dimensions of forest management

Managing Disturbance Regimes

Paul Hessburg, Team Leader, *East-Side Forest Health Restoration*,
(503) 662-4315 ext. 221; email: phessburg, located in Wenatchee, WA;
Miles Hemstrom, located in Portland, OR

- Landscape-scale assessment and analysis of ecosystem conditions, disturbance regimes, and their interactions
- Process-based modeling of ecosystem responses to disturbance regimes and management at varying spatial and temporal scales
- Risk analysis protocols for invasive plant species' responses to fire and management practices
- Development and evaluation of landscape analysis and decision-support systems for management of interior forest ecosystems

Seattle

Forestry Sciences Laboratory

400 N 34th Street, Suite 201
Seattle, WA 98103
Phone: (206) 732-7800
FAX: (206) 732-7801

Programs, Teams, and Current Investigations

Human and Natural Resources Interactions

Roger N. Clark, Team Leader, *Rural Urban Wildland Interactions*, (206) 732-7800; email: rnclark; Researchers: Linda Kruger; George Stankey and Keith Reynolds, located in Corvallis, OR

- Study approaches to integrate public concerns, uses, and values into resource management policies, programs, and practices across space and through time
- Understand institutional requirements and processes for effective, responsive, and efficient resource management and research
- Develop an integrated framework to study and manage human interactions with wildland ecosystems
- Evaluate knowledge-based decision-support systems that integrate knowledge-based reasoning with GIS technology to provide decision support for ecosystem assessment at any geographic scale
- Methods to involve people in meaningful decisions about natural resources
- Evaluate societal concerns for forest sustainability in long-term, regionwide study installations
- Improve understanding of human-forest relations (both place-based communities and stakeholder groups)
- Understand concepts of place and place attachment as they apply to human-forest relations

Managing Disturbance Regimes

David V. Sandberg, Team Leader, *Fire and Environmental Research Applications*, (541) 750-7265; email: dsandberg, located in Corvallis, OR; Researchers: Sue Ferguson, Don McKenzie, Susan O'Neill, Roger Ottmar, David L. Peterson, and Clint Wright

- Provide decision support for fuel and fire hazard management
- Provide decision support for managing smoke from fires
- Understand the role of the atmosphere in ecosystem disturbance processes
- Provide globally applicable mechanistic models of fire effects

Resource Management and Productivity

Stephen E. Reutebuch, Team Leader, *Westside Silviculture Options*, (206) 543-4710; email: sreutebuch; Researcher: Robert McGaughey

- Develop stand- and landscape-level forest management design and visualization systems that allow better assessment and communication of forest management alternatives
- Develop more efficient methods to collect site-specific data required for stand- and landscape-level planning of forest management alternatives
- Develop and adapt advanced technologies that allow better design, implementation, and monitoring of forest operations and their impacts

Sitka

Alaska Wood Utilization Research and Development Center

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Programs, Teams, and Current Investigations

Human and Natural Resources Interactions

Ken Kilborn, Team Leader, *Wood Utilization Center*; (907) 747-4308;
email: kkilborn; Researcher: David Nicholls

- Assess the conditions needed to create and sustain a viable forest products industry in Alaska
- Describe “value-added” activities that provide a durable mix of employment, profits, and marketable products
- Identify the type and scale of harvesting operations and manufacturing facilities that are consistent with conditions in southeast Alaska
- Distinguish the roles of government and the private sector in promoting and assuring the contribution of timber-based manufacturing to both sustainable communities and forest management
- Develop partnerships to facilitate these activities

Wenatchee

Forestry Sciences Laboratory

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Programs, Teams, and Current Investigations

Aquatic and Land Interaction

Richard D. Woodsmith, Team Leader, *Wenatchee Aquatic and Land Interactions Team*, (509) 662-4315; email: rwoodsmith; Researcher: Mark S. Wipfli

- Aquatic and riparian ecosystem management and restoration strategies in eastern Washington and Oregon
- Methods to monitor and assess conditions of aquatic and riparian ecosystems and evaluate management options
- Hydrologic and geomorphic processes that create, maintain, or modify aquatic and riparian habitats and habitat quality
- Trophic processes governing salmonid productivity in the Columbia River basin
- Role of salmon carcasses as vectors of marine-derived nutrients to freshwater and riparian ecosystems
- Trophic link between fishless headwaters and fish-bearing mainstem habitats

Managing Disturbance Regimes

Paul Hessburg, Team Leader, *East-Side Forest Health Restoration*, (509) 662-4315 ext. 221; email: phessburg; Researchers: John Lehmkuhl, David W. Peterson; Miles Hemstrom, located in Portland, OR

- Develop and assess knowledge on historical and current disturbance regimes, climate regimes, vegetation, and wildlife dynamics of interior Northwest forests and rangelands at multiple spatial and temporal scales
- Develop knowledge and management strategies to restore and improve composition, function, and values of interior Northwest ecosystems following disturbances or ecological deterioration
- Develop integrated landscape decision-analysis systems and risk assessment protocols
- Determine effects of fire, other disturbances, and land management activities on invasive plant species, and sensitive native plant species and their habitats (including late-successional forests)
- Develop aquatic ecosystem classifications and simulation models addressing large-scale disturbance processes and their effects in forest watersheds

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Notes

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