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# Focused Science Delivery Makes Science Make Sense

BY RACHEL W. SCHEUERING AND JAMIE BARBOUR

Science does not exist in a vacuum. but reading scientific publications might make you think it does. Although the policy and management implications of their findings could often touch a much wider audience, many scientists write only for the few people in the world who share their area of expertise. In addition, most scientific publications provide



Rachel Scheuering



**Jamie Barbour** 

information that is more like clues than complete answers. Making science truly meaningful in the formulation and implementation of natural resource management policy requires an additional step where the clues are fit together and polished so that they tell a story we can all follow and understand. This "synthesis and integration" of the small bits of information provided by individual publications (often from a variety of disciplines), makes scientific knowledge much more available for application. This is where the Focused Science Delivery (FSD) program comes in.

The purpose of our program is to enhance the use of scientific informa-



PHOTO COURTESY OF BOB NICHOLS

The PNW Research Station's Focused Science Delivery Program helps forest managers understand the scientific basis of forestry, ultimately assisting them in making land management decisions.

tion by translating it into clear and effective formats. In the course of our work, we keep three primary audiences in mind: those who set natural resource policy (policymakers), those who implement policy (forest managers) and those who seek to influence policy (the public). Many of the groups and individuals in these audiences may not have the time or expertise to gather and digest original scientific research. The FSD program performs this function.

To do so, we analyze and disseminate technical or esoteric data in accessible ways, often looking to unconventional sources for related information that might provide further insight to the management questions at hand. In order for a truly successful

exchange of information, we believe the process should be participatory and interactive. Therefore, we work to form creative partnerships between those who manage the resource and those who study the resource, we foster collaborations across disciplines, and we encourage interagency communication. Our goal is to create dynamic and reciprocal relationships that dispel the notion that science operates in a vacuum.

We accomplish our goals in these specific ways: 1) establishing discussion processes to identify target issues; 2) assembling teams of scientists from different disciplines to address complex resource policy questions; 3) providing a framework for scientists to

(CONTINUED ON PAGE 2)

### **Focused Science Delivery**

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analyze the results of management activities to hone the decisionmaking process; 4) facilitating collaboration between researchers and resource managers; and 5) continually exploring new and creative ways to transfer scientific information for use in policy debates, management decisions and public discussion.

One example of our efforts was our participation in a series of workshops in the spring of 2003 on wildland fire



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Keith and Elizabeth Coulter 23526 Lewis Dr., Philomath, OR 97370 Phone/Fax: (541) 929-6173 yankee@theyankeegroup.com Visit us on the web: www.theyankeegroup.com organized in conjunction with the Joint Fire Science Program, National Fire Plan, and the USDA Forest Service. More than 250 participants land managers, policymakers, educators, researchers and community leaders—gathered to forge partnerships, to explore various wildland fire management tools and to develop a list of prioritized recommendations for research. FSD was a co-sponsor of the workshops, helped organize them, and also helped facilitate and record the dialogue that unfolded. Our main contribution was a General Technical Report titled Bridging the Worlds of Fire Managers and Researchers: Lessons and Opportunities from the Wildland Fire Workshops (PNW-GTR-599), in which we compiled the workshop's highlights.

A completely different type of example is our creation of a financial analysis tool that can help managers make nuanced decisions on dollar costs of reducing hazardous fuels in dry inland forests—see the sidebar: My Fuel Treatment Planner on page 3.

The FSD program is part of the

USDA Forest Service's Pacific Northwest Research Station (PNW). located in Portland, Ore. The FSD program's geographic scope predominately covers the western United States, but also includes national issues that influence western forestry. We concentrate on high priority management issues that cover a range of research topics. The topics we concentrate on shift over time as we track changes in forest policy in an attempt to remain relevant to the needs of land managers.

An ongoing goal of the program is to encourage the involvement of our audience in the whole process—from determining potential issues to participating in analyses to reviewing final products. By promoting these types of interactions we try to build synergistic relationships, maintain direct and open communication, and establish new information channels among researchers, resource managers, policymakers and the public. New topics are selected through a formal discussion process that involves groups within and outside of the Forest Service, and which repeats on a two-year cycle. We use a flexible process to select new topics that includes input from many levels, from small groups of interested individuals up through the highest ranks of Forest Service staff, and from private associations, state and other

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Other than general editing, the articles appearing in this publication have not been peer reviewed for technical accuracy. The individual authors are primarily responsible for the content and opinions expressed herein.

### **Seth White is Guest Editor**

Many thanks to Seth White for being a guest editor for this issue. White is a science writereditor for the Focused Science



Delivery Program, PNW Research Station, USDA Forest Service, and a graduate student in the Department of Fisheries and Wildlife at Oregon State University.

Seth helped coordinate with authors, edited articles and provided other organizational skills that were invaluable to the Western Forester.

### **Next Issue: Status of Forestry Education in the Pacific Northwest**



PHOTO COURTESY OF JAMIE BARBOUR

Forest managers and researchers visit a burned area. By working together, they hope to devise management solutions to fire.

federal government agencies, companies and nonprofit organizations. We strive to go beyond conventional bureaucratic boundaries to encourage networking among employees across a range of scientific disciplines.

Within our rolling portfolio of research topics are some issues that demand more in-depth coverage. These topics become "initiatives," or core issues, that involve a formalized two-to three- year process. Each initiative is headed by a mid- to senior-level researcher who provides technical and administrative oversight. Initiatives currently being undertaken by the FSD program include: 1) Reducing Fire Risk to People and Resources; 2) Recreation and Tourism; 3) Sustainable Wood Production; and 4) Biodiversity. In addition, there is a permanent team that assists with all research topic areas called the Science Delivery Team. Through these initiatives, we work to improve the use of science in natural resource planning and management by delivering complex information in forms decisionmakers can use.

This issue of the *Western Forester* is devoted to the FSD program. The following articles feature the initiatives mentioned above, and have been written by initiative leaders and other FSD staff. For more information, you can also visit www.fs.fed.us/pnw/about/programs/fsd/index.shtml.

We appreciate the chance to connect with practitioners, and we wel-

come correspondence, which can be directed to Program Manager Jamie Barbour as listed below. ◆

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# My Fuel Treatment Planner: An Example of Delivering Science to Practitioners

One of the ways the Focused Science Delivery Program brings science into the hands of practitioners is through the development of tools that capitalize on existing information. My Fuel Treatment Planner (MyFTP) is such a tool—a fuel treatment cost calculator that assists in determining the economic feasibility of wildfire reduction treatments.

Whether a treatment is feasible depends on many factors, including site-specific forest conditions, climate. topography, management objectives, distance to the nearest mill and the economic gain (or loss) expected in nearby communities. MyFTP takes these and other factors into account, and using accessible software (MS Excel), aids managers in the decisionmaking process. MyFTP fits into the larger vision of Focused Science Delivery by drawing on decades of existing forest data from across the western United States and by making science findings directly applicable to managers. The calculator has recently been beta-tested by a focus group and is now available online at www.fs.fed.us/pnw/data/Temp/ MyFTPbeta/.



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### The Sustainable Wood Production Initiative

BY ROBERT DEAL

o address concerns about sustainable forestry in the region, the Focused Science Delivery Program is sponsoring a three-year Sustainable



Wood Production Initiative. The Pacific Northwest is one of the world's major timber producing regions, and the ability of this region to produce wood on a sustained yield basis is widely recognized. Concerns relating to the ecological, social and economic contributions of sustainable forestry, however, will play a major role in future wood production of the region.

Sustainable forestry is related to, but different from sustained yield the amount of wood that a forest can produce continually. The Society of American Foresters (Helms 1998) defines sustainable forestry as "The capacity of forests ranging from stands to ecoregions, to maintain their health, productivity, diversity and overall integrity, in the long run, in the context of human activity and use." The Sustainable Wood Production Initiative merges evolving definitions to define sustainable wood production as the capacity of forests to produce wood, products and services on a long-term basis, in the context of human activity and use.

To identify and understand important issues for sustainable wood production, we conducted a series of client meetings and invited representatives from forest industry, small private forest landowners, state forestry and others who were interested in growing and producing wood. The single most important topic mentioned by almost all forest landowners and managers was the need to identify and understand barriers to sustain-

able forestry. Overall, our focus groups identified six major topics that affect the ability of landowners to sustainably produce wood in the region:

- 1. Identify and understand the major issues relating to wood production in the Pacific Northwest in the broad context of sustainable forestry.
- 2. Identify barriers to sustainable forestry and assess the impacts of market incentives and environmental regulations on sustainable forest management.
- 3. Develop a regional assessment of resource trends and market conditions, including the long-term economic viability of forestry in the region.
- 4. Identify and assess niche market opportunities for small woodland owners.
- 5. Identify emerging technologies for wood products and synthesize new and existing information on wood technology.
- 6. Develop a comprehensive communication strategy for reporting findings to a broad client base of land managers, researchers and the general public.

We are working with a number of university cooperators and PNW Research Station scientists to address the major issues of the Sustainable Wood Production Initiative. Our initial results suggest the following seven summary findings.

1. Private lands in the Pacific Northwest, given unchanged policies, should be able to maintain at least recent historical harvest levels over the next 50 years. These results could be realized with stable to rising inventories and nearly stable real prices. Concentration of lands in younger age and tree size classes will continue in some cases for industrial owners and to a lesser extent on non-industrial private forestlands. The pace of the shifts to more intensive manage-



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Business (206) 527-5942 • Fax (206) 522-5392 5508-35th Ave. N.E., Suite 102 • Seattle, WA 98105 E-mail: aforestburns@msn.com ment will slow in coming decades, but the proportion of harvest coming from managed stands will increase.

2. Forest products operations in the Pacific Northwest have changed dramatically over the last several decades. Observed trends include a decline in sawmill numbers, an increase in the largest sized mills, less dependence on timber from public lands, greater use of out-of-state logs by sawmills, and a decline in log exports in the last decade.

3. The renewed interest in sustainable forestry also raises questions about the role that market prices have for management decisions made by individual landowners and managers. Evidence from the Douglas-fir region suggests that management decisions have relied on sustained increases in timber prices to provide positive incentives to increase the intensity of forest management practices. We now face a future of relatively stable prices, and some forest management

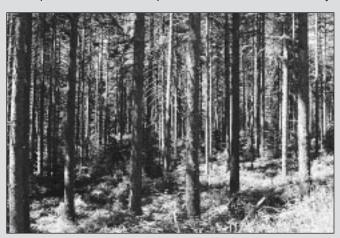
advocates are concerned that expectations of lower returns to various forestry practices may lead many landowners to respond to markets in ways that are not supportive of sustainable forest management.

4. In the Pacific Northwest, land use is dynamic and will affect the region's progress toward sustainable forestry. The region is expected to experience above-average population growth, including some in-migration of people from other regions. This will

### **Groups View Harvest Patterns Differently**

Visual preferences for six alternative harvest patterns were evaluated by various interest groups including foresters, recreationists, educators, environmentalists and the general public. Foresters tended to show significantly greater preference than most groups for harvest treatments that left moderate to large openings in forests (clearcuts, patch cuts and group selection). The preferences of educators and environmentalists were the most similar. Most groups preferred the two-aged treatment, with the exception of the environmentalists. Foresters showed higher preference for intensive forest management, while other groups indicated a lower preference for intensive forest practices.

The findings from this study suggest that in visually sensitive landscapes such as travel corridors, practices that result in greater tree retention, smaller openings and rapid green-up will serve to reduce the visual impact of timber harvest practices. These practices can also help meet other forest resource objectives such as improving wildlife habitat and biodiversity.









PHOTOS COURTESY OF GORDON BRADLEY

How people perceive different forest treatments plays an important role in the practice of sustainable forestry. Pictures like these were shown to a diverse array of survey participants and different groups of people responded in different ways. The upper left scene is a thinning (respondents had a high preference) upper right is clearcut (low preference), lower left is patch cut (medium-low preference) and lower right is two-aged (medium preference).

likely intensify land use pressures leading to increased forest fragmentation. In the most recent national comprehensive survey, the rate of conversion of rural land to developed land increased, with forestland being the largest source. More people on the national and regional landscapes will impact sustainable forestry options for agriculture, forestry, residential communities, biodiversity, and other landbased goods and services. Forest fragmentation also poses threats to wildlife in many parts of the Pacific Northwest.

5. Visual impacts of alternative timber harvest practices are important considerations when developing timber harvest plans. Determining visual preferences for different timber harvest practices is one means of identifying the visual effects of different treatments. Different groups, such as foresters, recreationists, environmentalists, educators and the general public, view harvesting practices in different ways. People tend to share a common preference for forests showing minimal disturbance, but groups are significantly different as the intensity of harvest practices increases.

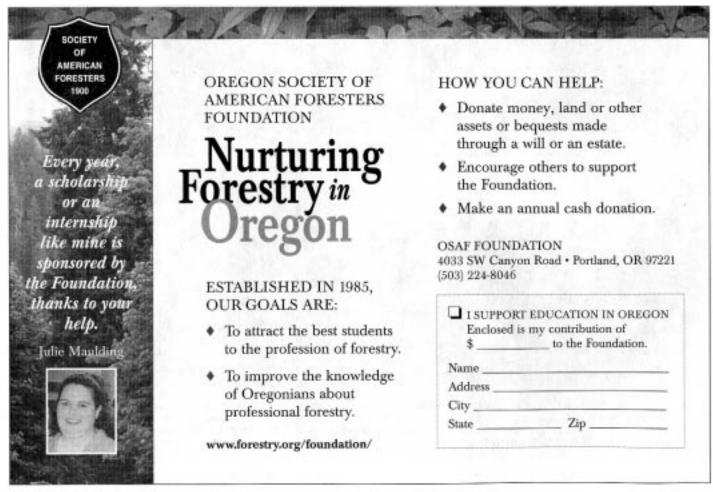
6. Riparian forest management is another important element of sustainable forestry in the Pacific Northwest and one that is the focus of forest practices regulations. These regulations have often resulted in financial disincentives for many small, family forest owners and may lead to unintended consequences such as increased land-use conversion. Alternate plans that are easy to implement are a potential solution. An integrated approach that combines forest structure and economic criteria to develop a riparian management plan for overstocked stands could provide better protection of riparian forests, sustainable economics and easier implementation.

7. Numerous small diameter trees could potentially be available for utilization from thinning forests to reduce fire hazard. However, mean lumber recovery from these logs has been reported to be very low. The wood fiber-plastic industry is ideally suited for small forest-based rural communities with plenty of available small diameter trees. Extruded woodplastic components for such end uses

as decking, molding, siding, and other pertinent structural and non-structural components is one emerging technology and process where low quality, small diameter timber could be used to manufacture value-added products.

In summary, as one of the principal timber producing regions in the world, there has been both public interest in assuring that forests are being sustainably managed and a desire by landowners and forest managers to demonstrate their commitment to responsible stewardship. The Sustainable Wood Production Initiative was developed to create a forum for discussion about these issues and provide future guidance for landowners and managers in the Pacific Northwest. •

Robert Deal is a silviculturist and research team leader for the Sustainable Wood Production Initiative of the Focused Science Delivery Program, PNW Research Station, Portland, Ore. He can be reached at rdeal@fs.fed.us or 503-808-2015.



# **Developing Tools to Sustain Biological Diversity**

BY RANDY MOLINA

he Biodiversity
Initiative strives
to provide innovative
solutions to the complex problem of
managing forests for
biodiversity.
Although this initia-



tive is in its beginning stages, an initial scoping meeting has already taken place and planning for the next steps is underway. The initiative is developing plans to conduct extensive scoping efforts in the management, agency and private sectors, and to deliver usable products through publications, workshops and meetings. The Biodiversity Initiative will focus most of its efforts in Oregon and Washington.

### **Defining biodiversity**

To many, the term "biodiversity" represents positive values of land stewardship in providing for all species and the important processes they perform in resilient ecosystems. To others, biodiversity can carry negative connotations. When thinking about biodiversity, many people tend to think of controversial topics such as old-growth forests, spotted owls and the genetic diversity of salmon in the Pacific Northwest. The act of conserving biodiversity in forest management, particularly for threatened species, has indeed been a major divisive factor in deciding how best to manage forest ecosystems for multiple values.

The Society of American Foresters' *Dictionary of Forestry* defines biodiversity as "the variety and abundance of life forms, processes, functions and structures of plants, animals and other living organisms, including the relative complexity of species, communities, gene pools and ecosystems at spatial scales that range from local through regional to global." In this context, the Biodiversity Initiative seeks to address the challenges in managing forests for biodiversity and develop science-based tools to meet those challenges.

#### Issues to address

The first task of the initiative is to

contact different stakeholder groups and identify and understand what their most important needs are so that we can prioritize our efforts. Stakeholder groups will range from state and federal agencies to private forestry companies and environmental groups. Much of the initial scoping will focus on one-on-one interviews with practitioners as well as leaders of key agencies and organizations. We also plan to conduct interactive workshops with diverse clients so that we can use opportunities for mutual learning to develop priorities for the initiative. The scoping process will also allow us to build partnerships and develop a framework for getting products to people who can use them.

### Scoping efforts include:

- Interactive workshops with a broad array of stakeholders who will discuss their unique biodiversity management issues and thus help to define the scope of the initiative and the types of products needed.
- Structured, one-on-one interviews as well as web-based surveys with agency practitioners to reveal priority issues in managing for biodiversity.
- A workshop in February 2005 at the joint meeting of the Northwest chapters of the Wildlife Society and Vertebrate Biology Society that will provide an excellent opportunity to interact on biodiversity management issues with over a hundred regional biologists, managers, and members of the environmental community.

Scoping efforts for the Biodiversity Initiative are currently being coordinated with universities and outside agencies and scheduled for completion by March of 2005.

#### **Anticipated products**

Written products will range from short, topic-specific fact sheets to detailed syntheses on broad biodiversity management issues. Presentations in workshops and conferences can offer opportunities to showcase and discuss a range of approaches to conserve biodiversity as part of the evolving paradigm of ecosystem management. Finally, we anticipate field trips where managers, researchers and the public can get first-



PHOTO COURTESY OF DAN POWELL

Shown is the fruiting body of the coral fungus, a mycorrhizal fungus with several conifer tree species. This rare fungus represents a number of poorly known, yet ecological important taxa that contribute to the healthy functioning of forest ecosystems.

hand views of a variety of management approaches, discuss effects and outcomes of the approaches, and thereby work toward consensus in managing our forests for multiple values.

Products from the Biodiversity Initiative may include:

- Regional workshops that will provide land managers tools and insights on how to manage for biodiversity.
- A national symposium that will bring together people from agencies, private landowners, representatives from nongovernment organizations, and other stakeholders.
- Publications that synthesize existing information and current needs regarding biodiversity, including professional journals, fact sheets and general technical reports published through the PNW Station.

With the Biodiversity Initiative we hope to transcend the image of biodiversity as mere controversy in the newspapers and bitter disputes in the courtroom. Rather, we operate under the assumption that biodiversity is a natural and cultural asset. By incorporating the viewpoints of diverse clients and framing the issues into management concerns, the Biodiversity Initiative supports informed natural resource management for the long-term sustainability of diverse resources. •

Randy Molina is a research botanist and Forest Mycology team leader at the Pacific Northwest Research Station in Portland, Ore. He can be reached at 503-808-3137 or rmolina@fs.fed.us.

## **Improving Our Understanding of Recreation and Tourism**

BY LINDA E. KRUGER AND SUSAN I. ALEXANDER

ver the past century. American society has changed in many ways that affect the management of natural resources for recreation and



tourism. The nation's Linda E. Kruger population is more racially and ethnically diverse. Baby boomers are reaching retirement age and many have money to travel. The nation's population has more than tripled, causing our once rural country to become urbanized. This movement toward a more fragmented rural land base has changed values and attitudes toward natural resources and recreation. While shifting from a dominant, utilitarian focus on commodity production to one that embraces other values including aesthetics and recreation, America stretches the per capita footprint ever larger. New uses and expectations often have led to contention and conflict.

The development of resorts, visitor facilities and other industries influences where people choose to live and visit. Technology also influences the kinds of activities in which people engage, and at the same time, facilitating access to resources further from city centers. Increased average income and changing work environments allow for more recreation. Walking for pleasure, photographing wildlife, birding, kayaking, snowboarding and backpacking are growing outdoor activities that use public and private land.

These increasing and more diverse demands for recreation and tourism have produced a variety of challenges for private, local, state and federal

agency resource managers. These include conflicts between recreation users, crowding at popular sites, competition between recreation and commodity production, and increased impacts on resources. More recently, people have been moving into the wildland-urban interface areas where residential development and forest meet and mix, making wild places accessible to more people, increasing the pressure on public and private lands for a different blend of goods and services than in the past, and complicating management for fire and wildlife.

To help find solutions to the complex challenges of public and private providers of recreation and tourism, the Focused Science Delivery Program is sponsoring the Recreation and Tourism Initiative. The initiative addresses several issues important for recreation and tourism, and this article summarizes five of those issues.

### **Topic 1: Assessing current** collection methods, analysis and use of recreation data

The first component of the initiative includes collecting available recreation and tourism data, identifying data gaps and analyzing the adequacy of existing measurement methods. Descriptive information on recreation use types and patterns is needed to provide baseline information for management decisions, enable the identification and assessment of trends, identify possible effects of management actions on recreation, and assess the reciprocal effects of environmental change and recreation use. Currently, descriptive information on recreation use types and patterns is inconsistently collected, and what does exist is often not available at scales useful to land managers. It is difficult to make informed decisions about resource management

that affects recreation under these conditions. Researchers are interviewing managers to better understand what measurement methods are being used. what works best and under what conditions, and how data are used in planning and management.

### **Topic 2: Understanding peoples'** connections to the land

Understanding why people care about places, the degree of attachment that they hold, the meanings they ascribe to them and how these meanings are related to expectations and visitation patterns forms a second focus of the recreation-tourism initiative. Such understanding may help identify and locate areas of public concern and interest so that management actions and promotion programs do not inadvertently impact them; conversely, this information may provide managers with opportunities to enhance delivery of recreation services to people. We are only beginning to understand how place influences recreation and tourism. The following questions are being explored: What is the relationship between place attachment—the bonds that people have for particular places—and how people recreate? What is the relationship between place attachment and the expectations people hold for management? How can a better understanding of place attachment help to inform management?

### **Topic 3: Implications for** resource-based communities

This topic explores the role of tourism in resource-based communities. It is unclear if tourism represents a viable economic development sector in communities. A prerequisite to this may be an improved understanding of the resources, skills and attributes required to capitalize on opportunities for developing an economically viable tourism industry. What do community leaders need to know in order to determine the role tourism will play in their economy? Because the types of benefits and costs

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PHOTO COURTESY OF LINDA E. KRUGER

Trails provide recreation and education opportunities for national forest visitors. Increasing visitation to popular recreation trails prompts managers to consider visitor management strategies.

from tourism differ from those associated with traditional industries, when would community residents support the transition from being a resource-based community to a "tourism community?" These issues of desirability often have not received adequate attention, and systematic evaluations are lacking.

## **Topic 4: Tools for informing decisionmakers**

The focus of the fourth topic concerns increasing the capacity of managers to make decisions about tourism and recreation. In a recent workshop, participants identified a need for understanding how and when to use existing frameworks for managing recreation and tourism, such as the Recreation Opportunity Spectrum (ROS) and Limits of Acceptable Change (LAC), for measuring management effects on recreational opportunities.

Outside of the workshop, other land managers have conferred with this sentiment. They also identified the need for innovative processes for place-based planning, broaching the following questions: How are frameworks currently being used? What factors limit their application? What adaptations might be required? How might we better incorporate social and cultural values and uses of individuals, groups and communities into multiscale risk assessments of alternative resource management strategies?

## **Topic 5: Comprehensive** valuations

Finally, valuation processes that include economic, social and cultural considerations make up the fifth topic to be researched. These processes are critical to improving and understanding the policy and land management practices that relate to tourism and recreation. Such processes are needed to better determine the full extent of costs and benefits of tourism and recreation at both the community and regional scales. Non-market valuation methods such as travel cost and contingent valuation often are used to determine the economic value of environmental resources such as recreation and wilderness activities and sites. How can we better identify the impacts and benefits of tourism and recreation at the community and regional scales? What are the contributions of recreation and tourism to national, regional and local economies? How can valuation methods be used in conjunction with recreation models such as ROS to determine demand for recreation in various places?

### **Products, outcomes and benefits**

These studies will lead to an increased understanding of the role of recreation and tourism in sustaining local communities, an enhanced ability to make informed decisions, improved integration of recreation and tourism in planning and management processes, and reduced adverse impacts among recreation, tourism and other resource values.

In addition to several workshops (including a national recreation workshop to be held in Portland, February 8-10, 2005) and presentations, a series of PNW Research Station general technical reports is being edited to communicate the results of several studies. Journal articles are also being prepared

and a series of short summaries will be available to interested individuals and community groups. ◆

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# Understanding the Role of Place

Two workshops, one for managers and one for researchers, provided a forum to examine the role of place in community development and forest management. The first workshop in November 2003 provided managers an opportunity to share their planning and public involvement techniques. Results of the workshop are being compiled and published as case study examples of field application. A workshop in April 2004 provided an opportunity for researchers to discuss the application of "sense of place" and place attachment. A small group of university participants and Forest Service researchers discussed a variety of disciplinary concepts, theories and perspectives of place.

Participants discussed how attention to place affects or transforms conflict among stakeholders and the role of place in collaborative learning and building trust and understanding. Each workshop participant is currently writing a paper about place; this collection of papers will be published later this year.



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# Reducing Fire Risk to People and Resources Initiative: INLAS

BY MARTI AITKEN AND MILES HEMSTROM

he interior Pacific Northwest is a kaleidoscope of landscape conditions, land ownership patterns and management objectives. Because of the complexity of these factors, people continue to debate how to manage forests, rangelands and aquatic systems in this area. Decades of management and fire suppression have substantially changed the area's environment and productivity from historic conditions.

The debate over how to manage federal lands has focused primarily on tradeoffs among management practices that produce goods and services, moderate natural disturbances (such as fire), and work toward the long-term conservation of federally protected plant and animal species. The Interior Landscape Analysis System (INLAS) assists managers by developing tools to link assessments of the potential effects of management decisions across disciplines and geographic scales, and helps to integrate social concerns into management decisions.

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Decisionmakers need unbiased and consistent information about the likely outcomes of different practices as they evaluate management options.

The landscape simulation tools provided by INLAS aids in the development of strategic visions for managing forests and rangelands because it provides a means to estimate the combined long-term changes from vegetation succession, management scenarios and natural disturbances. INLAS advances the integration and application of landscape models and provides tools to evaluate the effects of management on long-term trajectories of forest, range and aquatic conditions at the sub-basin and finer scales.

INLAS brought together researchers and natural resource managers from both the public and private sectors and uses consistent assumptions and common data across disciplines. To ensure INLAS is readily adaptable by managers, existing data, tools and software that managers may already be familiar with are used. INLAS enables land managers to evaluate the combined effects of management, natural disturbances and succession on current and future landscape conditions to identify possible conflicts between short-term management directions for site-specific objectives and the longterm potential for episodic and chronic disturbances. INLAS also allows managers to develop alternatives for reducing the potential adverse effects of management activities by strategically placing treatments on the landscape and scheduling treatments when they will have the least cumulative impact on other resources. INLAS enables managers to identify areas where management actions will likely contribute to the accomplishment of specific goals or when actions may be relatively ineffective over the longterm. It will also be possible to examine the long-term consequences and socioeconomic feasibility of different management approaches.

The pilot project area for the initial application of INLAS consisted of about 440,900 acres, mostly managed by the USDA Forest Service, in part of the upper Grande Ronde sub-basin just west of LaGrande, Ore. The topography in this area is highly complex, with deeply dissected drainages.





PHOTOS COURTESY OF USDA FOREST SERVICE, LAGRANDE RANGER DISTRICT

Surface (left) and ladder (right) fuels contribute to fire intensity and help initiate and propagate crown fires.

Elevations range from 2,690 to 6,990 feet. Vegetation ranges from dry bunchgrass communities to mixed conifer and subalpine fir forests. Fuel loadings are highly variable across the project area, and a number of wildfires occurred over the last 10 years, burning about 20,000 acres. Two additional large wildfires burned as much as 60,200 acres on land immediately adjacent to the upper Grande Ronde sub-basin and project area. Spruce budworm outbreaks occurred throughout the 1980s, causing extensive Douglas-fir and grand fir mortality throughout the Blue Mountains, including the INLAS project area. Outbreaks of bark beetles have also occurred in the area.

The upper Grande Ronde sub-basin has traditionally supplied timber to local mills, provided forage for domestic livestock, been a source for clean water, and provided recreational and other human benefits. In addition, it contains habitat for three terrestrial vertebrate species (Canada lynx, gray wolf and bald eagle) and three fish species (Chinook salmon, bull trout and steelhead) listed as threatened under the Endangered Species Act. About 40 additional terrestrial vertebrates of conservation concern are also likely to occur in the upper Grande Ronde sub-basin. This area also provides potential habitat for several of the 15 insect species and four plant species currently or potentially listed as threatened, endangered or sensitive in eastside forests.

With these important natural resources at stake, along with providing for other social, ecological and commodity values, land managers have an increasing need for relevant and usable tools for decisionmaking. INLAS, designed to link management decisions across science disciplines and geographic scales, is one of those tools. Information from INLAS is currently being used to formulate fuel treatment plans on the LaGrande Ranger District and will be used in helping to revise the

Wallowa-Whitman National Forest management plan. ◆

Marti Aitken is a botanist and geographic information specialist, USDA Forest Service, Forestry and Range Sciences Laboratory in LaGrande, Ore. She can be reached at 541-962-6562 or maitken@fs.fed.us. Miles Hemstrom is a research ecologist, USDA Forest Service, Forestry Sciences Laboratory, in Portland, Ore. He can be reached at 503-808-2006 or mhemstrom@fs.fed.us.

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# FIA BioSum: A Tool to Evaluate Financial Costs, Opportunities and Effectiveness of Fuel Treatments

BY JEREMY FRIED AND GLENN CHRISTENSEN

IA BioSum, a tool developed by the USDA Forest Service's Forest Inventory and Analysis (FIA) Program, generates reliable cost estimates, identifies opportunities and evaluates the effectiveness of fuel treatments in forested landscapes. BioSum is an analytic framework that integrates a suite of widely used computer models with a foun-



**Jeremy Fried** 



Glenn Christensen

dation of attribute-rich, statistically representative sample data for forested landscapes. The framework builds the analysis using comprehensive forest condition data collected by the FIA Program and GIS transportation layers that represent the costs of moving harvested material to processing sites. The analysis predicts gross revenues for delivered merchantable wood based on current product prices and "dirty chips" derived by chipping whole-tree-harvested small trees and the tops and limbs of larger trees. The dirty chips are suitable as feedstock for wood-fired electrical generating facilities, with an assumed value of \$18 per green ton. FIA BioSum also predicts harvest costs, hauling costs, and the amount of wood and dirty chips that could be accumulated at each processing site.

Scientists in the Pacific Northwest Research Station's FIA, Human and Natural Resources Interactions, and Focused Science Delivery programs initiated the collaborative development of BioSum to respond to questions posed by policymakers, Washington, D.C. office staff, and resource managers charged with implementing the Healthy Forest Restoration Act of 2003. The ongoing, three-year collaboration involves scientists and analytic staff from these PNW Station programs, fire and fuel experts, silviculturists, and forest engineers from agencies and universities outside the PNW Station who generously contributed expertise, recommendations for prescriptions and critical review to help ensure a technically sound design and analysis.

The FIA BioSum design addresses a broad array of questions such as:

- How many acres need treatment?
- Which prescriptions would be effective?
  - How much would treatments cost?
- How much woody material would be produced?
- How much of the material would be suitable for merchantable wood products?
- When would it be feasible to recover submerchantable-sized wood and use it for electricity generation?
- How many acres could be treated at no net cost and/or could negative revenues be offset by treating adjacent areas with positive revenues?
  - How would a subsidy help?

The nature of the management question determines the direction of analysis. For example, the model can estimate the effectiveness of treating an entire area for the greatest reduction in fire hazard regardless of cost, or alternatively, to estimate effectiveness of a treatment that maximizes revenue and minimizes cutting of larger trees. The different management questions and assumptions behind the analysis lead to quite different results.

Analyses have been conducted for a four-ecoregion area in northern California and western Oregon, and for the entire states of Arizona and New Mexico. These two study areas differ significantly in terms of merchantability and amounts of standing trees, climate, transportation network connectivity, spatial distribution of forest resources, and existing infrastructure for processing both biomass and merchantable-sized wood.

However, for both study areas, key assumptions strongly influence analysis results. The extent to which fuel treatments include the harvest of merchantable trees to offset the higher cost of removing small trees significantly affects the area treated. The allowance of treatments that incur net costs (i.e., requiring subsidy) rather than generating net revenues also affects how many acres can be treated.

Model results for the Oregon and California study area indicate that less than half of the forested acres are suitable for treatment due to access, reserved status or a lack of sufficient basal area to apply treatments. On the nearly four million acres that could be effectively treated (out of 17 million acres at risk), treatment costs were high when the harvest of large trees was minimized. If treatments are restricted to areas where they would generate positive net revenue, the potential area for treatment dropped to about two million acres.

Preliminary results for Arizona and New Mexico are somewhat comparable, albeit involving quite different treatments and hazard and effectiveness criteria. About 5.5 million acres can be treated effectively for a net cost of about three billion dollars. When imposing the positive net revenue criterion, the effectively treated area dropped under a million acres, with a net revenue of around \$300 million. In this case, introducing a subsidy that would ensure treatment where costs run as high as \$200 per acre (after accounting for revenues from selling harvested wood) resulted in doubling the treated area.

In both cases, these results represent upper-bound estimates and depend on the willingness of private landowners and agency managers to use cost-minimizing, fuel treatmentinspired prescriptions rather than profit-maximizing treatments. The driving factors of high treatment costs are relatively low product values, particularly for dirty chips. Maximizing the area treated leads to net costs rather than revenues, even before considering the

cost of transporting harvested materials and even when relying on the use of the most cost-efficient prescription for each acre treated. Transportation costs account for about a third of the total cost when considering treatable acres. These costs are simulated using a representation of the real road network that accounts for varying speeds and the often circuitous routing required to move material to a mill. If the haul cost to the processing site is calculated as a crow flies, cost estimates drop to only half of the real road value. A railroad transportation option in Arizona and New Mexico reduced net costs there by 20 percent over a road-only transportation system.

With four well-distributed processing sites in western Oregon and northern California (see figure 1) and six in Arizona and New Mexico, some of the treatable areas were still too far away from the processing sites to feasibly transport dirty chips, because the expected haul cost would be greater than the expected value of the material. One

apparent solution might be to simply create more processing sites, yet even for the best of the limited number of sites included in the model to date, available material, without subsidy, would be exhausted in less than 10 years depending on study area and location, and in less than 20 years with considerable subsidy. Another option would be to treat the small-diameter material, from which dirty chips are derived, at the landing. The new technology of air curtain destructor burners that consume the material while generating very little smoke is being used more frequently and costs about the same as chipping the material, but avoids the costs of transport out of the woods.

One key finding from BioSum modeling efforts is that the extent of the fuel treatment challenge is, in some ways,

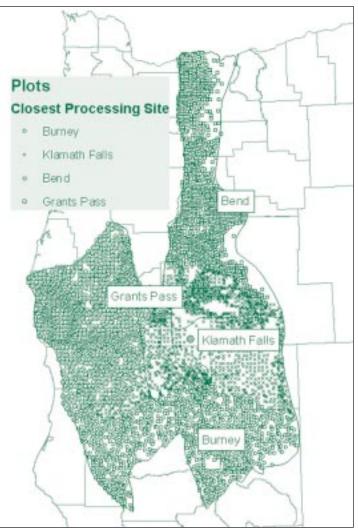


Figure 1. Locations of FIA field plots and potential processing sites (large circles) for wood and dirty chips. Field plots are attributed by the processing site to which they are closest in haul-cost space.

much smaller than some of the area estimates that have circulated in the policy arena. Although most of the forest in the areas studied is currently in a condition of high fire hazard, less than half of this area is accessible and effectively treatable by silvicultural prescription, and only a fraction of this can be treated at no net cost. In both study areas, federal land comprises by far most of the area that could potentially benefit from fuel treatments, while private lands account for 50-90 percent of the treatable acres in the wildlandurban interface. These findings have important policy implications if the wildland-urban interface remains a high priority for fuel treatment.

If fire hazard reduction is to occur at anything approaching a landscape scale, a diverse range of treatments will likely be considered. Where high costs

limit mechanical thinning of ladder and crown fuels. as they do in much of the study area considered here, prescribed fire may be a viable option. A range of funding and incentive mechanisms may be employed to expand the area treated beyond what would be treated if treatments had to pay for themselves, from selling harvested timber to stewardship contracting to direct subsidies in some cases. Besides being unrealistic, requiring that all fuel treatments pay for themselves may well be short-sighted—especially given the potentially significant benefits such treatments may produce in the form of reduced fire hazard and firefighting costs over the broader landscape.

Work is needed to develop reliable economic approaches that can be used to estimate likely reductions in firefighting costs, property losses and the depressive effects of fire on recreation, tourism and timber revenues that could be attributable to fuel treatments. It is quite possible

that costs and losses avoided may well justify wider deployment of fuel treatments. ◆

Jeremy Fried is a team leader and research forester and Glenn Christensen is a forester, USDA Forest Service, Pacific Northwest Research Station, Forest Inventory and Analysis Program, Portland, Ore. They can be reached at 503-808-2000 or jeremy.fried@fs.fed.us or glenn.christensen@fs.fed.us.

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# **SpaRSS: Supporting Decisionmakers with User-Friendly Spatial Analysis Tools**

BY RONALD E. McROBERTS, KRISTA M. GEBERT AND IAMIE BARBOUR

and managers recognize that making decisions about natural resources increasingly requires analyzing spatial data in the forms of maps and digital data. While spatial maps and digital data are



Ronald E. McRoberts

rapidly becoming available, the tools to analyze and make sense out of them are typically not available. The Spatial Resources Support System (SpaRSS) fills this gap by providing spatial analysis tools to support decisionmaking.

SpaRSS is a geographic information system (GIS)-based spatial resource support system that incorporates digital data layers and provides user-friendly tools for analyzing spatial data, but does not require a high level of spatial or GIS skills. The objective of SpaRSS is to provide support by assembling relevant, digital data lay-

ers; analyzing integrated, spatial data; and comparing the results of different decision alternatives.

Here are some examples of the types of data layers contained in the SpaRSS database:

- 1. *Census data:* Population centers and distance to population centers;
- 2. *Socio-economic*: Measures of income, mill locations and wildland-urban interfaces:
- 3. *Abiotic:* Drought and fire risk indices, locations of historic forest wildfires and digital elevation models; and
- 4. *Biotic:* Forest location, historic natural fire regime, fire condition class, fuel loadings and treatment opportunities.

SpaRSS provides tools for accomplishing three categories of GIS tasks: portraying data layers, integrating data layers and providing estimates in tabular form.

Portrayals may be for categories or groups of categories of data layer variables, or they may be for only those grid cells satisfying selected threshold criteria. Integrating data layers may be accomplished either by a portrayal of one data layer over another, or by combining the values of two or more

data layers on a cell-by-cell basis.

Three approaches for combining values are available: *intersection*, where selected grid points of all layers simultaneously satisfy threshold criteria; *addition*, where the sum of values for all layers for selected grid points satisfies a threshold criterion; and *multiplication*, where the product of values for all layers for selected grid points satisfies a threshold criterion.

With all three approaches, individual data layers may be weighted to reflect the importance the decision-maker wishes to attach to layers. Weighting data layers is particularly useful when objective standards for thresholds do not exist or when decisionmakers wish to incorporate the relative importance of a particular value or set of values. Finally, debates about whether the perceived importance of data layers matches outcomes can be informed through the use of thresholds and weights.

Among forestry issues for which spatial analyses are appropriate, none may be more crucial at present than the mitigation of wildfire risk, prioritization of associated management activities and allocation of funding. Scientists from three USDA Forest Service Research Stations collaborated with Cooperative Forestry of State and Private Forestry to develop the prototype for SpaRSS. The intent was to develop a defensible method for allocating National Fire Plan funding to national forest regions.

The immediate objective was to identify forested areas in the United States that satisfied three criteria: having high wildfire risk, being in close proximity to populated areas and being suitable for treatment to mitigate wildfire risk. Nationally consistent digital data layers were found or created for human communities and for ecosystem categories.

For the human communities category, U.S. Census data were used to depict the population centers having 100-50,000 persons, an operational Cooperative Forestry definition of "rural."

The ecosystem category consisted



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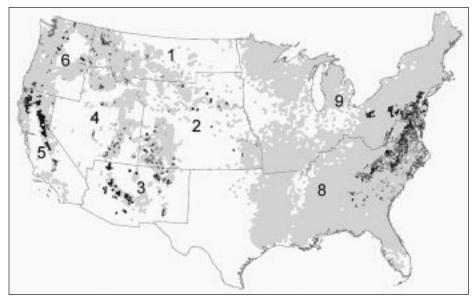


Figure 1. Using decision support tools provided by SpaRRS, these black areas were selected as high priority for wildfire mitigation at the end of summer 2003.

of two factors: abiotic and biotic. The abiotic factor was assessed using the Palmer Drought Index (Heim 2000), while the biotic factor was assessed using three data layers: historic natural fire regime, current fire condition class (Schmidt et al 2002), and mitigation vield. Historic natural fire regime describes the frequency and severity of fires represented by pre-settlement, historical fire processes; and current fire condition class describes the relative risk of losing one or more key components that define an ecosystem. Mitigation yield estimates the biomass that may be removed from overstocked forest stands to promote more optimal forest conditions. The assumption is that reducing overstocking also mitigates fire risk.

The data layers were integrated using the *intersection* approach to produce a map representing forested areas that satisfied the above criteria. Figure 1 and Table 1 illustrate the results from the following combination of threshold values: areas of the

country within 30 miles of population centers having 100-50,000 residents, the top 50 percent of the nation having the most severe drought conditions, the historic natural fire regime class with a fire return interval 0-35 vears, the two current fire condition classes depicting the greatest fire risk, and the top 50 percent of the forested portion of the nation with the greatest mitigation yield values. The area selected in a particular national forest region, as a proportion of the total area selected nationally, provided an objective estimate of the proportion of funds that should be allocated to that region.

These results illustrate how spatial information can be used when combined with GIS tools for assisting decisionmakers in the natural resources field. Decisionmakers frequently do not possess or do not have access to the GIS expertise necessary to integrate, analyze and interpret relevant data layers. SpaRSS has been specifically designed to fill this gap by providing accessible,

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National Forest Region		Acres selected (millions)	Proportion of total area selected	
1	NO	11.3	0.155	
2	RM	8.0	0.109	
3	SW	6.9	0.094	
4	IM	2.6	0.036	
5	PSW	13.5	0.185	
6	PNW	9.3	0.127	
8	SO	13.1	0.179	
9	Е	8.4	0.115	
Total		73.1	1.000	

Table 1. Areas selected by national forest region at the end of summer 2003.

user-friendly, functional spatial analysis tools to decisionmakers. ◆

Ronald E. McRoberts is a mathematical statistician and the group leader for Research with the Forest Inventory and Analysis program of the North Central Research Station, USDA Forest Service, in St. Paul, Minn. He can be reached at 651-649-5174 or rmcroberts@fs.fed.us. Krista M. Gebert is an economist with the Economic Aspects of Forest Management on Public Lands unit at the Rocky Mountain Research Station in Missoula, Mont. She can be reached at 406-542-4174 or kgebert@fs.fed.us. Jamie Barbour is program manager for the Focused Science Delivery Program, PNW Research Station, in Portland. Ore. He can be reached at 503-808-2542 or jbarbour01@fs.fed.us.

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# **Science Delivery Initiative Aims** to Get the Word Out

BY MILES HEMSTROM

he Science
Delivery
Initiative of the
Focused Science
Delivery Program
has one major
objective: To provide relevant science



information to our clients in a way that is easy to use and understand. Meeting this objective is not as easy as the simple application of traditional "technology transfer" methods, where transfer often consists largely of published, journal-level papers. We have to understand who our clients are, what they need and how to effectively provide the information they need. We must go beyond traditional notions of technolo-

gy transfer and find new ways to engage partners and serve clients.

The vast reservoir of existing scientific data may not be particularly helpful to land managers and policymakers. Scientific information often exists as "factoids," snippets of isolated information that have not been synthesized into a whole body of thought that applies to an issue or problem. Scientific information often resides in obscure places and in inaccessible forms—journals to which the practitioner does not have easy access, and language full of jargon and highly technical dialog. Field practitioners and managers simply don't have the time to pore over dense manuscripts, even if they are readily available. Scientific factoids often lie in jungles of caveats, long tables, dense figures and so forth.

This is not to imply that caveats should be ignored, but that the delivery of science to practitioners should allow for synthesis, easy language and delivery formats that are effective.

As scientists, our inclination is to develop new studies to address problems that arise, in part, because the reward system for scientists requires production of "new science." But new research might not always provide the most efficient or timely solutions for emerging management and policy issues.

The Focused Science Delivery Program, Science Delivery Initiative and Science Delivery Team all build on our capability to use what we already know. The program has science delivery as its major objective. The Science Delivery Initiative is a specifically funded effort to develop science delivery methods. As with other PNW Station initiatives, this is a short-term (several years), highly focused research effort. And the Science Delivery Team is a small group of writers and scientists dedicated to carrying out the initiative. All this is not purely a matter of acting as information brokers and uniting users with existing scientific products. Nor is it solely the skill of writing creatively about existing scientific data and repackaging it to provide information to address user questions. The Science Delivery Initiative often engages in synthesis of existing knowledge, such as building landscape models that integrate existing information in new ways to address natural resource management issues, or bringing practitioners and researchers together to discuss barriers and opportunities for effective land management.

The role of the Science Delivery Initiative is to extract additional meaning from existing scientific data by combining information from both related and seemingly unrelated sources to reveal trends and relations that might not initially have been apparent. The initiative solves problems by forming partnerships with those who need new knowledge and those who generate the data and information required to develop this knowledge. By understanding the anticipated applications of our outputs, we work to align products to meet client needs and provide timely and cost effective solutions to user problems.

A few examples illustrate some of

### **Bridging the Worlds of Fire Managers and Researchers**

Seth White organized and synthesized the information presented at a series of

workshops designed to bring managers, researchers and others together for in-depth discussions about fire, recommendations for fire research and to build collaboration between researchers and those who need research information. The result was a PNW Research Station general technical report (PNW-GTR-599) that describes fire research in easy-to-understand terms with abundant photographs and other illustrations.



PHOTO COURTESY OF SETH WHITE

A field trip in the Coronado National Forest, site of the 2002 Bullock Fire, provided a venue for researchers and managers to interact about wildland fire issues.

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(541) 683-8383 Fax: (541) 683-8144 www.leiinc.com 1243 West 7th Ave. Eugene, Oregon 97402 the approaches the Science Delivery
Team takes to meet client needs. One
approach is to arrange what we call
"science-management interactions."
We believe information that addresses
many management issues can be
delivered through the simple expedient
of putting clients in direct contact with
scientists who are in a position to provide the relevant information.

Managers are too busy to track down the scientists who might have relevant information and scientists are too busy to do much more than find funding, do research and write journal articles. The worlds of managers and scientists are large and complicated, and random chance alone might not be enough to get managers and scientists engaged in focused, prolonged discussion. The Science Delivery Initiative improves those odds. Science-management interactions carve out a day or two from busy lives for face-to-face discussions. This assists both the managers, who might find a wealth of information they didn't know existed, and the scientists, who might find willing partners and fulfilling application of their work (see bridging the worlds sidebar).

A second approach is the generation of new syntheses from the literature or other existing pools of information. This might be merely a literature search and a quick write-up including an annotated bibliography. More frequently and perhaps more usefully, it

could be a literature search combined with information synthesis and production of a targeted product such as an article for the popular press, a series of presentations and meetings, or one-on-one visits with practitioners for discussions and consultation (see science management interaction sidebar).

A third approach is the integration of existing information into a new model that shows how management approaches might affect natural disturbances and important resources. In this case, the modeling framework is a vehicle for integration and synthesis driven directly by management concerns rather than a pursuit of new theoretical frameworks.

For example, a landscape model might incorporate existing information about vegetation dynamics, natural disturbances, management effects. wildlife habitats, fire risks and other features to show how they interact in an area of high management interest. The model (see the landscape modeling sidebar) stitches together ecological processes, management activities, wildlife habitat and fire to reveal synergies and interactions that would otherwise go undetected. The model builds on existing knowledge and, in the process, may reveal new understanding while avoiding the complications involved in making an entirely new ecological model framework. This does not diminish the need for a more basic understanding of the natural

world. Instead, the process integrates complex science in a way that managers may find easier to use. Basic research pushes against the frontiers of understanding while integrated landscape models synthesize basic research together to answer important management questions.

The Science Delivery Initiative and Team aim for integration and utility that helps land managers and policymakers while providing a link to basic research. We ask what our clients need and want as a foundation for designing effective information transfer. In a world of sometimes overwhelming scientific information, the Science Delivery Initiative and Team are the small tool kit and mechanics that turn knowledge into useful products. ◆

Miles Hemstrom is a research ecologist for the Portland Forestry Sciences Lab in Portland, Ore. He can be reached at 503-808-2006 or mhemstrom@fs.fed.us.

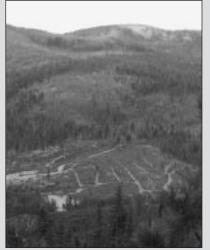


PHOTO COURTESY OF STEVE WONDZELL

### **Landscape Modeling**

Miles Hemstrom is working with a group of scientists to build landscape models that reflect current understanding about how management, natural disturbances and vegetation development interact to produce wildlife habitat, potentially useful forest products and fire risks or potentials in a large landscape near LaGrande, Ore. The modeling process synthesizes complex ecological and management interactions in ways that land managers can understand and use.

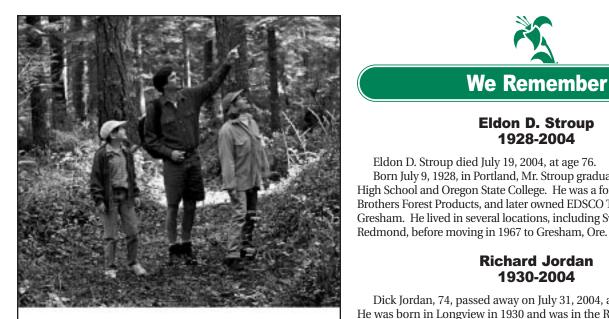
### Science Management Interaction on Headwater Springs

Gary Benson organized a one-day meeting between researchers who are highly knowledgeable about the hydrology and physical and ecological characteristics of high Cascades spring systems that form the headwaters of many streams and rivers in western and central Oregon. The discussion will be used to produce a written document that addresses important management concerns with the most current knowledge on



PHOTO COURTESY OF MILES HEMSTRON

spring systems. Perhaps more importantly, the interaction introduced land managers and policymakers with key scientists who might help them understand the interactions of management activities on important natural resources.



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### **We Remember**

### Eldon D. Stroup 1928-2004

Eldon D. Stroup died July 19, 2004, at age 76. Born July 9, 1928, in Portland, Mr. Stroup graduated from Commerce High School and Oregon State College. He was a forester for Caffall Brothers Forest Products, and later owned EDSCO Timber Co. in Gresham. He lived in several locations, including Sweet Home and

### Richard Jordan 1930-2004

Dick Jordan, 74, passed away on July 31, 2004, after a long illness. He was born in Longview in 1930 and was in the RA Long High School class of 1948.

Mr. Jordan was a graduate of the University of Washington's College of Forest Resources and spent a lifetime working in the forest products industry. He was the author of "Trees and People, Forestland Ecosystems and our Future." He served on the Board of the American Forestry Association and was president of High Mountain Associates, a marketing consulting firm to the industry. He retired to Longview, Wash., in 1996. An SAF member since 1973, he was a member of the Longview Chapter and helped out at the Longview Fifth Grade Forestry Field Days.

Memorial contributions may be made to the Forest Learning Center, PO Box 188, Longview, WA 98632.

### **Bob Torheim** 1923-2004

Bob Torheim was 81 when he died in Portland on July 26. He leaves behind a lifetime of memories of service to his family, friends and country. He graduated from Roosevelt High School in Seattle, joined the Civilian Conservation Corps, served in World War II in the European theater, and graduated with a degree in forestry from the University of Washington.

Mr. Torheim grew up on the fringe of Seattle. He hunted and fished a lot and got to like the wild country. But it was at Civilian Conservation Corps camp that he fixed his mind to become a forester.

His career in the Forest Service began in 1948 and continued for 31 years. It took him to the Snoqualmie and Olympic National Forests in the state of Washington, the Rogue River National Forest in Oregon, and national responsibilities in Washington, D.C. He was named deputy regional forester in the Portland office and retired as regional forester in Missoula overseeing the national forests of Montana, Idaho, South Dakota and North Dakota.

Service to the state of Oregon included being called upon by Governor Tom McCall in 1971 to join an 11-member steering committee whose purpose was to develop new management training programs for Oregon State Government Managers. He was also a founding member of the World Forestry Center in Portland.

In retirement, he continued his service as the regional representative for Oregon and Washington for the American Forestry Association and was named a Fellow in the Society of American Foresters. He was an active member of the local CCC Alumni Chapter.

He and his wife, Marjean, were active in the Summerfield Golf Community and spent time traveling to China, Norway, Sweden and the

In lieu of remembrances, Bob would ask you to take a drive or a hike through our public forests and enjoy the natural beauty of the Northwest.

### **Calendar of Events**

### **UNIVERSITY-SPONSORED EVENTS**

Course	<u>Dates</u>	<u>Sponsor</u>	<b>Location</b>
Ponderosa Pine: Management, Issues and Trends	Oct. 18-21	OSU	Klamath Falls, OR
Third International Precision Forestry Symposium	Oct. 24-26	UW	Seattle, WA
Technology Transfer by the Rural Technology Initiative	Nov. 5	UW/WSU	Seattle, WA
BEHAVEPlus, Fuel Models, and FARSITE Workshop	Nov. 16	WSU	Spokane, WA
FCCS Fuel Characteristic Classification Systems Workshop	Nov. 16	WSU	Spokane, WA
FRCC Fire Regime Condition Class Workshop	Nov. 16	WSU	Spokane, WA
NEXUS Workshop	Nov. 16	WSU	Spokane, WA
Swiss Needle Cast Conference	Nov. 16	OSU	Eugene, OR
Sudden Oak Death and Forestry Workshop	Nov. 17	OSU	Eugene, OR
Mixed Severity Fire Regimes: Ecology and Management Symposium	Nov. 17-19	WSU	Spokane, WA
Saving Washington's Working Forests	Nov. 22-23	UW	TBA
Fundamental Training and Applications of the LMS Workshop	Dec. 8-10	UW/WSU	Mt. Vernon, WA
Introduction to GIS Applications in Natural Resources with ArcGIS	Dec. 9-10	OSU	Corvallis, OR

### **OTHER EVENTS**

Gaining Access Across Federal Lands: Processes and Procedures Explained, Oct. 18, Wilsonville, OR. Contact: WFCA.

**Professional Timber Cruising,** Oct. 20-21, Beaverton, OR. Contact: Atterbury Consultants.

**GPS for Mobile Professionals,** Oct. 27, Beaverton, OR. Contact: Atterbury Consultants.

**Harvest Planning,** Nov. 1 and Jan. 24, Corvallis, OR. Contact: Forest Engineering.

**Skyline Payloads,** Nov. 2 and Jan. 25, Corvallis, OR. Contact: Forest Engineering.

**Multi-span Systems,** Nov. 3 and Jan. 26, Corvallis, OR. Contact: Forest Engineering.

Understanding the SFI® Core Indicator for Critically Imperiled and Imperiled Species: A Focus on Plants, co-sponsored by SAF Northwest Office, Nov. 3, Wilsonville, OR. Contact WFCA.

Visual Resource Management: Principles and Applications, Nov. 3, Wilsonville, OR. Contact: WFCA.

**Guying & Anchoring,** Nov. 4 and Jan. 27, Corvallis, OR. Contact: Forest Engineering.

**Cost Control,** Nov. 5 and Jan. 28, Corvallis, OR. Contact: Forest Engineering.

**Fuel Reduction,** Nov. 9-10 and Jan. 19-20, Corvallis, OR. Contact: Forest Engineering.

SuperACE 2004, Nov. 10, Beaverton,

OR. Contact: Atterbury Consultants.

**Basic Road Design,** Nov. 15-18 and Jan. 11-14, Corvallis, OR. Contact: Forest Engineering.

**Location,** Nov. 29, Corvallis, OR. Contact: Forest Engineering.

**Horizontal Control,** Nov. 30, Corvallis, OR. Contact: Forest Engineering.

**Vertical Control,** Dec. 1, Corvallis, OR. Contact: Forest Engineering.

**Construction Control,** Dec. 2, Corvallis, OR. Contact: Forest Engineering.

**Water Control,** Dec. 3, Corvallis, OR. Contact: Forest Engineering.

**Cable Logging,** Dec. 7-10, Corvallis, OR, and Dec. 13-16 in Eureka, CA. Contact: Forest Engineering.

**Native Plants,** Dec. 15-16, Eugene, OR. Contact: WFCA.

**Joint OSAF/WSSAF Leadership Conference,** Jan. 15-16, 2005, Hood River Inn, Hood River, OR. Contact: Sue Bowers at 541-895-5549 or sbowers@epud.net.

Inland Empire, Oregon and Washington State SAF Tri-state Annual Meeting, Apr. 13-15, 2005, Lewiston, Idaho. Contact: Terry Shaw at 208-885-7452 or tshaw@uidaho.edu.

#### **Contact Information**

**OSU:** OSU College of Forestry Outreach Education Office, Peavy Hall 202, Corvallis, OR 97331-5707; 541-737-2329; http://outreach.cof.orst.edu/.

**WSU:** Extension Meeting Management and Program Support, Washington State University, P.O. Box 646230, Pullman, WA 99164-6230; 509-335-2811.

**WFCA:** Western Forestry & Conservation Association, 4033 SW Canyon Rd., Portland, OR 97221, 503-226-4562; richard@westernforestry.org; www.westernforestry.org.

**Atterbury Consultants:** 3800 SW Cedar Hills Blvd., #120, Beaverton, OR 97005; 503-646-5393; jaschenbach@atterbury.com; www.atterbury.com.

**UW/WSU:** Rural Technology Initiative, University of Washington, Box 352100 Seattle, WA 98195; 206-543-0827; www.ruraltech.org/training/.

**UW:** Bob Edmonds, College of Forest Resources, Box 352100, University of Washington, Seattle, WA 98195; 206-685-0953; bobe@u.washington.edu; www.cfr.washington.edu/events.

**Forest Engineering Inc.,** 620 SW 4th Street, Corvallis, OR 97333; 541-754-7558; office@forestengineer.com; www.forestengineer.com.

Send calendar items to the editor, *Western Forester*, 4033 SW Canyon Rd., Portland, OR 97221; fax 503-226-2515; rasor@safnwo.org. The deadline for the November/December 2004 issue is October 18, 2004.

### **Look to Lewiston in 2005**

BY MICHAEL STERNER

t is time to start planning to attend the SAF Tri-Society Annual Meeting. The 2005 meeting is scheduled for April 13-15 in Lewiston, Idaho, and includes the Oregon, Washington State and Inland Empire societies. In keeping with the bicentennial of the Lewis and Clark Expedition, the theme of the meeting is Corps of Discovery: Foresters Walking in the Footsteps of Lewis and Clark.

The program will focus on three major subjects of interest to Northwest foresters: forest history, fire and the Healthy Forests Restoration Act. These are interwoven subjects that affect foresters and all residents of the Northwest daily. The program is certain to offer information relevant to all forestry practitioners and researchers including discussion of late-breaking policies, debate of current issues, and analysis of historical events related to forests.

When the Corps of Discovery emerged from the Bitterroot Mountains they were thinking about some of the same things that interest us today, namely, the natural wealth of the Northwest. Timber was not recog-

nized as a scarce resource in their day, but the expedition was driven by a keen interest in the flora and fauna of the United States and the opportunity for commerce in the newly acquired territories of the Louisiana Purchase. A Northwest symbol, the salmon, saved the Corps from starvation upon entering Nez Perce territory in the watersheds of the Columbia and Snake Rivers. The theme of the meeting highlights the fact that forest history is an essential part of American history. Foresters know this and the meeting will provide a chance to send the message out to the general public.

Already several of the speakers have been identified. Former Oregon governor John Kitzhaber will be a keynote speaker presenting his vision for scientific and objective public land management. Gail Wells, a natural-resources writer, and Jim Fazio, resource and conservation history professor at the University of Idaho, College of Natural Resources, will speak on the subject of Lewis and Clark and forest history. Penny Morgan, fire ecologist professor at the University of Idaho, College of Natural Resources, and Jerry Williams, USDA Forest Service director of Fire and Aviation Management in

Washington, D.C., will speak on the topic of fire. A panel on the last day will address some of the emerging issues in forest management for both east- and westside forests.

Field trips will be a key part of the meeting and will allow participants to get out in the woods to see local forest practices and the impressive landscape of northern Idaho. Meeting participants will be able to enjoy a history tour on the Snake River Hells Canyon.

Another tour will look at Healthy
Forests Initiative using active forest management examples from federal and possibly Tribal lands. A third tour will visit a sawmill, see examples of FSC certification, and visit a local nursery.

Many meeting attendees may decide to stay for the weekend to enjoy the many outdoor recreation opportunities around Lewiston. The area offers hiking, camping, fishing, golf and access to Hell's Canyon. More information is available on the Lewiston Chamber of Commerce website at www.lewistonchamber.org.

Although it took Lewis and Clark over one month to return up the Columbia to present-day Idaho, Lewiston is just a six-hour drive from western Oregon and Washington. Watch future issues of the *Western Forester* for registration information and news on the meeting program. •

Michael Sterner, a Portland Chapter member, is chair of the Tri-State Annual Meeting Public Relations Committee. He can be reached at 503-478-0800 or msterner@iforest.com.



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# **Ken Galloway Retires**

en Galloway
Jr. retired as
the county
forest manager for Hood
River County,
Ore., in
February.

He worked summers for

Weyerhaeuser in Klamath Falls, Ore., in the Forestry Department, and upon graduation in 1970 from Oregon State University with a B.S. in Forest Management, he was employed by Weyerhaeuser in North Bend, Ore., in the Allegany logging department.

In 1974 he accepted the county forest manager position for Hood River County, managing 32,000 acres of forestland. During his employment he also managed at times the County Public Works Department, Parks Department and the Weed and Pest Department. From land exchanges, the county owned and

managed over 49,000 acres of forestland in three counties in Oregon when he retired. He has been active in SAF since 1970. ◆

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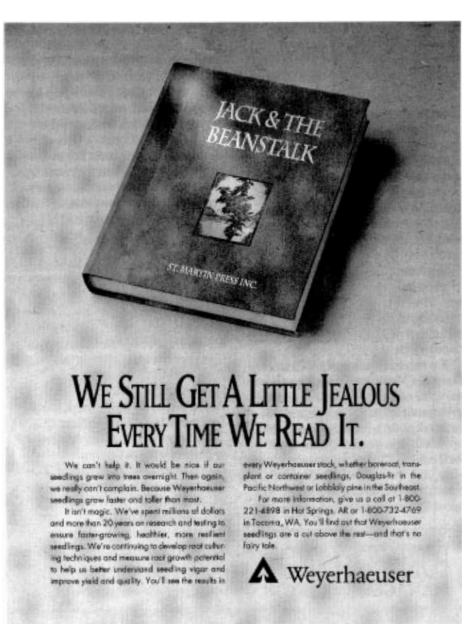


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## **Student Receives Scholarship**

he Society of American Foresters recently recognized students and the Green River Community College (GRCC) Student Chapter of SAF.

Wayland Witten, 2003 Student Chapter chair, was awarded a scholarship to attend the Joint SAF/CIF 2004 Annual General Meeting and Convention held in October in Edmonton, Alberta, Canada.

The diversity scholarship covers convention registration fee, hotel and travel expenses, and is intended to help students excel in the natural resource profession and to experience SAF at a national level. As a Diversity
Ambassador, Wayland will attend meetings, participate in roundtable discussions, provide short speeches of his experiences, interact with student delegates and meet with the SAF leadership. The Committee on Cultural Diversity also expects the scholarship recipients to continue their involvement in activities to promote the mission of the committee at their institutions.

Competing against universities, the GRCC Student Chapter of SAF was given recognition in competing for the 2004 SAF Outstanding Student

# **Tracking CFE Credits is Easy**

AF proudly announces the launching of a new online continuing forestry education (CFE) database system that allows you to submit continuing education credits directly into your membership or Certified Forester® record at any time. You no longer need to fax, mail or email CFE forms or agendas to the national office to log your hours!

Simply log onto www.safnet.org/ events/cfe/ and enter your username and password (your username is your membership ID number or Certified Forester number, and your password is your last name). From there, select the meetings that you attended from the online education calendar. If the meeting is not listed, the system allows you to enter the meeting and other continuing education categories before you submit the information. At the end of the process, you can print out the hours you submitted and keep the record in your files. However, please keep documents related to your continuing education activities for your personal records. SAF conducts random audits of selected records. ◆

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Chapter Contest.

Carol J. McKernon, SAF member services manager, wrote to current Chapter Chair Leslie Meier:

"The judges were particularly impressed with the Green River Community College entry because yours is a two-year program. Your participation within the community, within the college, and within the SAF is most impressive."

The GRCC Student Chapter will host a chapter meeting for the South Puget Sound SAF Chapter in October. The theme is "Mentoring Night." ◆

# **National Ballots Due**

ational ballots for SAF vice president and several Council positions were mailed to all voting members on September 1. All ballots must be received in the national office by October 22 to be counted.

Running for SAF vice president are Marvin Brown, state forester for the Oregon Department of Forestry in Salem, and Bill Rockwell, president of Strategic Resource Systems in St. Johns, Michigan.

Four voting districts, including Oregon's, will be electing a new Council representative to serve a three-year term beginning January 1, 2005. Ann Forest Burns continues to serve as District I (Washington State, Inland Empire and Alaska) Council representative through 2005.

Rick Barnes of Roseburg and Dan Green of Lake Oswego are running for the Voting District II (Oregon) Council position. Both are consulting foresters.

Voting District V (Iowa, Michigan, Minnesota, Wisconsin) has three members running: James Brooks, Bernard Hubbard and Brent Olson. Running for Council in the Appalachian Society (Voting District VIII) are Fred Cubbage, William Rilee and Eugene Robbins. Voting District XI, which represents Louisiana, Mississippi and Texas, sees Bob Daniels and William Wieger running for Council.

Campaign statements and biographical information are included in the election materials. ◆



### **Policy Scoreboard**

Editor's Note: To keep SAF members informed of state society policy activities, Policy Scoreboard is a regular feature in the Western Forester. The intent is to provide a brief explanation of the policy activity—you are encouraged to follow up with the listed contact person for detailed information.

**State Forest Initiative on November Oregon Ballot.** After several thousand supplementary signatures were turned in just before the July 2 deadline, Measure 34 was certified for the November 2004 Oregon ballot.

Measure 34 has been called the "50-50 Plan," as it would require 50 percent of the Tillamook-Clatsop State Forests to be managed for "permanent restoration of a native old-growth forest" and the balance for "sustainable timber and revenue production." It would override the management plan for these forests adopted in 2001 by the Board of Forestry. Instead, Measure 34 would require the heads of three state university biology departments to appoint a technical team whose recommendations would be used to craft a new plan to establish and restore permanent old-growth preserves on 50 percent of the land area. As required by state law, estimates of the financial impact to state and local governments have been made and will appear on the ballot.

The full text and ballot information for Measure 34 can be found at the Secretary of State's web site at www.sos.state.or.us/elections/nov22004/g04\_meas.html. Contact: Paul Adams, OSAF Policy chair, 541-737-2946; paul.adams@oregonstate.edu.

### **OSAF Continues Work on New and Revised Position Statements.** The

OSAF Policy and Legislation Committee continues to work on some new and updated position statements, which will add to the four adopted in 2003. Because oldgrowth forests remain an important, ongoing issue, a position statement on this topic

has been drafted. The nature and complexity of this issue presents some major challenges, however, and thus the process for refining and adopting this position is expected to span several months. OSAF's statement on "Fish and Riparian Forests" was extended through December 2004, but an update of this 1998 statement is expected by this date. A new topic that is being considered for a position is biomass energy from Oregon's forests, given the limited attention now given by decision makers and the public to this unique opportunity.

All of these statements are on the OSAF website (www.forestry.org). Contact: Paul Adams, OSAF Policy chair, 541-737-2946; paul.adams@oregonstate.edu.

**Update: President's Healthy Forests Initiative.** The USDA Forest
Service website (www.fs.fed.us/projects/
HFI.shtml) is a good source for keeping up
to date on the many policy activities associated with the President's Healthy Forests
Initiative, including the Healthy Forests
Restoration Act signed into law in
December 2003. An interim field guide for
implementation of the HFI & HFRA was
published in March 2004 and is available at
www.fs.fed.us/projects/hfi/field-guide/.

#### **Update: Stewardship Contracting.**

208-885-5776; jayo@uidaho.edu.

Contact: Jay O'Laughlin, IESAF Policy chair,

The Forest Service and BLM have issued final guidance to their field offices on how to develop, implement and monitor stewardship contracts and agreements. Through broad-based public and community involvement, stewardship contracting is intended to achieve key land-management goals that improve, maintain or restore forest or rangeland health; restore or maintain water quality; improve fish and wildlife habitat; reestablish native plant species and increase their resilience to insect and disease; and reduce hazardous fuels that pose risks to communities and ecosystem values through an open, collaborative process. Stewardship contracting authority includes agreements with nonprofits, best-value contracts, designation by description, end results and goods for services. The guidance document, fact sheet, Q&As and other information can be accessed online at www.fs.fed.us/forestmanagement/projects/stewardship/handbook/index.shtml. Contact: Jay O'Laughlin, IESAF Policy chair, 208-885-5776; jayo@uidaho.edu.

#### **DNR Sustainable Harvest FEIS Out.**

Washington's Department of Natural Resources published the Final EIS for its sustainable harvest project in early August. The preferred option proposes a 6.36 billion board foot westside decadal harvest, which is proposed for adoption at the September 7 Board of Natural Resources meeting. Statewide harvest under this option will be 7.16 billion board feet per decade.

DNR must ramp up to meet a 716 million board foot annual harvest target and the agency is nervous about the mechanics of meeting the first decade's seven billion board foot harvest. Trust land forest inventory, however, substantially will increase over current inventory through the planning period, mostly from lands affected by DNR's Habitat Conservation Plan requirements.

DNR technicians next tackle eastern Washington's harvest schedule. The inventory nearly is complete, allowing harvest schedule modeling to proceed.

#### **DNR Forest Resource Plan Update.**

DNR is updating its Forest Resource Plan, bringing it into conformity with the new harvest schedule and policy modifications to achieve those harvest levels. Statewide scoping hearings were held earlier this year with trust beneficiaries making clear their desire to see trust lands managed to produce revenue and for the plan to reflect that mandate.

Other substantial commentary came from the forest industry and the recreation community. Recreationists emphasized the need for forest recreation that was compatible with trust land management. DNR will publish and take comments on a DEIS in early 2005 and hopes to complete the project with Board of Natural Resources acceptance by mid-05.  $\spadesuit$ 

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