

Planning Approach for Reducing Wildland Fire Risks on Federal Lands

by
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Prepared for a meeting of the

Wildland Fire Leadership Council

Red Lodge, Montana
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This presentation focuses on potential improvements in the implementation of the National Fire Plan in Idaho. It touches upon three related “key points” in the National Fire Plan: hazardous fuels treatment, ecological restoration, and community assistance through forest biomass utilization. The author is a member of the Western Governors’ Association Forest Health Advisory Committee (WGA-FHAC) and was given an opportunity to explain this presentation to the Wildland Fire Leadership Council (WiFLC).

The WiFLC invited the WGA-FHAC to provide “stakeholder input” during its June 2007 meeting in Red Lodge, Montana. Although the University of Idaho is not a stakeholder in the same sense as other Idaho members of the WGA-FHAC (e.g., the Intermountain Forest Association and the Idaho Conservation League), many people in the state are affected by wildfires.

The WiFLC is an intergovernmental committee of federal, tribal, state, county and municipal government officials dedicated to consistent implementation of wildland fire policies, goals and management activities. The Council meets regularly to provide oversight and coordination of the National Fire Plan and the Federal Wildland Fire Management Policy. In 2002 the WGA-FHAC developed the original ten-year implementation plan for the National Fire Plan. This document was revised in December 2006, re-emphasizing the importance of the collaborative framework upon which the implementation plan is built.

Jerry Williams (2004)
Director, USFS Fire & Aviation (ret., 2005)

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RECONCILING FRICTIONS IN POLICY
TO SUSTAIN FIRE-DEPENDENT ECOSYSTEMS
Jerry Williams

“... to get serious about reducing wildfire losses, we need to treat fuels at scales much larger than we are today. So long as the rate of fuels accumulation remains greater than the rate of treatment, over-accumulated biomass will continue to fuel severe wildfires that thwart our best efforts at control.”

FIRE POLICY FRICTIONS

slide # 1 • Jay O'Laughlin
WGA-FHAC_WIFLC_6-19-07

United States Department of Agriculture
Forest Service

University of Idaho
College of Natural Resources

The major points of this presentation can be stated in three quotations from an article in *Fire Management Today* by Jerry Williams.* Mr. Williams is a leader in the wildfire community who recently retired from federal service. The first of these three points, on this slide, is 1) the scale of fuel treatments needs to be stepped up to reduce wildfire losses, and these treatments must keep pace with forest growth to be effective over time.

The other two points are made on slides that follow: 2) fire management planning needs to be integrated with land and resource management planning, and 3) biomass utilization will be enhanced if federal land management planning can provide a stable long-term supply of biomass material.

* Williams, Jerry. 2005. “Reducing frictions in policy to sustain fire-dependant ecosystems.” *Fire Management Today* (Fall) 65(4):4-8. Mr. Williams’ article is based on a speech he presented in October 2004 at the Australasian Fire Authorities Conference in Perth, Australia. *Fire Management Today* is published by the U.S. Forest Service and available online at <http://www.fs.fed.us/fire/fmt/>.

Year	Target Shortfall	Non-Wildland Urban Interface	Wildland Urban Interface
2000*	0	0	1.2
2001	0	1.2	0.8
2002	0	1.5	1.0
2003	0	1.8	1.2
2004**	0	2.2	1.8
2005	0	2.5	2.0
2006	0	2.2	1.8

Hazardous Fuels Reduction Versus the 400-Pound Gorilla

BY DOUG CRANDALL

As I was preparing to write this article, I received an email stating that the National Interagency Fire Center upgraded the National Preparedness Level for wildland fire risk to Level 5, the highest level—the point at which the potential exists to exhaust all hazardous resources.

... nistration has quadrupled the number of acres treated and the amount of money spent on hazardous fuels reduction, a huge increase over any previous administration. From 2000 to 2007, the USDA Forest Service and Department of the Interior will have treated nearly 29 million acres. Since 2003, the first year of the administration's Healthy Forests Initiative, about 7.8 million acres have been treated in the wildland-urban interface (WUI), representing almost 69 percent of all

In this 400-pound gorilla on a diet levels (in board feet) on national forests. The response was remarkable: net annual growth was approximately 20 billion board feet (BBF); net annual mortality was

“ . . . much positive activity in recent history. . . .

“Momentum has shifted from conflict and neglect to a recognition that there’s actually a gorilla in the room [federal forest growth, mortality, and removals relationship]. . . .

“[With] approximately 190 million acres at risk of uncharacteristic wildfires [almost 100 million acres in western forests, mostly on federal lands], treating four to five million acres a year just doesn’t cut it (so to speak).”

In This Issue: Healthy Forests Initiative: What's Happened?

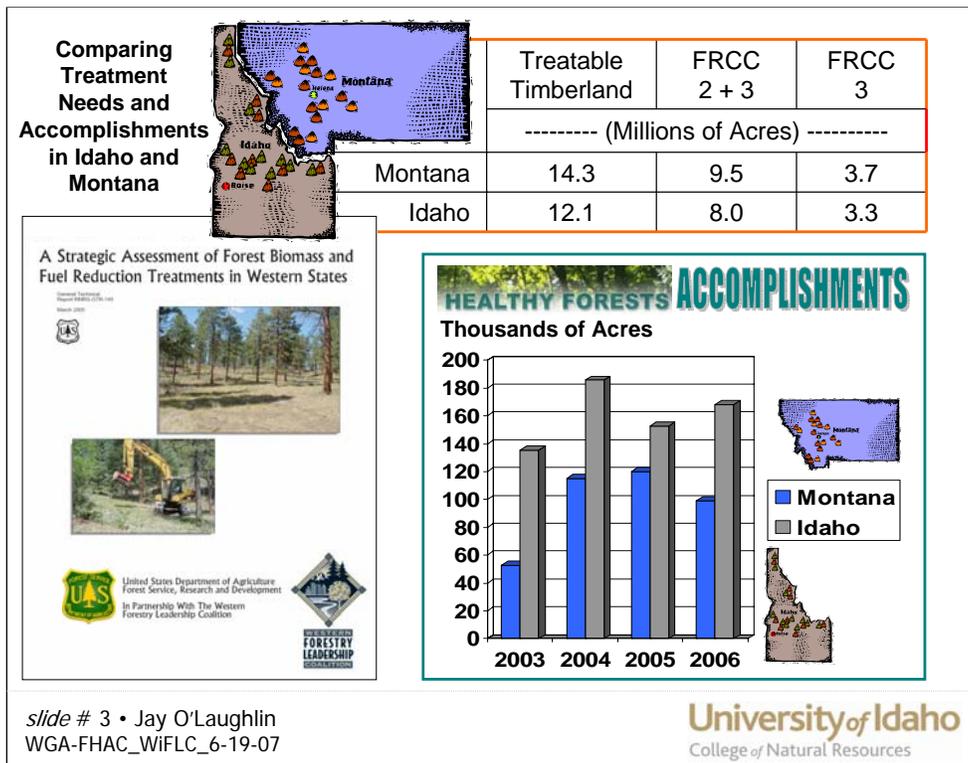
slide # 2 • Jay O’Laughlin
WGA-FHAC_WIFLC_6-19-07

University of Idaho
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The bar graph in the upper left corner depicts the record of accomplishment in fuels treatment and restoration activities on federal lands from 2000 to 2006 (source: http://www.forestsandrangelands.gov/reports/documents/healthyforests/2007/healthy_forests_report_05142007.pdf).

The quotations are from an article in the *Western Forester*, a publication of the Society of American Foresters, by Doug Crandall. He has served on several congressional staffs, including the Subcommittee on Forests and Forest Health in the House of Representatives, and is currently Director of Forest Policy for the Society of American Foresters, Bethesda, MD (source: <http://www.forestry.org/pdf/sept06.pdf>).

Mr. Crandall recognizes that although the annual amount of acres treated or restored since 2000 has quadrupled, it is far short of what is needed to keep up with forest growth on federal lands. The author makes a similar point in a refereed paper: O’Laughlin, Jay, and Philip S. Cook. 2003. “Inventory-based forest health indicators: implications for national forest management.” *Journal of Forestry*. 101(2):11-17, abstract available online at <http://www.cnrhome.uidaho.edu/default.aspx?pid=69496>.



In Idaho, approximately 12 million acres of forest lands need some kind of fuel treatment to restore historic conditions. Fire Regime Condition Class (FRCC) is a measure of how much a forest has departed from natural wildland fire conditions. A west-wide assessment of potential biomass fuels conducted by the U.S. Forest Service identified 4.7 million acres of Class 2 and 3.3 million acres of Class 3 forest lands in Idaho.*

Approximately three-fourths of the forest land in Idaho is administered by the U.S. Forest Service. Using that same proportion means there are likely at least 6 million acres of Class 2 & 3 forest lands in Idaho's national forests. In the last four years the U.S. Forest Service has treated, on average, about 150,000 acres of forest land per year in Idaho. Montana has even more forest lands at risk, and the Forest Service is treating less acreage than in Idaho.

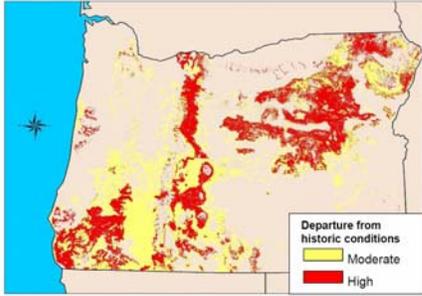
* The fire regime in Class 2 areas is moderately altered from the historical range. Moderate levels of restoration treatments such as fire or mechanical treatments would be required to begin managing a more natural fire cycle. In Class 3 areas, fire regimes have been significantly altered and there is a high risk of losing key ecosystem components in a wildfire. Due to high fuel loadings, mechanical treatments are expected to be needed before fire can be reintroduced (source: USDA Forest Service (2005) *A Strategic Assessment of Forest Biomass Fuel Reduction Treatments in Western States*, RMRS-GTR-149, March 2005, available online at http://www.fs.fed.us/rm/pubs/rmrs_gtr149.html).



Making forest restoration work for nature and people

Presentation to Western Forest Economists
Russell Hoeflich, The Nature Conservancy
May 8, 2007

Condition of Oregon's fire-prone forests and woodlands



SOURCE: LANDFIRE Rapid Assessment 2008; The Nature Conservancy/U.S. Forest Service/Department of Interior

Forest conditions - Oregon

- 9.3 million acres Condition Class 3
- 11.7 million acres Condition Class 2
- Total 21 million acres CC 2 and 3
- 13.4 million acres are public land
- 11.3 million acres of public land outside wilderness and roadless areas

Public land treatments - Oregon

- Federal agencies treat on average 156,000 acres of forests and woodlands a year
- In 25 years, need to treat at least 447,000 acres a year
- Some areas require multiple treatments to the same acreage
- Bottom line – need to increase treatments to 3-5 times current levels

slide # 4 • Jay O'Laughlin
WGA-FHAC_WIFLC_6-19-07



The situation in Oregon is similar to that in Idaho and Montana, illustrated on the previous slide. Federal lands are not being treated to the extent they should be to reduce wildfire risks. In May 2007, Russ Hoeflich, state director for The Nature Conservancy in Oregon, gave a luncheon presentation at the annual meeting of the Western Forest Economists in Welches, OR.

The “bottom line,” according to Mr. Hoeflich of The Nature Conservancy, is that federal agencies in Oregon should be treating three to five times as much acreage as they currently are (source: http://www.masonbruce.com/wfe/2007Program/Hoeflich_1.pdf).

Jerry Williams (2004)
Director, USFS Fire & Aviation (ret., 2005)

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RECONCILING FRICTIONS IN POLICY TO SUSTAIN FIRE-DEPENDENT ECOSYSTEMS
Jerry Williams

“... the time has come to move beyond fire policy alone and broaden our focus to include how we first manage the land and society's expectations for the land.”

United States Department of Agriculture
Forest Service

University of Idaho
College of Natural Resources

slide # 5 • Jay O'Laughlin
WGA-FHAC_WIFLC_6-19-07

The second point from Jerry Williams' article effectively moves fuels treatment from the province of fire management to the broader arena of land and resource management. Decisions about federal land management take place in a policy environment featuring a two-tiered planning process in which the managers are required to involve the public before acting. The two tiers are as follows:

- 1) Landscape-scale planning is done formally in land and resource management plans prepared according to laws requiring long-term (10-15 year) comprehensive plans. These plans provide an opportunity for managers to work with the public to develop land-use maps and determine the priority of management activities.
- 2) Project-level planning, which is governed by National Environmental Policy Act (NEPA) of 1969 requirements to analyze the impacts of proposed actions. This is where managers convert plans into on-the-ground actions.

Fire management planning does not currently fit within these processes. The fire management plan for a national forest is not part of the land and resource management plan. Although prescribed fire events are usually subject to NEPA analysis, neither fire suppression activities nor wildland fire use (“let it burn”) events are subject to NEPA analysis. As a result no collaboration with stakeholders occurs. Suggestions for incorporating wildfire risk assessment into the two-tiered land and resource management decision processes are offered in the following two-page outline, with an additional page of references.

Planning Approach for Reducing Wildfire Risks on Federal Lands

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DISCUSSION DRAFT – June 19, 2007

Introduction. During a conversation in May 2006 with Elaine Marquis Brong (BLM state director for Oregon and Washington at that time), she opined that although an array of planning tools exists for helping federal land managers reduce wildfire risks, no one had put all the pieces together. I accepted the challenge to try to assemble the tools in a management planning and decision-making context consistent with policy requirements. This draft outline is the result.

Risk-based Approach. A guiding principle: “Sound risk management is the foundation for all fire management activities” (USDA/USDI et al. 2001, 2003). Risk assessment can help identify, prioritize, and support implementation decisions for management actions, especially through the collaborative process by which the National Fire Plan is implemented (O’Laughlin 2006).

Planning Tools. Several tools are capable of supporting landscape and project level planning approaches for reducing wildfire risks. Some of these are decision support tools presented at a July 2006 national conference on threat assessment applications for forest and rangeland management. The tools outlined below could provide the glue to hold the pieces of the puzzle together in the current policy and planning environment. This discussion draft outlines what could be done. (Several new tools are featured in a USDA Forest Service General Technical Report scheduled for publication in September 2007; see **References Cited** section on page 3.)

A. National Forest Management Act of 1976 (NFMA) or Federal Lands Policy Management Act of 1976 (FLPMA)

1. Determine desired future forest (or rangeland) condition via interaction with stakeholders
2. Identify and prioritize sub-watersheds (~20,000 acres) for management, using LANDFIRE data in a logic framework and decision model (Hessburg, Reynolds, et al. 2007, in press)
3. Use forest inventory and analysis (FIA) data and appropriate forest growth model(s) to project future forest inventory, perhaps with several management scenarios
4. Identify forest growing stock volume “gap” between current conditions and desired future conditions
5. Identify and describe “gaps” for overstocked stands in terms of a schedule for timber and/or forest biomass to be removed
6. “Levelize” the amount of timber and/or forest biomass that will be made available over the 10-15 year life of the plan to help private contractors and entrepreneurs develop and finance plans for resource utilization (see Mater 2006)
7. Amend required land and resource management plan to reflect results from this analysis

B. Fire Management Plan

1. Based on above analysis, amend fire management plan (FMP) for the planning unit to identify areas where wildland fire use (WFU) may be an appropriate management response

C. National Environmental Policy Act of 1969 (NEPA)

1. For proposed fuel treatment projects, engage stakeholders using SPOTS approach (strategic placement of fuel treatments; see SPOTS website at NIFC 2006 and/or summary in O’Laughlin 2007).
2. Design fuel treatment project to attain desired forest condition by removing vegetation (timber and/or forest biomass)
3. “Levelize” the amount of timber and/or forest biomass over time using CROP (Coordinated Resource Offering Protocol) approach (see Mater 2006)
4. Describe project objectives in terms of end results desired
5. Use fire return interval as the minimum planning horizon (this will ensure that a fire will occur and preclude the need to develop fire probability scenarios)
6. If fish species protected by the ESA are present, a minimum 100-year planning horizon is needed the ensure that decisions supported by short-term considerations do not result in long-term problems (Rieman et al. 2003)
7. Interact with stakeholders to determine resources at risk (i.e., what do people care about?)
 - Describe risks under current conditions, using either quantitative data and models or qualitative expert-based approach
 - Describe additional risks posed by management actions
 - Describe risk reduction benefits from proposed management actions
8. Develop risk assessment diagram(s) with and without proposed management action
 - See Ager and Finney (2007, in press)
 - See O’Laughlin (2007, in press)
9. As may be appropriate, use Healthy Forest Restoration Act of 2003 (HFRA) and other Healthy Forest Initiative (HFI) tools (see field guide, USDA-FS/USDI-BLM 2004)
10. As may be appropriate, develop stewardship contract to attain end results
 - Use 10-year planning horizon wherever feasible to help contractors and wood utilization entrepreneurs secure adequate financing to remove hazardous fuels and use biomass to manufacture products and provide heat, power, and transportation fuels

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- U.S. Dept. of Agriculture and U.S. Dept. of the Interior (USDA/USDI 2003). *Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy*. Washington, DC: U.S. Dept. of Agriculture, Forest Service; and U.S. Dept. of the Interior, Bureau of Indian Affairs, Bureau of Land Management, National Park Service, and U.S. Fish and Wildlife Service. Available online at http://www.nifc.gov/fire_policy/pdf/strategy.pdf.
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* Scheduled for September 2007 publication in a USDA Forest Service General Technical Report and also in a new *Encyclopedia of Forest Environmental Threats* that will be available online at <http://www.threats.forestencyclopedia.net>.

Jerry Williams (2004)
Director, USFS Fire & Aviation (ret., 2005)

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RECONCILING FRICTIONS IN POLICY
TO SUSTAIN FIRE-DEPENDENT ECOSYSTEMS
Jerry Williams

“One way [to reduce fuels] is to create a demand for biomass that we otherwise cannot afford to dispose of. We need to more coherently establish markets for biomass — perhaps even if it takes guaranteed supplies, tax incentives, and consumer credits.”

FIRE POLICY FRICTIONS

United States Department of Agriculture
Forest Service

University of Idaho
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slide # 6 • Jay O’Laughlin
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Jerry Williams’ third point is about the creation of markets for dealing with biomass removal. As a policy principle the Secretaries of the U.S. Departments of Agriculture, Energy, and the Interior have agreed to “support the utilization of woody biomass by-products from restoration and fuels treatment projects wherever ecologically and economically appropriate and in accordance with the law” (source: http://www.fs.fed.us/forestmanagement/WoodyBiomassUtilization/products/documents/BiomassMOU_060303_final_web.pdf).

Regarding the affordability of hazardous fuels treatment, a working hypothesis is that the alternative to not removing accumulated fuels is larger, more intense fires with more severe effects than if treatments were done. Firefighting costs saved from not having to deal with large problem fires need to be built into the analysis, as do other benefits such as modified sediment regimes and effects on water bodies and reduced emissions of not only greenhouse gases but also the fine particulate matter in wildfire smoke that is correlated with human respiratory problems and premature deaths.

Although the creation of tax incentives is beyond the realm of what federal land management agencies can do on their own, there are mechanisms, such as stewardship contracting, that agencies could use to provide guaranteed supplies of woody biomass materials.

United States Government Accountability Office
GAO
Report to the Chairman, Committee on Resources, House of Representatives

May 2005

May 2005

NATURAL RESOURCES

Federal Agencies Are Engaged in Various Efforts to Promote the Utilization of Woody Biomass, but Significant Obstacles to Its Use Remain

GAO
Accountability • Integrity • Reliability
GAO-05-373

United States Government Accountability Office
GAO
Report to the Chairman, Committee on Resources, House of Representatives

March 2006

March 2006

NATURAL RESOURCES

Woody Biomass Users' Experiences Offer Insights for Government Efforts Aimed at Promoting Its Use

Primary Challenges

- **high harvesting and transportation costs**
- **lack of a sufficient, stable supply**

slide # 7 • Jay O'Laughlin
WGA-FHAC_WIFLC_6-19-07

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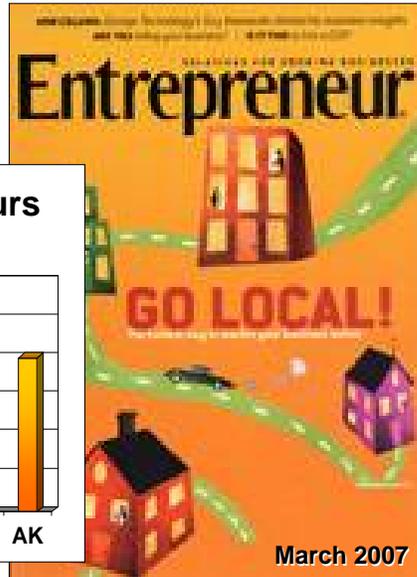
Biomass markets cannot exist without a supply of material. Fuel treatment at the scale necessary to reduce wildfire risks would produce substantial amounts of woody biomass (see *A Strategic Assessment of Forest Biomass Fuel Reduction Treatments in Western States*, cited on slide # 3).

According to recent reports by the federal Government Accountability Office, one of the primary challenges or obstacles in utilization of woody biomass is the lack of a sufficient and stable supply. The federal land management agencies have planning tools they can use to step up the removal of accumulated fuels and help create new biomass utilization opportunities.

The obstacle of high harvesting and transportation costs needs some creative policy approaches, and perhaps some form of subsidy (e.g., merchantable timber, cash payments, tax credits) in order to encourage the removal of hazardous fuels in order to reduce wildfire risks and provide other benefits from woody biomass utilization.

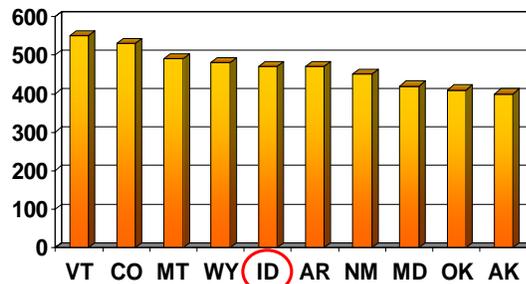
Creating Biomass Markets

Idaho has 3 modern, efficient small-diameter sawmills (★)



Top 10 States – Entrepreneurs

Entrepreneurs per 100,000 people



http://money.cnn.com/magazines/fsb/fsb_beststates/2007/

slide # 8 • Jay O'Laughlin
WGA-FHAC_WIFLC_6-19-07

University of Idaho
College of Natural Resources

Idaho, like many western states, has a large proportion of entrepreneurs in comparison to other states. If quantities of biomass were made available, they could figure out how to put together the resources to develop woody biomass utilization facilities.

In some areas of the country, including parts of the Southwest, the forest industry infrastructure disappeared as the harvest of timber from federal lands declined by approximately 80 percent during the 1990s. Like the rest of the country, Idaho experienced such declines in federal land timber harvests. Because of extensive state and private holdings of productive timberlands, the forest industry in Idaho not only remains viable, it is a vital economic engine throughout the northern part of the state.

In recent years at least three business firms in Idaho have invested in modern high-speed sawmills that are designed exclusively to process small diameter timber 10" or less in diameter. Not too long ago, the definition of a sawlog was 11" and larger. That is no longer true, and large logs (in excess of 18") do not enjoy the premium prices they once attracted from timber purchasers.



Biomass Energy and Biofuels from Western Forests

... opportunity to simultaneously address three challenging needs:

- Restoring forest health, fire resiliency, and wildlife habitat
- Finding renewable energy alternatives
- Revitalizing western economies

Forest Biomass to Energy in Oregon: the Stars are Aligned

Presented by
Roger Lord
Mason, Bruce & Girard
Western Forest Economists Meeting
May 2006



slide # 9 • Jay O'Laughlin
WGA-FHAC_WIFLC_6-19-07

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Biomass utilization offers three substantial opportunities that would benefit society, as outlined in the bullet points above drawn from a recent article in the *Western Forester* written by resource analysts in Oregon. The opportunity to improve forest conditions while simultaneously revitalizing rural communities and providing feedstocks for non-fossil fuel energy production provides a good argument for reducing hazardous fuels (source: <http://www.forestry.org/pdf/dec06.pdf>). These analysts believe the stars are aligned for biomass energy to become a vital part of Oregon's economy, and on-the-ground examples in this issue of the *Western Forester* provide tangible evidence. With some effort, perhaps the stars for biomass utilization will align in Idaho, too. The starting point is finding a stable supply of material, from federal lands and other sources, that would be sufficient to encourage entrepreneurs to invest in the development of biomass utilization facilities.

Almost three-fourths of Idaho's forests are rooted on ground administered by the U.S. Forest Service. The place to begin moving towards biomass utilization is revising and/or amending federal land and resource management plans to identify the areas where treatments are most needed, and then guarantee private sector operators that a certain quantity of biomass will be put on the market. Federal land managers, working with their stakeholders, can design projects that will provide the multiple benefits of woody biomass utilization. The two-page outline featured in this presentation (sandwiched between slides # 5 and # 6) provides more specific ideas for doing the planning tasks in accordance with federal policy requirements.