

PACIFIC NORTHWEST RESEARCH STATION

STRATEGY FOR THE FUTURE

March 2002



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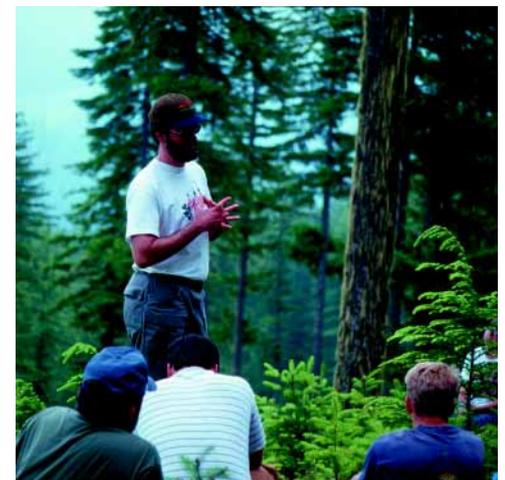
*“Science can help policymakers create
a new vision and new possibilities for
forest management.”*

- Lewis and Koch 1999

INTRODUCTION

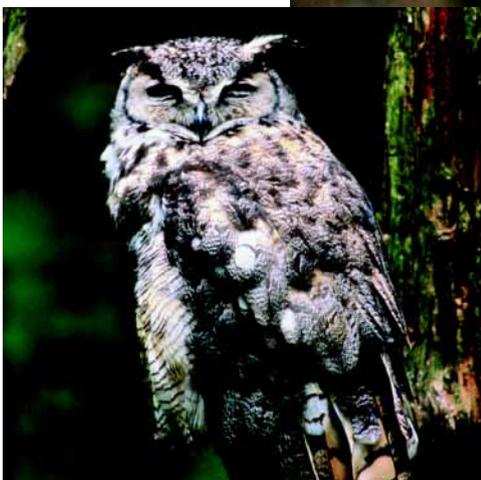
We live in a time of historic change in the way people view, understand, and value the natural world. Many people show intense interest in the use of public lands. Just as sustained-yield and multiple-use concepts emerged as frameworks to manage natural resources in the 1960s, during the last decade we have witnessed a significant evolution from managing stands toward managing resources at the landscape scale. We are now shifting toward development of comprehensive approaches that enable resource managers to use the best science to sustain natural resources and ecological processes while maintaining productivity of goods and services.

Science is critical to good decisionmaking. Research is needed that simultaneously looks at ecosystem structure, composition, and function, and at multiple scales. Much of the controversy surrounding resource management questions is not from the lack of science or disagreements about the state of



nature but rather involves basic disputes about human values. Science knowledge alone does not yield decisions about resource management. But science can aid in the development of informed choices and sustainable solutions by incorporating human needs and values with our best understanding of the environment. Science alone cannot and will not produce a single "right" answer for resource use and management decisions. Such decisions will continue to be a complex blending of social, economic, political, and scientific information and interests.

The Pacific Northwest (PNW) Research Station has a distinguished history of expanding scientific understanding about forest and aquatic ecosystems and the values people ascribe to them. We are committed to charting a course that guides our actions to build on this history by reassessing our mission and strategic goals in the context of current issues and trends in use and values of natural resources. During the past year, we have engaged our clients, partners, and employees to help us formulate this strategy for guiding our research over the next 10 years.





We believe that people who view an organization from the outside often are able to see and articulate key trends, issues, challenges, and opportunities that are difficult to see from within an organization. Input was gathered from 18 client, partner, and employee workshops held in Alaska, Oregon, Washington, and Washington, DC. More than 500 individuals were consulted. The participants at these workshops represented various organizations and perspectives ranging from university professors and state government agency personnel to community leaders, forest industry representatives, and congressional staff. The discussions were characterized as open, honest, and productive. Some participants submitted written comments.

A wide range of perspectives were expressed during those workshops, but several themes consistently emerged. One was the importance of long-term research and the recognition that the Station is one of the few natural resources research organizations with the capability to provide the continuity to conduct research that extends over decades. The need to understand "the big picture" was another theme. This was expressed in the need to study broad landscape relations and the multiple facets of issues or questions through the integration of these many facets.

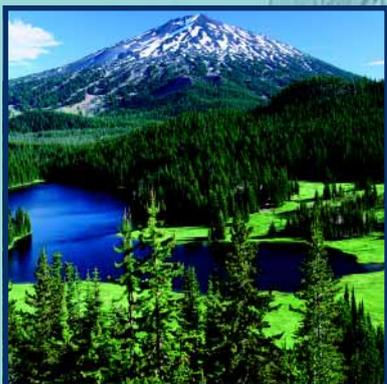
Designing and implementing inventory and monitoring systems to generate compatible baseline information across entire regions about natural resources and their

uses was mentioned often. The need for analyses to identify trends and for use in adaptive management was also commonly mentioned. Several other topics emerged, including interest in production forestry, cost-effective and increased fiber production and production within the context of sustainability; management of and the economic contributions of recreation and tourism; greater understanding of the people part of resource management; and the effects and management of forest health, especially fire. Another consistent theme was the importance of communicating research results in various forms to users.

Because this input was used as the basis for formulating this updated strategic direction, it largely reflects those comments. We will serve society by improving understanding, use, and management of natural resources via basic and applied research, development, and application. In short we seek to create new knowledge about biological, physical, ecological, social, and economic relations and then make that information readily available to resource specialists, managers, scientists, and the public.



GEOGRAPHIC SCOPE



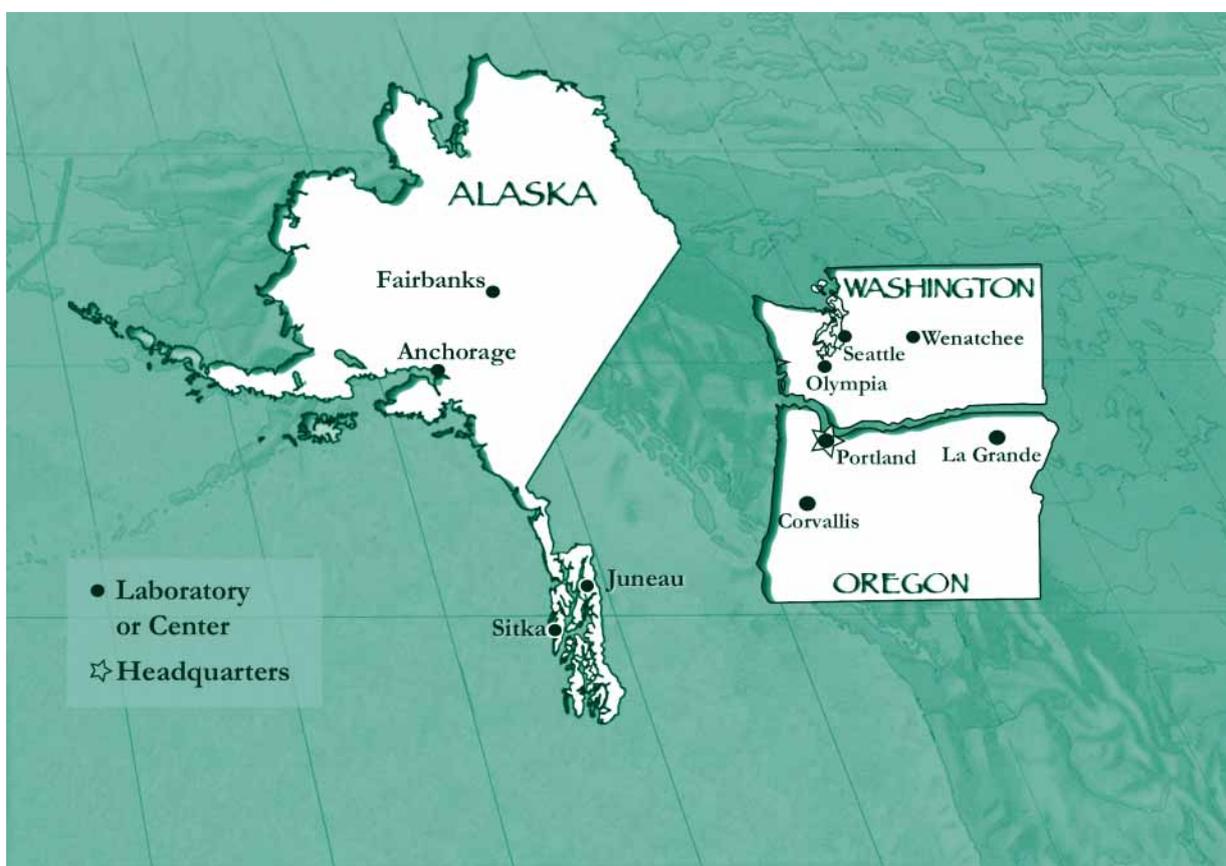
The Pacific Northwest is a particularly diverse region of North America in terms of environment and vegetation. Oregon and Washington encompass wet coastal and dry interior mountain ranges, miles of coastline, interior valleys and basins, and high desert plateau. Moisture, temperature, and substrate differ greatly. Natural vegetation types range from dense coastal forests of towering conifers through woodland and savanna to shrub-steppe. Alaska occupies an enormous stretch of land, 375 million acres, with vast archipelagos and more coastline than the contiguous United States. With this territory comes a variety of natural ecosystems that provide a rich basis for the study of their health and function.

The region has an extensive forestland base that has been managed for diverse and changing goals for more than a century. Over the past decade, changes in public policies have changed the region's role in national and international timber markets. For example, regional declines in timber harvest have led to increases in such countries as Argentina, Brazil, Canada, and Russia. At the same time, in the Pacific Northwest, as in other parts of the United States and the world, demands for timber are being met by increasing productivity

and expanding harvests from managed forests. Science can contribute to the desire to produce commodities while sustaining ecosystem functions by helping society understand compatible production possibilities.

Although historically our primary area of concern has been the Pacific Northwest, the scope of issues on which we work and the potential impacts of decisions made in the Pacific Northwest have expanded to other parts of the world. Our Forest Inventory and Analysis

Program primarily includes Alaska, Oregon, and Washington and extends to include California, Hawaii, and the Pacific Islands. Our economics work heavily emphasizes global markets, and our fire research covers the Nation and down through the Americas to Brazil. Our scientists cooperate across the globe to help us understand how systems and processes interact and to learn from science and management in other parts of the world dealing with similar issues.





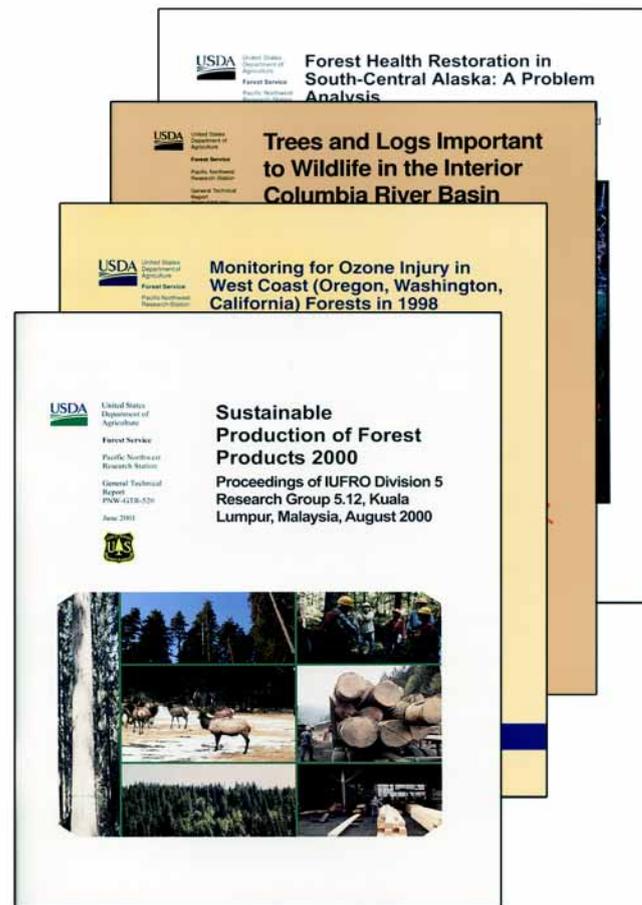
VISION

The foundation of our business is quality science. The methods of science differ among different disciplines but always include thoughtful analysis of the questions being asked, stating anticipated outcomes in advance and then testing them, making comparisons among alternatives, finding ways to increase confidence in conclusions, and seeking independent peer review. Recognizing that this method may take too long to address some short-lived issues, we focus on durable questions and try to anticipate future knowledge within the available timeframe in which information can be produced. We also recognize that science develops conclusions bounded by an estimation of their uncertainty and consequently show the risks involved in using those conclusions to the best of our ability.

We are highly sought for our scientific leadership and impartial knowledge.

Both science and land management policy issues drive our research. A balance between fundamental science questions and short-term, issue-driven research makes us responsive to current and emerging needs. Science provides the foundation for developing options to resolve emerging or unforeseen science and policy issues. Responsiveness to needs for applying science in current policy and management decisions is essential. We seek the appropriate balance between the two and to engender the skills and resources sufficient for world-class research efforts for both.

We strive to make knowledge useful and relevant for our clients and partners. We emphasize the creation of knowledge. We put knowledge into forms and formats useful to managers, policymakers, and scientists. We produce a diverse array of products, including new information, models, guides, frameworks, decision-support systems, methods, processes, and prototypes. We synthesize knowledge from research into a coherent whole, resulting in new or different perspectives, often leading to new or modified options that expand various choices available to managers and policymakers. Our ultimate success rests on the ability of resource managers to actively participate in and support the creation and use of applied knowledge and tools.



We ensure that our science findings are of high quality through a rigorous system of quality assurance and quality control. The relevance and value of our products to our clients and partners are validated through regular client and partner meetings and ongoing, informal interactions and needs assessments. This requires a focused effort not only to create new knowledge but also to affect its use. We develop new tools, concepts, and frameworks based on results from our research and synthesizing other available knowledge. We also are responsible for communicating the degree of confidence that can be placed in our findings.



MISSION

As society struggles with ways to integrate ecological, social, and economic values in managing natural resources, several forces are adding unprecedented complexity to the resolution of natural resource management and policy issues: (1) changing values about forests and natural resources; (2) shifting distribution and structure of society; (3) shifts in the economy resulting in redistribution of wealth; (4) distrust of government, people in authority, and expertise; (5) complex legal environment; and (6) fragmented public institutions struggling to deal with transboundary problems. We respond to these issues by making conscious choices about how to focus our scarce research program resources. The range of possible research questions far exceeds our capacity to investigate them. We set reasoned goals and priorities in a collaborative manner with clients, scientists, and science managers based on our comparative advantage. Our advantage lies in our ability to conduct interdisciplinary, long-term, geographically broad, and policy-oriented research.

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

Specifically, the Station emphasizes:

● Interdisciplinary and integrated solutions.

The diversity and size of the Station's workforce and of close partnerships with managers and other research institutions permits the formation of interdisciplinary teams that can achieve integrated solutions.



● Research that is a balanced portfolio of long- and short-term research.

The Station seeks to balance short-term research and response to policy issues with the need to improve understanding of those basic biophysical, social, and economic aspects of natural resource management that are only revealed through long-term study. The relatively stable funding source and organizational structures of the PNW Research Station create an environment that enhances the Station's ability to conduct long-term research.

● Working at multiple scales and ownerships to solve increasingly complex natural resource issues that society faces.

Our science is diverse, cutting across biophysical, social, and economic dimensions. We increasingly study the interrelations among different spatial scales from fine to broad scales and across multiple ownerships.



● Contributing to informing the debate about controversial natural resource policy issues.

Station research will link research and management to gather information from operational activities to better understand and anticipate emerging issues important to managers. We also will link science and policy to provide scientific information to address key policy questions in large-scale assessments and in planning processes. We will summarize and synthesize our scientific information so it can be readily used by all people interested in the policy issue for evaluating and comparing consequences of policy decisions.

GOALS AND PRIORITIES



Goal 1. Develop a fundamental understanding of ecological, social, and economic systems and their interactions.

Priority

- 1.1 Advance the understanding of structure, function, and processes of terrestrial ecological systems.
- 1.2 Advance the understanding of structure, function, and processes of aquatic and riparian ecological systems.
- 1.3 Improve the understanding of social and economic processes and their interaction with natural resource values and uses.



Goal 2. Assess the status and trends of ecosystems and natural resources and their uses.

Priority

- 2.1 Conduct inventories of forest resources and use.
- 2.2 Analyze and assess resource trends.
- 2.3 Develop monitoring protocols and data analysis techniques.



Goal 3. Develop science-based options that enhance management.

Priority

- 3.1 Manage riparian and aquatic areas for multiple values.
- 3.2 Restore ecosystems at risk and reduce the risks people face.
- 3.3 Develop recreation and tourism options for diverse populations.
- 3.4 Produce wood within sustainable frameworks.
- 3.5 Create operational strategies for conservation of biodiversity.



Goal 4. Communicate science findings and enhance their application.

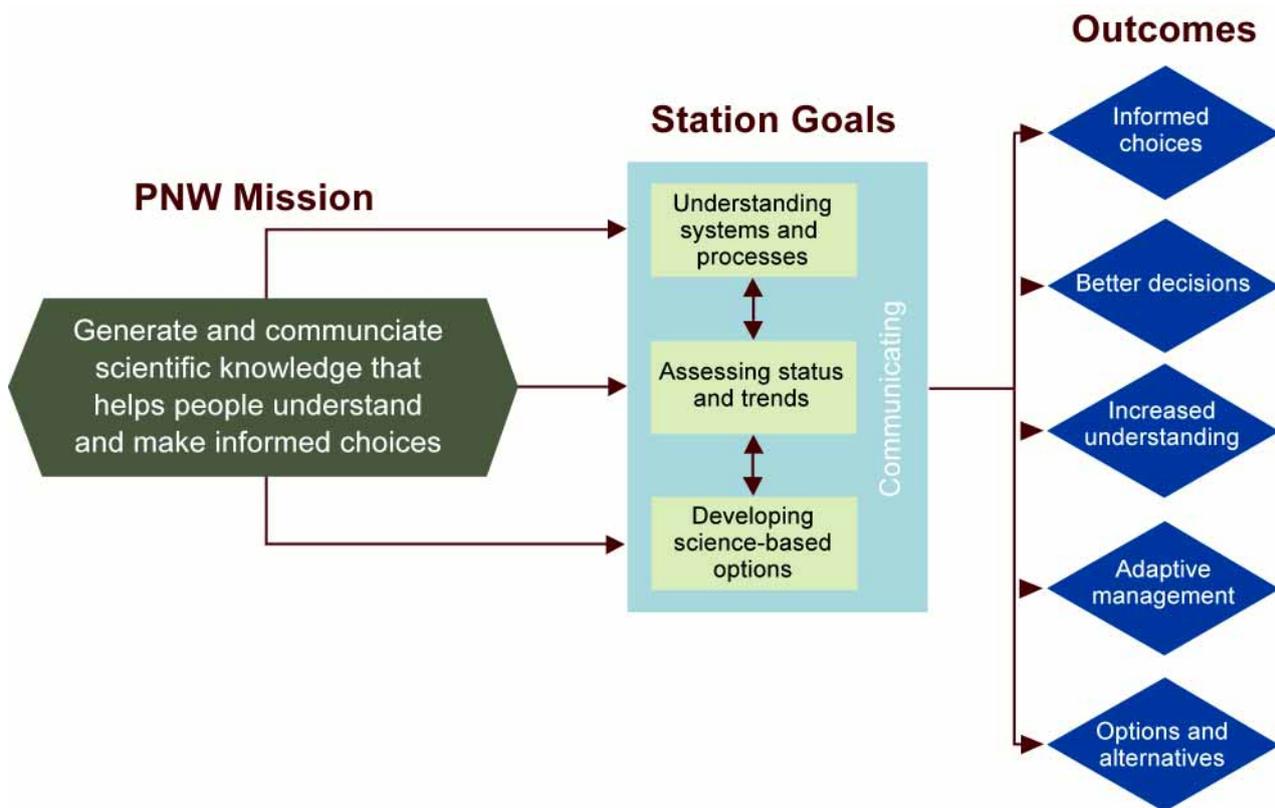
Priority

- 4.1 Respond to emerging issues.
- 4.2 Bridge the gap between information generation and its use.

GOALS

To fulfill our mission, our goals guide our integrated programs of research, development, and application. With a 5- to 10-year horizon, they address important issues, build on clearly established capability, and are designed to encompass the full scope of our mission. They focus on developing a fundamental understanding of systems, assessing status and trends, developing options and alternatives for management, and applying and communicating our science findings. We will strive to meet the following goals.

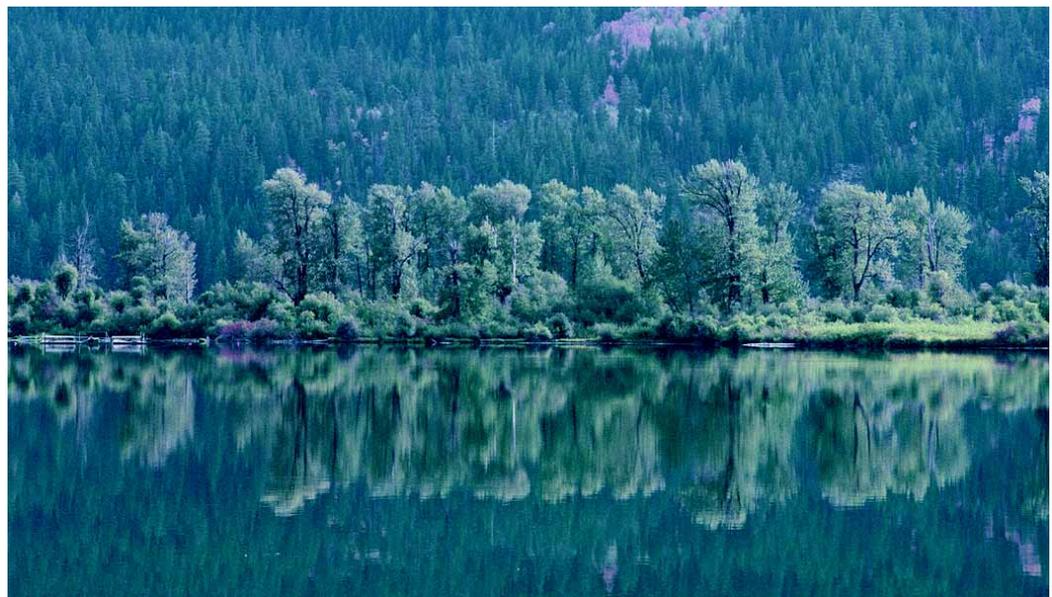




Goal 1. Develop a fundamental understanding of ecological, social, and economic systems and their interactions.

We are steering our science to address broad issues affecting landscape patterns at multiple scales as we deal with topics including species decline, forest fragmentation, water quality and quantity, and conflicting human values. Understanding these complex interactions is crucial to developing options that sustain forests and related systems. This fundamental research also can yield results

that help us see issues differently, craft new and innovative solutions to problems, and grasp opportunities that we did not even realize existed.



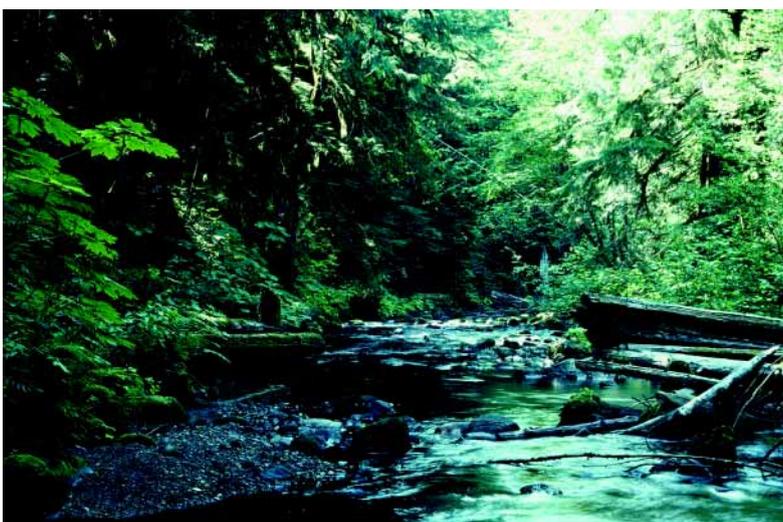


Goal 2. Assess the status and trends of ecosystems and natural resources and their uses.

Scientific assessments of forested ecosystems allow us to monitor forest resource trends, learn the outcomes of previous management decisions, and provide the basis for developing future management alternatives. Programs of geographically targeted or comprehensive, long-term monitoring remain our best means of learning how forests change at landscape and regional scales, with or without management. They provide the contex-

tual framework for management and information that can be used to locate potential resource use opportunities.

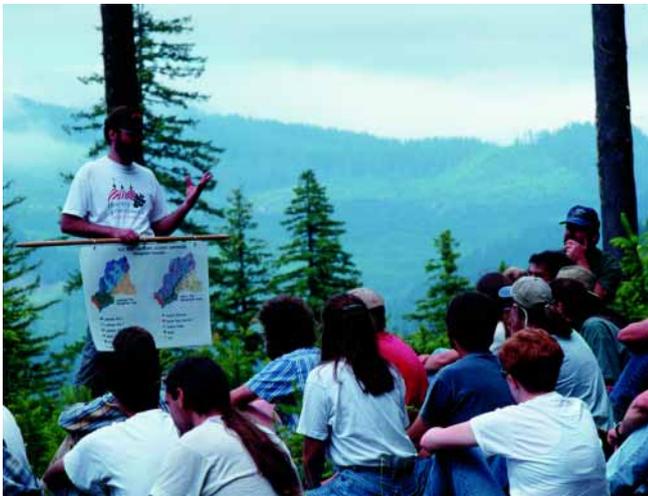
Issues such as conversion of forest land to residential use, and its effect on the supply of forest products; wild-land-urban interface and fire management; and increased emphasis on forest amenity values call for new approaches to assess trends, generate forecasts, and analyze the information collected.



Goal 3. Develop science-based options for informed management.

Natural resource management issues are often contentious and complex. These issues can encompass or affect multiple land ownerships and have ecological, social, and economic dimensions. They manifest themselves at different geographic scales, and strategies to address them often have both short- and long-term consequences. As a result, we seek to provide scientific information about the consequences and risks of various

management alternatives to address high-priority management issues. Our research produces an integrated picture across different dimensions and scales affected by management. A display of the full range of potential management options broadens the public dialogue about land management decisions beyond simple advocacy to informed debate about which management strategy to implement and the ensuing consequences.



Goal 4. Communicate science findings and enhance their application.

The scale, scope, and complexity of natural resource and environmental issues have dramatically increased. Their urgency often requires immediate information that spans disciplinary boundaries, synthesizes material from various sources, draws inferences, and identifies levels of confidence. Choosing from available information and distilling the essential

elements to identify potential implications for land and resource management can be overwhelming. We seek not only to generate scientific knowledge but also to communicate it and help in the application of our science findings. We will develop ways to interact with clients and partners to optimize the diffusion of our information.

PRIORITIES

To meet the above goals, we have developed the following priorities to guide our work for the next 3 to 5 years. These priorities will be reevaluated annually to determine if they should be revised, although the issues that drive these priorities are not expected to change quickly. The priorities are organized under our four goals and their order is not significant. They are also not mutually exclusive. There are links between them all.



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