UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

August 16, 2004

In Reply Refer To:
5300/5400 (WO-270) P
9210 (FA-600) P

EMS TRANSMISSION 08/16/2004
Instruction Memorandum No. 2004-227
Expires: 09/30/2005

To: SD's and CD's

From: Assistant Director, Renewable Resources and Planning
Director, Office of Fire and Aviation

Subject: Bureau of Land Management's Biomass Utilization Strategy

Program Areas: Forests and Woodlands Management, Fuels Management.

Purposes: This Instruction Memorandum (IM) will establish the Bureau of Land Management's (BLM) Biomass Utilization Strategy. The strategy is a framework to implement the biomass portions of the National Fire Plan, National Energy Policy, DOI Strategic Plan, commitments made by the Secretary of the Interior at the Bioenergy and Wood Products Conference (January 2004) and the Memorandum of Understanding (MOU) for Woody Biomass Utilization for Restoration and Fuels Treatments on Forests, Woodlands and Rangelands.

Policy/Action: The BLM will implement a strategy for increasing the utilization of biomass from BLM lands consistent with the National Fire Plan (NFP) and using the tools of the Healthy Forests Initiative, including the new authorities for stewardship contracting projects and the Healthy Forests Restoration Act (HFRA). Short-term efforts will focus on developing tools, and expertise that can be implemented by December 31, 2004. Longer-term efforts will initially focus on items that can be implemented by October 1, 2005. However, making significant progress in biomass utilization issue will take much longer and must be a coordinated effort by all Bureau staff and offices, the Department and our partners. The majority of the tasks associated with this strategy are assigned to the Forests and Woodlands Group (WO270) and the Office of Fire and Aviation (FA600). This strategy is a working document, and will be modified as conditions change and new opportunities arise.

Background: The announcement by Secretary Norton at the Denver Biomass Conference charged the Department and the agencies with development of a coordinated biomass implementation strategy. With this announcement and under the umbrella of the NFP, the new authority for stewardship contracting and the recent passage of the HFRA, BLM was charged to develop a biomass utilization strategy. Additional guidance used to develop this strategy includes:

1. MOU/Woody Biomass Utilization, DOA, DOE and DOI, June 2003.
2. Biomass Energy Opportunities on Public Lands, Office of Wildland Fire Coordination Office, 2003.
3. Cooperative Agreement for the purpose of promotion of woody biomass utilization, BLM and National Association of Conservation Districts, June 2004.
4. Program Evaluation of the Public Domain Forest Management Program, May 5, 2003.
5. BLM State Forestry Action Plans 2003.
6. IB No. OF&A 2002-058, Biomass Utilization.
7. IM No. OF&A 2002-032, Utilization of By-Products Produced by Hazardous Fuels Reduction Activities.

Impact on Budget: In the short run, this strategy will require participation of State and National BLM Staff. In the long run, implementing this strategy is expected to reduce the cost of forest health and hazardous fuel reduction treatments.

Coordination: This IM was coordinated with the Office of Fire and Aviation, Planning and Resources (FA-600); and Forests and Woodlands Management (WO-270).

Contact: Additional information is available by contacting Scott Lieurance, BLM's Biomass Coordinator at (202) 452-0316, Laura Ceperley at (202) 452-5029, or Roy Johnson at (208) 387-5163.

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Office of Fire and Aviation

5 Attachments
1- BLM's Biomass Utilization Strategy (7 pp)
2- Woody Biomass Utilization Memo and MOU (9 pp)
3- Biomass Energy Opportunities on Public Lands (10 pp)
4- IB No. OF&A 2002-058 (2 pp)
5- IM No. OF&A 2002-032 (6 pp)

BLM's Biomass Utilization Strategy

July

2004

BLM's Biomass Utilization Strategy
July 2004

Purpose - The BLM will implement a strategy for increasing the utilization of biomass from BLM lands consistent with the National Fire Plan and using the tools of the Healthy Forests Initiative, including the new authorities for stewardship contracting projects and the Healthy Forests Restoration Act. The purpose of this strategy is to assist in implementation the goals of the National Fire Plan, and the National Energy Policy, the DOI Strategic Plan and the commitments made by the Secretary of the Interior at the Bioenergy and Wood Products Conference held in January 2004.

Strategy - Short-term efforts will focus on developing tools, increasing field office expertise and increases in acres treated with biomass utilized. These actions can be implemented by December 31, 2004. Longer-term efforts will build on the short term efforts and expand to working with partners and looking at barriers to biomass utilization. These actions can be implemented by October 1, 2005. **This strategy is a working document**, and will be modified as conditions change and new opportunities arise. This strategy fulfills some of the commitments of the National Energy Policy, Task 45.

Background -

A. National Fire Plan

1. Ten-Year Comprehensive Strategy (August 2001)

Goal 4: Promote Community Assistance Guiding Principles:

Biomass Utilization – Employ all appropriate means to stimulate industries that will utilize small-diameter, woody materials resulting from hazardous fuel reduction activities, such as for biomass electric power, pulp and paper-making and composite structural building materials.

Actions: Promote markets for traditionally underutilized wood as a value-added outlet for by-products of hazardous fuel reduction and ecosystem restoration efforts.

2. 10 Year Comprehensive Strategy; Implementation Plan (May 2002)

One requirement of reducing threat of wildland fire is "active forest and rangeland management, including thinning that produces commercial or pre-commercial products, biomass removal and utilization, prescribed fire and other fuels reduction tools to simultaneously meet long-term ecological, economic and community objectives." (pg 6 of Strategy)

An implementation outcome is "communities at risk have increased capacity to prevent losses from wildland fire and the potential to see economic opportunities resulting from treatments and services" (pg 15 of Strategy).

Performance Measure E. Percent of acres treated to reduce hazardous fuels by mechanical means with by-products utilized.

Implementation Tasks. Create an internet-based information system to provide technical assistance and identify programs that improve and increase utilization of by-products from hazardous fuel treatments and ecosystem restoration activities.

Develop an improved technical assistance program to promote commercial uses for small – diameter materials.

B. National Energy Policy (Task # 45, Increase Biomass Utilization):

Develop strategies to encourage use of biomass from public lands. Develop an incentive program to encourage use of biomass as renewable energy. Find opportunities to utilize funding from other sources within the National Fire Plan (due 12.30.05)

Develop new procedures to offer the option of removal of small diameter woody by-products (biomass) in commercial and procurement contracts. (10.1.04)

Develop a short term strategy to increase the knowledge, new tools and expertise needed to increase the availability of biomass for market (10.0.04)

Develop a long term strategy for marketing, infrastructure development and biomass supply (12.30.05)

C. DOI Strategic Plan:

DOI Strategic Goal:	2.0: Resource use
End outcome goal:	2.4: Manage or Influence Resource Use to Enhance Public Benefit, Promote Responsible Use, and Ensure Optimal Value – Forest and Woodland Products
End outcome measure:	2.4.02: Volume of wood products offered consistent with applicable management plans, PD lands. 2.4.04: Volume of wood products offered consistent with applicable management plans, O&C lands 2.4.05: Responsible use: Percent of permitted acres maintained at appropriate land conditions and water quality standards.

D. Commitments made by the Secretary of the Interior

Bioenergy and Wood Products Conference, Denver, Colorado (January 2004):

1. By October 1, 2004, the DOI and the Forest Service will publish in the Federal Register new procedures for commercial and procurement contracts, when appropriate, that will offer the option of removal of small diameter woody by-products to be used for bio-energy.
2. The DOI will work with the National Association of Conservation Districts to develop regional workshops on biomass utilization and fuel reduction in support of the National Fire Plan.
3. The DOI will develop web-based information tools to increase understanding of the social, environmental and economic benefits of biomass thinning for forest restoration and catastrophic fire risk reduction.

E. Existing Policies and IM/IB:

1. MOU – Woody Biomass Utilization, USDA, DOE, DOI (June 2003).
2. Biomass Energy Opportunities on Public Lands, Office of Wildland Fire Coordination (2003).
3. Program Evaluation of the Public Domain Forest Management Program (May 5, 2003).
4. BLM State forestry action plans (2002).
5. IB No. OF&A 2002-058, Biomass Utilization (September 9, 2003).
6. IM No. OF&A 2002-032, Utilization of By-Products produced by Hazardous Fuels Reduction Activities (July 17, 2002).

Biomass Energy Opportunities on Public Lands

BLM's Biomass Utilization Strategy

July 2004

	National Lead	Comple-tion Date	Status/Comments
1.0 Short-term Goal: Increase the utilization of biomass from treatments on BLM lands, where opportunities exist.			
1.1. Develop tools			
1. Action: Develop a comprehensive **definition** of biomass, such as "small diameter woody material that can be used to generate a commercial product."	WO270	Oct-04	Start with existing definitions, broad enough to include forage.
2. Action: Develop contract specifications for **appraising** biomass by finalizing Wood Fiber Utilization Contracting Procedures.	WO270	Dec-04	
3. Action: Develop guidelines for estimating biomass **volume.**	WO270	Dec-04	
4. Action: Develop guidelines for **tracking** biomass accomplishments, building on DOI strategic plan, and biomass definition**.**	WO270	Dec-04	Start with 10-year Plan performance measure E.
5. Action: Increase the number of **fuels IDIQ** task orders that include a biomass component , by modifying existing "salvage" clause, and developing a new template.	WO270, FA600, NBC	Oct-04	
6. Action: Assist developing **DOI clauses** for biomass removal in all appropriate commercial sales and service contracts (resulting in the contractor buying the material for at least the minimum market value).	OR State Office, WO270	Oct-04	
1.2. Build expertise within the BLM, and networks with other agencies and organizations.			
1. Action: Identify **demonstration projects** in several States for 2005 BLM funding priorities. Criteria will include business and community infrastructure, BLM staff expertise, and resource potential. Advertise lessons learned.	WO270, FA600	Oct-04	Coordinate with other DOI agencies and OWFC.
2. Action: Continue filling **new forester/forestry technician** positions in key field office, implementing the BLM State Action Plans, and national office. (in addition to 4 positions filled in 2004.)	WO270, FA600	Done for 2004	Coordinate with hiring of fuels specialists.
3. Action: **Train BLM staff** in use of biomass guidance and "tools" (stewardship contracts/agreements, biomass clauses, etc).	WO270, FA600, NTC	ongoing	
4. Action: **Train key partners,** governments, tribes, contractors, etc in use of "tools" (stewardship contracts/agreements, biomass clauses, etc) so that they can participate/compete in contracts/agreements.	WO270, FA600	ongoing	Build on MOU with NACD. Coordinate with BIA and FS.
5. Action: Facilitate **technology transfer with key partners**, governments, tribes, contractors, etc by participating in DOI/USDA website (under HFI), conferences, developing key BLM staff, participating in technology centers.	WO270, FA600	ongoing	Build on MOU with NACD. Coordinate with BIA and FS. Have Biomass on HFI website by August 1.

BLM's Biomass Utilization Strategy

July 2004

	National Lead	Comple-tion Date	Status/Comments
1.3. Increase percent of acres treated with biomass utilized			
1. Action: Increase the **number of 2005 fuels and stewardship projects** that include a biomass component.	WO270, FA600	Done for 2004	
2. Action: Increase **funding available** for biomass projects in 2005, including fuels and community assistance, CCS/CCI, stewardship receipts, MLR.	WO270, FA600	Dec-04	
3. Action: Develop **incentives for increasing biomass products** in areas where opportunities currently exists.	WO270, FA600	Dec-04	Consider transportation bid items.
4. Action: **Identify barriers in existing land use plans** which impede effective biomass utilization.	WO270, WO210	Dec-04	
2.0 Long-term Goal: Increase the utilization of biomass from treatments on BLM lands nation-wide, as appropriate, including in developing markets areas.			
2.1. Develop tools			
1. Action: Develop **CXs** for limited timber harvest.	WO 270	Jan-05	
2. Action: Develop **evaluation criteria** for awarding contracts in "best value" solicitations, where contractors utilize biomass.	WO 270	Jan-05	
3. Action: Develop **timber sale provisions** to reduce slash disposal deposits when the purchases utilizes biomass.	WO 270	Jan-05	
4. Action: Develop budget proposals for grants and base funding.	WO270, FA600	Jan-05	
2.2. Build expertise within the BLM, and networks with other agencies and organizations.			
1. Action: Connect key partners with **grants available for DOI, USDA, EPA** et	WO270	ongoing	Coordinate with NACD.
2. Action: Continue filling **new forester/forestry technician** positions in key field office, implementing the BLM State Action Plans.	WO270, FA600	ongoing	
3. Action: Actively engage the USDA Forest Service in implementation of **Title II of HFRA** -- grants for research of biomass use, rural revitalization through forestry and biomass commercial utililization.	WO270	Jan-05	
4. Action: Actively engage the USGS in implementation of **Title IV of HFRA (**applied research assessment of federal lands that are at risk of infestation).	WO270	Oct-05	

BLM's Biomass Utilization Strategy

July 2004

	National Lead	Comple-tion Date	Status/Comments
5. Action: **Train BLM staff** in use of biomass guidance and "tools" (stewardship contracts/agreements, biomass clauses, etc).	WO270, FA600, NTC	ongoing	
6. Action: **Train key partners,** governments, tribes, contractors, etc in use of "tools" (stewardship contracts/agreements, biomass clauses, etc) so that they can participate/compete in contracts/agreements.	WO270, FA600	ongoing	Build on MOU with NACD. Coordinate with BIA and FS.
7. Action: Facilitate **technology transfer with key partners**, governments, tribes, contractors, etc by participating in DOI/USDA website (under HFI), conferences, developing key BLM staff, participating in technology centers.	WO270, FA600	ongoing	Build on MOU with NACD. Coordinate with BIA and FS. Have Biomass on HFI website by August 1.
2.3. Increase percent of acres treated with biomass utilized.			
1. Action: Promote **landscape planning across ownerships**, estimating long term supply from BLM lands and incorporating concepts from community assistance planning.	WO270	Oct-05	Investigate CROP and other models, five year vegetation management schedules.
2. Action: Where appropriate, incorporate biomass in land use plans, including **removing barriers** that exclude commercial product removal in appropriate areas (i.e., such as direction in RMP that disallow commercial vegetative treatments).	WO270	ongoing	Consider regional, state or national plan amendments.
3. Action: Increase the number of **stewardship contracts** and agreements that include a biomass component.	WO270	Oct-05	
4. Action: Implement **DOI clauses (currently being developed)** for biomass removal in all appropriate commercial sales and service contracts (resulting in the contractor buying the material for at least the minimum market value).	WO270	Oct-05	
5. Action: Report by State, biomass performance measures, and incorporate into 2006 budget allocations.	WO270, FA600	Oct-05	

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Office of Fire and Aviation
3833 South Development Avenue
Boise, Idaho 83705

September 9, 2002

In Reply To:
9210 (FA-630) P

EMS Transmission 09/09/02
Information Bulletin No. OF&A 2002-058

To: All Field Offices

From: Director, Office of Fire and Aviation

Subject: Biomass Utilization

The 10-Year Comprehensive Strategy for Reducing Wildland Fire Risks to communities and the environment identifies four specific goals. Two of those goals, reducing hazardous fuels and restoring fire-adapted ecosystems, can use mechanical fuels treatments as one method to achieve those results. Reducing the fuel loads is only one step in the fuels management process. Utilization of the biomass generated by mechanical fuels reduction projects is just as important.

The problem is that conventional uses of wood products, building materials and dimensional lumber are not economically viable options with the small diameter material generated by most fuel reduction projects. For a long-term fuels management program to be successful, it is vital that new and creative uses for small diameter trees and brush be identified and supported.

We need to move beyond thinking in terms of fuels projects and the tons of fuel removed. Every area in which the BLM is involved, forestry, range, wildlife, watersheds, fire management, energy, minerals, threatened and endangered species, need to evaluate the raw materials and products developed from mechanical fuels management projects. For this reason, I am now requiring that all fuels treatment projects identify the amount of biomass that will be produced and describe how the material will be utilized.

We need to involve our partners and local stakeholders in this exploration. Collaborating with companies and individuals will allow us to draw on the best each has to offer.

Providing equipment such as brush hogs, chippers, portable mills, etc., for contractor use during project work will attract micro and small business participation that in turn will expand local area capabilities and capacity.

This work will lead to new outreach efforts and new partnerships. These contacts can often provide the foundation for success on other resource management issues. The use of partnerships and outside contractors will be the key to solving these problems. A long-term fuels management program will rely heavily on the use of contractors. In order for these contractors to survive, they will need a steady supply of raw materials and diverse markets for their products. The critical element is the establishment of markets for either the raw biomass, or the value added products derived from fuels projects. Ultimately, commercial utilization of these materials on some scale will be the desired goal.

The information included in the attachments are just some of the current biomass utilization efforts. Offices at all levels are encouraged to look beyond these examples and develop local, innovative uses for the materials generated by fuels projects. By working cooperatively at all levels, especially with the states and local communities, we can identify uses, develop the infrastructure, and create the markets necessary to finish the fuels management loop.

Signed by:
Larry E. Hamilton
Director, Office of Fire and Aviation

Authenticated by:
Pat Lewis
Supervisory Mgmt. Asst., Office Services

2 - Attachments
Brain Storm (3 pps.)
Mechanical Fuels Treatment (6 pps.)

Distribution:
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Biomass Energy Opportunities on Public Lands

Summary of Key Points:

- New bio-energy plants are unlikely in areas of significant Federal ownership, without a reliable source of raw material to meet the needs of investors.

- Existing BLM timber sale contracts (with completed NEPA analysis) could provide twenty-five times more acres for biomass utilization than current levels. An active forest management and restoration program could provide a potential energy supply of 438 Gigawatt hours.

- Reducing hazardous fuels under the National Fire Plan provides the greatest immediate opportunity to expand biomass production on public lands. Potential energy supply: 219 Gigawatt hours.

- There is a need for a coherent, inter-Departmental strategy to define a successful federal role in renewable energy.

- Forest and woodland inventory should be completed in order to support resource allocation decisions and help determine sustainable supplies of raw material.

- The budget for the Public Domain Forest Management and the Oregon & California Forest Management budgets have declined over 60% (inflation adjusted) since 1981, severely hindering the ability to develop forest and fuels management projects with biomass opportunities.

- An effective biomass strategy on public lands will require a larger cadre of professional foresters and other resource professionals with a clear understanding of current ecosystem science and vegetation management technologies, as well as knowledge and skills to plan, write, coordinate, facilitate and monitor a timely NEPA and ESA process.

- Changes in policy and contracting procedures will help private contractors and the forest products industry determine appropriate products and markets, and yield greater biomass opportunities.

Biomass Energy Opportunities on Public Lands

Availability of Supply

The American Bioenergy Association puts it simply: "biomass is stored solar energy". Therefore wherever vegetation is available, there is a potential supply. Biomass for energy typically includes fuel crops, such as hybrid poplars and switchgrass, agricultural residues such as corn stover, rice straw, wheat straw or other agricultural by-products, municipal solid wastes, and forest residues. For the purposes of this discussion, however, biomass refers primarily to small trees or limbs, tops and other forest residues and woody plants. Similarly, "bioenergy" refers to a broad suite of biomass uses, including combustion for electricity, biomass gasification, conversion to ethanol and bio-diesel production.

There is an important difference between biomass inventory and its availability. While hundreds of millions of tons of biomass may be growing in private and public forests, only a small fraction is actually available. This analysis uses a conservative assumption, based on practical experience, that 50% of all treatment areas have economic, topographic or environmental constraints that make biomass harvest impractical.

There is an immediate opportunity for at least a 25-fold increase in acres available for biomass utilization from existing Bureau of Land Management (BLM) timber sales and fuels reduction projects. The BLM conducts forest products sales on over 10,000 acres per year. Only 2% (217 acres) of these treatments utilized biomass as part of a fuels reduction strategy in Fiscal Year 2001. Removing biomass will reduce hazardous fuels generated by the commercial harvesting operation. Not only does this result in lower hazardous fuels conditions for public lands, and reduce the risks to prescribed or natural fires, it can also reduce or offset the brush disposal costs to timber purchasers.

At the current rate of treatment it will take over 500 years to treat the estimated 12 million acres of forest and woodland restoration needs in Public Domain lands managed by the BLM. Obviously this treatment level is far below the potential and far below the desired level for ecological restoration. If the BLM were to initiate an active 30 year forest and woodland restoration program, the agency would need to treat 150,000 acres a year. A combined program of forest management and forest restoration treatments would mean a 360-fold increase in biomass harvest over current production levels (80,000 acres vs. 217 acres per year).

Table 1 – Forest Management and Restoration Opportunities for Biomass Production

Type	Total Acres	Annual Acres Available	Acres Suitable*
Existing Contracts	10,000	N/A	5,000
Forest Management	10,000	10,000	5,000
Forest Restoration	12,000,000	150,000	75,000
Totals	12,020,000	160,000	80,000

* assumes 50% of the acres available are suitable for biomass production.

At a crude, estimated conversion rate of 8,000 Bone Dry Tons (BDT) to one megawatt year, and five BDT per acre, this represents a potential energy source of 50 Megawatt years, or 438 Gigawatt hours. NREL conversion factors indicate this would replace approximately 200,000 tons of coal.

Opportunities

In June 2001, Secretary Norton told the House Committee on Resources:

> " *...Utilization of biomass for energy production is consistent with a National Energy Policy objective to increase America's use of renewable and alternative energy sources. Biomass utilization is also consistent with the goals and objectives of the National Fire Plan to reduce accumulations of woody material that create a fire hazard, threatening communities and forests and rangelands....*"

By far the greatest opportunity for producing biomass on public lands is by reducing hazardous fuels under the National Fire Plan. To a high degree, the woody fuels which are typically used in bioenergy are the same materials which contribute to the rapid spread of wildfires or are ladder fuels which allow for damaging crown fires.

The Bureau of Land Management has estimated that there are some 110 to 130 million acres of lands at high risk and another 85 to 105 million acres at moderate risk to catastrophic damage by wildfire. The Department of Agriculture has estimated 73 million acres of forested USDA Forest Service lands are at moderate to high risk of catastrophic wildfire (Report to the President, September 9, 2000). Biomass production using the types of equipment available today is economically and technically feasible on only a small portion of theses lands. Other constraints include the types of fuels to be treated (mostly in shrub and grasslands), access to markets, conflicting land use allocations, and environmental concerns.

Table 2 – Fuels Treatment Opportunities for Biomass Production

Public Agency	Acres at moderate to high risk of catastrophic wildfire	Fuels treatment acres planned in FY2002	Acres potentially available for biomass*
BLM	28,000,000	125,000 WUI 275,000 landscape	40,000
BIA	21,000,000	176,000	17,000
NPS	3,000,000	196,000	17,000
USFWS	800,000	326,000	5,000
USFS	73,000,000	1,350,000	675,000

* assumes 50% of the acres available are suitable for biomass production.

At a crude, estimated conversion rate of 8,000 Bone Dry Tons (BDT) to one megawatt year, and five BDT per acre, the BLM portion of this represents a potential energy source of 25 Megawatt years, or 219 Gigawatt hours. NREL conversion factors equate this to approximately 100,000 tons of coal.

Specific Examples of BLM Opportunities:

- The Alturas and Eagle Lake Field Offices in northeastern California have experience in biomass projects on forested lands and are now proposing a juniper restoration project. This proposal, if successful, has outstanding possibilities throughout the 37 million acres of BLM's woodlands. Northeastern California has an active biomass industry, with well-established infrastructure, so the probability of success is very high.

- The Montana State Director has identified a pro-active forest restoration program which, if funded, could provide a 900% increase in restoration treatments. Proposed as a long-term (over 60 years) restoration program, this is the type of commitment which will attract investments in biomass infrastructure.

- The Ely District in eastern Nevada has committed to produce over 50-100,000 tons per year of pinyon-juniper biomass products as part of their Eastern Nevada Landscape Restoration Coalition (Coalition) project. The Coalition involves 75 federal, State, and local governments, private foundations and environmental groups, and local community and industry leaders. Designed to restore and improve habitat for sage grouse and Rocky Mountain elk, the project will treat over 18,000 acres of woodlands in FY 2002.

External Opportunities

Twelve States have Renewable Portfolio Standards which require a certain percentage of the State energy portfolio must come from renewable energy. In the West, for example, Nevada requires 5% renewables by 2003 and 15% renewables by 2015. New Mexico and Arizona have less ambitious programs, at 5% and 1.1% respectively. California had a similar program several years ago which encouraged the development of a biomass industry and infrastructure, and is expected to have a new program in place within a year.

Several States and the U.S. Congress have looked at price supports for renewable energy. One proposal would give grants to companies which remove hazardous fuels under the National Fire Plan as biomass feedstock. Tax credits and energy surcharges have also been explored. These types of supports should be encouraged, as they go a long way towards reducing private investor risks and encouraging biomass supplies.

Communication Barriers

Perception

Land managers are generally unaware of the full range of tools available to solve ecological restoration and forest or woodland health problems. Often times there is a failure to recognize new or different approaches. For example, many managers think that it costs less to treat an acre of forest by prescribed fire compared to mechanical removal of small trees. This is frequently untrue, especially when considering the risks of escaped fire to adjacent communities and critical habitat areas and the uncertainty of protecting valuable resources and large trees. For example, biomass operations on the Eagle Lake Ranger District of the Lassen National Forest yielded a gross average return to the government of $146.65/acre (ten year average from 30 sales, range of $5.88 to $647.59 per acre) on a total of 15,732 acres of treatments . The costs of similar treatments, using a series of prescribed burns in a forested environment range from $100 to $400/acre. Thus the net difference between mechanical treatment over prescribed fire is $146 + $100 to $400 (savings by not burning) = $246 to $546/acre. This doesn't include the social values of reduced smoke pollution and the aesthetics of unburned small or large trees.

There is a common perception that forestry activities are damaging to the environment. However, soil disturbance, because of the type of equipment used and small size trees with wide weight distribution area, is minimal. Biomass harvesting typically uses medium-sized mechanical shears with a grapple to hold the tree. The operator then cuts or shears the tree and carries the tree and lays it in a bundle. By controlling the direction of fall, there is minimal damage to desired residual trees. Therefore, compared to prescribed burning, research indicates a greater level of precision of application can be achieved through the biomass operation. Mechanical harvest also provides an opportunity to save specific trees or groups of vegetation for wildlife cover. The results of these biomass treatments, seen in Figure 1, are

similar to the treatment objectives of a series of prescribed fire.

Supply

Because of the controversial nature of "traditional" forestry practices, many public land managers have avoided an active forest or woodland management program. Even restoration work involving only the cutting of small trees has had little support by land managers. Members of most environmental organizations resist any forestry work – even ecological restoration – if it involves a commercial venture. The environmental community refers to this as a "perverse incentive" to cut trees. The reasons for these feelings are many, but generally stem from a lack of trust or understanding of the professional forestry.

Figure 1: This eastside pine stand was biomass thinned to improve goshawk habitat one month prior to photo. Note the dense, unthinned stand in background. Photo courtesy of Eagle Lake R.D., Lassen National Forest

For biomass opportunities to expand, there is a need for a focused outreach and education program on the costs and benefits of biomass utilization targeted toward agency managers, environmental organizations, and the general public.

Technical Knowledge

Most people, even professional foresters and field technicians in forest and woodland management, are unaware of the potential benefits and the wide range of field conditions where biomass harvesting is both practical and economical. Even seasoned forest managers are reluctant to utilize this valuable tool in reducing hazardous fuels or conducting commercial thinnings. Forest managers need information on equipment limitations, contract requirements and contract administration, markets and economies for the wide spectrum of forest products (often called "multi-products") which contribute to the long-term success of a healthy biomass products industry.

Outreach

For a biomass program to be successful on public lands an outreach and education program needs to be conducted with a target audience of agency managers, environmental organizations, and the general public. The objective would be to provide information on the state-of-the-art technology which is available to utilize small diameter wood by-products and the many benefits which biomass thinning can provide.

Administrative Barriers

Inventory

Most of the BLM forest and woodlands have not had an activity or Plan level inventory for over 25 years. Another important barrier is that there is no consistent method for inventory of woodland resources which play a major role in the biomass picture. The lack of credible, consistent data is acknowledged both inside and outside the agency.

Without this basic inventory data, it is difficult to make an accurate calculation of the sustainable supply of biomass feedstock. Based on the extraordinary mortality occurring throughout the Public Domain, it is obvious that much work needs to be done to reverse the overstocked forest conditions. There is credible evidence to support immediate restoration efforts. However, in order to support resource allocation decisions, a comprehensive inventory should start immediately.

There is an opportunity to explore the use of the Forest Inventory and Analysis (FIA) data from the USDA Forest Service. The FIA data is multi-agency in scope, relatively inexpensive, and at relatively minor costs can be adapted to provide the type of information necessary to address questions of biomass feedstock locations and quantities on BLM managed lands. The FIA data protocols are currently being revised to include measures of smaller trees and will also provide estimates of biomass in bone dry tons. BLM should support, both in staffing and budgeting, this important program.

NEPA/ESA

Compliance with National Environmental Policy Act (NEPA) and Endangered Species Act (ESA) requirements have often slowed the ability to offer forest and woodland management or restoration projects. These requirements lead to better informed decisions, and are simply "process" issues and not "barriers". Much of the delays are due to inadequate staffing by both BLM and the consultation agencies: the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Interagency efforts are currently underway to expedite these consultation procedures.

There is also a critical shortage in skills to plan, write and coordinate NEPA and ESA compliance. This leads to poor quality documents, increased vulnerability to appeals and litigation, and considerable re-work. Failure to utilize public scoping through local Resource Advisory or Fire Safe Councils may mean missed opportunities to use Categorical Exclusions, or Environmental Assessments rather than a lengthy Environmental Impact Statement. The end result is a low return on investment. This process can be so complex that it discourages attempting even simple projects such as biomass thinning.

Budget

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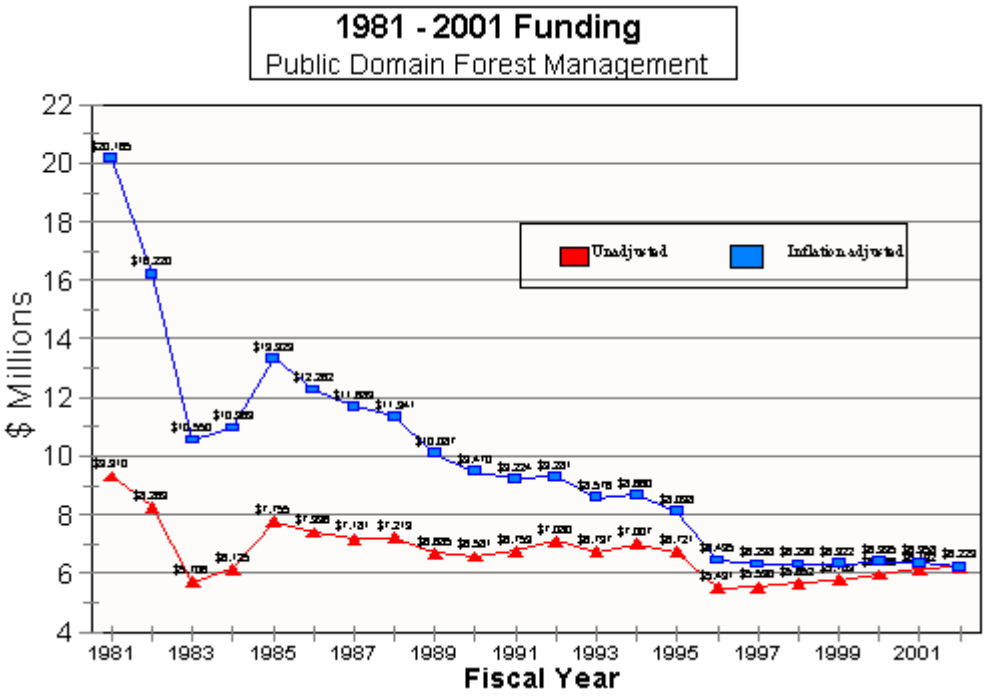

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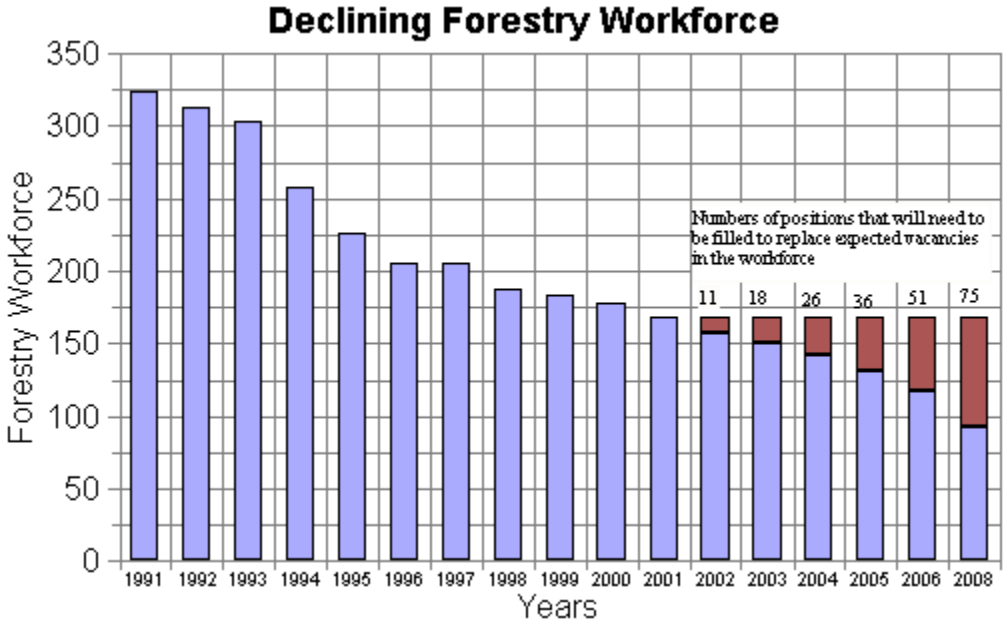

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fuel – has tremendous potential as a clean fuel source. This technology has only been applied in a few places in the U.S., but is used throughout Western Europe.

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Stewardship Contracts

The USDA Forest Service has been given special, temporary authority to use a variety of innovative authorities such as "goods for services" contracts and local retention of receipts to do forest restoration work which has limited commercial value. The focus of the work is usually forest thinning, fuel hazard reduction and watershed improvement. Under "goods for services" some small trees and biomass are removed and "traded" against the value of the services provided. This stewardship authority could be invaluable in situations where there are limited commercial products, as is the case with many biomass thinning projects. The BLM does not have this authority, however, it would be a useful tool for forest and woodland restoration.

The USDA Forest Service is also using service contracts with embedded timber sales under their existing contract authorities. Funds received under the sale are kept separate from those used to pay for the services and are transferred directly to the U.S. Treasury. This avoids the appearance that the agency is re-directing appropriations. BLM needs the authority to pursue a variety of contracting avenues to avoid the concern about funding "augmentation" (per Comptroller General decision).

Contacts and References

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Mike Haske, BLM, Deputy Group Manager, Fish, Wildlife and Forests Group (WO-230)
Rick Tholen, BLM, Forest Health Program Manager, Fish, Wildlife and Forests Group (WO-230)
John Sebelius, USDA Forest Service (on detail to White House Energy Streamlining Task Force)
Al Vazquez, Bob Andrews, Rod Vineyard, Don Dockery, USDA Forest Service, Eagle Lake RD
Mike Kossey, USDA, Rural Utility Service
Bill Von Sagan, USDA Forest Service

Reference materials used in this paper:

* National Renewable Energy Lab publications

* Barriers to biomass production on National Forests (draft report by Mark Necodom and Tad Mason)

* Forest Biomass for Energy, Safety and Forest Health (draft report by USFS)

Biomass Energy Opportunities on Public Lands

Summary of Key Points:

- New bio-energy plants are unlikely in areas of significant Federal ownership, without a reliable source of raw material to meet the needs of investors.

- Existing BLM timber sale contracts (with completed NEPA analysis) could provide twenty-five times more acres for biomass utilization than current levels. An active forest management and restoration program could provide a potential energy supply of 438 Gigawatt hours.

- Reducing hazardous fuels under the National Fire Plan provides the greatest immediate opportunity to expand biomass production on public lands. Potential energy supply: 219 Gigawatt hours.

- There is a need for a coherent, inter-Departmental strategy to define a successful federal role in renewable energy.

- Forest and woodland inventory should be completed in order to support resource allocation decisions and help determine sustainable supplies of raw material.

- The budget for the Public Domain Forest Management and the Oregon & California Forest Management budgets have declined over 60% (inflation adjusted) since 1981, severely hindering the ability to develop forest and fuels management projects with biomass opportunities.

- An effective biomass strategy on public lands will require a larger cadre of professional foresters and other resource professionals with a clear understanding of current ecosystem science and vegetation management technologies, as well as knowledge and skills to plan, write, coordinate, facilitate and monitor a timely NEPA and ESA process.

- Changes in policy and contracting procedures will help private contractors and the forest products industry determine appropriate products and markets, and yield greater biomass opportunities.

Biomass Energy Opportunities on Public Lands

Availability of Supply

The American Bioenergy Association puts it simply: "biomass is stored solar energy". Therefore wherever vegetation is available, there is a potential supply. Biomass for energy typically includes fuel crops, such as hybrid poplars and switchgrass, agricultural residues such as corn stover, rice straw, wheat straw or other agricultural by-products, municipal solid wastes, and forest residues. For the purposes of this discussion, however, biomass refers primarily to small trees or limbs, tops and other forest residues and woody plants. Similarly, "bioenergy" refers to a broad suite of biomass uses, including combustion for electricity, biomass gasification, conversion to ethanol and bio-diesel production.

There is an important difference between biomass inventory and its availability. While hundreds of millions of tons of biomass may be growing in private and public forests, only a small fraction is actually available. This analysis uses a conservative assumption, based on practical experience, that 50% of all treatment areas have economic, topographic or environmental constraints that make biomass harvest impractical.

There is an immediate opportunity for at least a 25-fold increase in acres available for biomass utilization from existing Bureau of Land Management (BLM) timber sales and fuels reduction projects. The BLM conducts forest products sales on over 10,000 acres per year. Only 2% (217 acres) of these treatments utilized biomass as part of a fuels reduction strategy in Fiscal Year 2001. Removing biomass will reduce hazardous fuels generated by the commercial harvesting operation. Not only does this result in lower hazardous fuels conditions for public lands, and reduce the risks to prescribed or natural fires, it can also reduce or offset the brush disposal costs to timber purchasers.

At the current rate of treatment it will take over 500 years to treat the estimated 12 million acres of forest and woodland restoration needs in Public Domain lands managed by the BLM. Obviously this treatment level is far below the potential and far below the desired level for ecological restoration. If the BLM were to initiate an active 30 year forest and woodland restoration program, the agency would need to treat 150,000 acres a year. A combined program of forest management and forest restoration treatments would mean a 360-fold increase in biomass harvest over current production levels (80,000 acres vs. 217 acres per year).

Table 1 – Forest Management and Restoration Opportunities for Biomass Production

Type	Total Acres	Annual Acres Available	Acres Suitable*
Existing Contracts	10,000	N/A	5,000
Forest Management	10,000	10,000	5,000
Forest Restoration	12,000,000	150,000	75,000
Totals	12,020,000	160,000	80,000

* assumes 50% of the acres available are suitable for biomass production.

At a crude, estimated conversion rate of 8,000 Bone Dry Tons (BDT) to one megawatt year, and five BDT per acre, this represents a potential energy source of 50 Megawatt years, or 438 Gigawatt hours. NREL conversion factors indicate this would replace approximately 200,000 tons of coal.

Opportunities

In June 2001, Secretary Norton told the House Committee on Resources:

> " *...Utilization of biomass for energy production is consistent with a National Energy Policy objective to increase America's use of renewable and alternative energy sources. Biomass utilization is also consistent with the goals and objectives of the National Fire Plan to reduce accumulations of woody material that create a fire hazard, threatening communities and forests and rangelands....*"

By far the greatest opportunity for producing biomass on public lands is by reducing hazardous fuels under the National Fire Plan. To a high degree, the woody fuels which are typically used in bioenergy are the same materials which contribute to the rapid spread of wildfires or are ladder fuels which allow for damaging crown fires.

The Bureau of Land Management has estimated that there are some 110 to 130 million acres of lands at high risk and another 85 to 105 million acres at moderate risk to catastrophic damage by wildfire. The Department of Agriculture has estimated 73 million acres of forested USDA Forest Service lands are at moderate to high risk of catastrophic wildfire (Report to the President, September 9, 2000). Biomass production using the types of equipment available today is economically and technically feasible on only a small portion of theses lands. Other constraints include the types of fuels to be treated (mostly in shrub and grasslands), access to markets, conflicting land use allocations, and environmental concerns.

Table 2 – Fuels Treatment Opportunities for Biomass Production

Public Agency	Acres at moderate to high risk of catastrophic wildfire	Fuels treatment acres planned in FY2002	Acres potentially available for biomass*
BLM	28,000,000	125,000 WUI 275,000 landscape	40,000
BIA	21,000,000	176,000	17,000
NPS	3,000,000	196,000	17,000
USFWS	800,000	326,000	5,000
USFS	73,000,000	1,350,000	675,000

* assumes 50% of the acres available are suitable for biomass production.

At a crude, estimated conversion rate of 8,000 Bone Dry Tons (BDT) to one megawatt year, and five BDT per acre, the BLM portion of this represents a potential energy source of 25 Megawatt years, or 219 Gigawatt hours. NREL conversion factors equate this to approximately 100,000 tons of coal.

Specific Examples of BLM Opportunities:

- The Alturas and Eagle Lake Field Offices in northeastern California have experience in biomass projects on forested lands and are now proposing a juniper restoration project. This proposal, if successful, has outstanding possibilities throughout the 37 million acres of BLM's woodlands. Northeastern California has an active biomass industry, with well-established infrastructure, so the probability of success is very high.

- The Montana State Director has identified a pro-active forest restoration program which, if funded, could provide a 900% increase in restoration treatments. Proposed as a long-term (over 60 years) restoration program, this is the type of commitment which will attract investments in biomass infrastructure.

- The Ely District in eastern Nevada has committed to produce over 50-100,000 tons per year of pinyon-juniper biomass products as part of their Eastern Nevada Landscape Restoration Coalition (Coalition) project. The Coalition involves 75 federal, State, and local governments, private foundations and environmental groups, and local community and industry leaders. Designed to restore and improve habitat for sage grouse and Rocky Mountain elk, the project will treat over 18,000 acres of woodlands in FY 2002.

External Opportunities

Twelve States have Renewable Portfolio Standards which require a certain percentage of the State energy portfolio must come from renewable energy. In the West, for example, Nevada requires 5% renewables by 2003 and 15% renewables by 2015. New Mexico and Arizona have less ambitious programs, at 5% and 1.1% respectively. California had a similar program several years ago which encouraged the development of a biomass industry and infrastructure, and is expected to have a new program in place within a year.

Several States and the U.S. Congress have looked at price supports for renewable energy. One proposal would give grants to companies which remove hazardous fuels under the National Fire Plan as biomass feedstock. Tax credits and energy surcharges have also been explored. These types of supports should be encouraged, as they go a long way towards reducing private investor risks and encouraging biomass supplies.

Communication Barriers

Perception

Land managers are generally unaware of the full range of tools available to solve ecological restoration and forest or woodland health problems. Often times there is a failure to recognize new or different approaches. For example, many managers think that it costs less to treat an acre of forest by prescribed fire compared to mechanical removal of small trees. This is frequently untrue, especially when considering the risks of escaped fire to adjacent communities and critical habitat areas and the uncertainty of protecting valuable resources and large trees. For example, biomass operations on the Eagle Lake Ranger District of the Lassen National Forest yielded a gross average return to the government of $146.65/acre (ten year average from 30 sales, range of $5.88 to $647.59 per acre) on a total of 15,732 acres of treatments . The costs of similar treatments, using a series of prescribed burns in a forested environment range from $100 to $400/acre. Thus the net difference between mechanical treatment over prescribed fire is $146 + $100 to $400 (savings by not burning) = $246 to $546/acre. This doesn't include the social values of reduced smoke pollution and the aesthetics of unburned small or large trees.

There is a common perception that forestry activities are damaging to the environment. However, soil disturbance, because of the type of equipment used and small size trees with wide weight distribution area, is minimal. Biomass harvesting typically uses medium-sized mechanical shears with a grapple to hold the tree. The operator then cuts or shears the tree and carries the tree and lays it in a bundle. By controlling the direction of fall, there is minimal damage to desired residual trees. Therefore, compared to prescribed burning, research indicates a greater level of precision of application can be achieved through the biomass operation. Mechanical harvest also provides an opportunity to save specific trees or groups of vegetation for wildlife cover. The results of these biomass treatments, seen in Figure 1, are

similar to the treatment objectives of a series of prescribed fire.

Supply

Because of the controversial nature of "traditional" forestry practices, many public land managers have avoided an active forest or woodland management program. Even restoration work involving only the cutting of small trees has had little support by land managers. Members of most environmental organizations resist any forestry work – even ecological restoration – if it involves a commercial venture. The environmental community refers to this as a "perverse incentive" to cut trees. The reasons for these feelings are many, but generally stem from a lack of trust or understanding of the professional forestry.

Figure 1: This eastside pine stand was biomass thinned to improve goshawk habitat one month prior to photo. Note the dense, unthinned stand in background. Photo courtesy of Eagle Lake R.D., Lassen National Forest

For biomass opportunities to expand, there is a need for a focused outreach and education program on the costs and benefits of biomass utilization targeted toward agency managers, environmental organizations, and the general public.

Technical Knowledge

Most people, even professional foresters and field technicians in forest and woodland management, are unaware of the potential benefits and the wide range of field conditions where biomass harvesting is both practical and economical. Even seasoned forest managers are reluctant to utilize this valuable tool in reducing hazardous fuels or conducting commercial thinnings. Forest managers need information on equipment limitations, contract requirements and contract administration, markets and economies for the wide spectrum of forest products (often called "multi-products") which contribute to the long-term success of a healthy biomass products industry.

Outreach

For a biomass program to be successful on public lands an outreach and education program needs to be conducted with a target audience of agency managers, environmental organizations, and the general public. The objective would be to provide information on the state-of-the-art technology which is available to utilize small diameter wood by-products and the many benefits which biomass thinning can provide.

Administrative Barriers

Inventory

Most of the BLM forest and woodlands have not had an activity or Plan level inventory for over 25 years. Another important barrier is that there is no consistent method for inventory of woodland resources which play a major role in the biomass picture. The lack of credible, consistent data is acknowledged both inside and outside the agency.

Without this basic inventory data, it is difficult to make an accurate calculation of the sustainable supply of biomass feedstock. Based on the extraordinary mortality occurring throughout the Public Domain, it is obvious that much work needs to be done to reverse the overstocked forest conditions. There is credible evidence to support immediate restoration efforts. However, in order to support resource allocation decisions, a comprehensive inventory should start immediately.

There is an opportunity to explore the use of the Forest Inventory and Analysis (FIA) data from the USDA Forest Service. The FIA data is multi-agency in scope, relatively inexpensive, and at relatively minor costs can be adapted to provide the type of information necessary to address questions of biomass feedstock locations and quantities on BLM managed lands. The FIA data protocols are currently being revised to include measures of smaller trees and will also provide estimates of biomass in bone dry tons. BLM should support, both in staffing and budgeting, this important program.

NEPA/ESA

Compliance with National Environmental Policy Act (NEPA) and Endangered Species Act (ESA) requirements have often slowed the ability to offer forest and woodland management or restoration projects. These requirements lead to better informed decisions, and are simply "process" issues and not "barriers". Much of the delays are due to inadequate staffing by both BLM and the consultation agencies: the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Interagency efforts are currently underway to expedite these consultation procedures.

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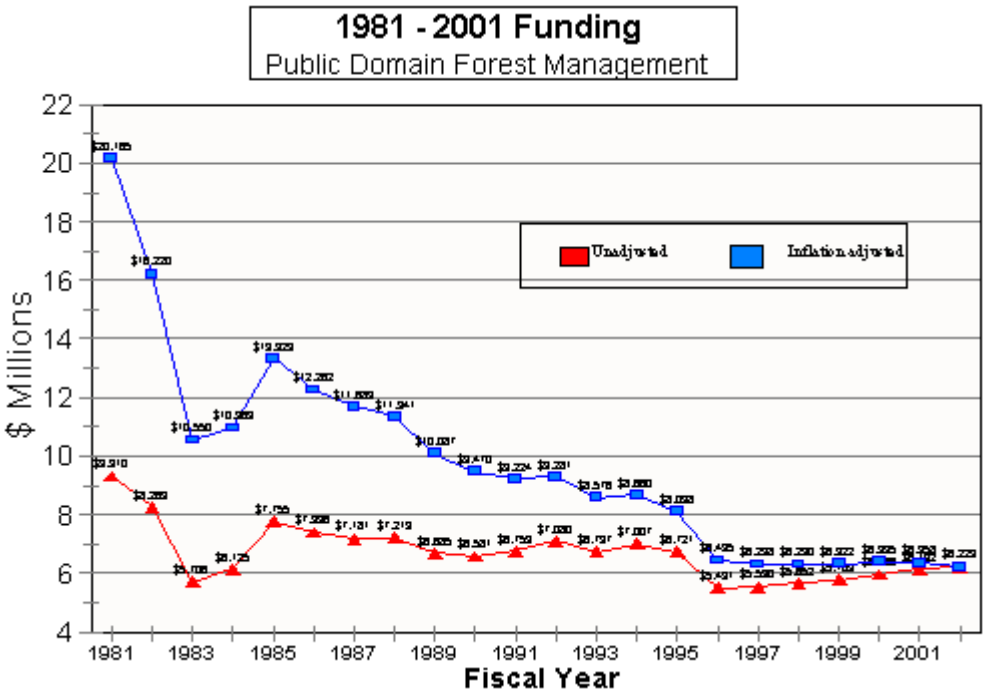

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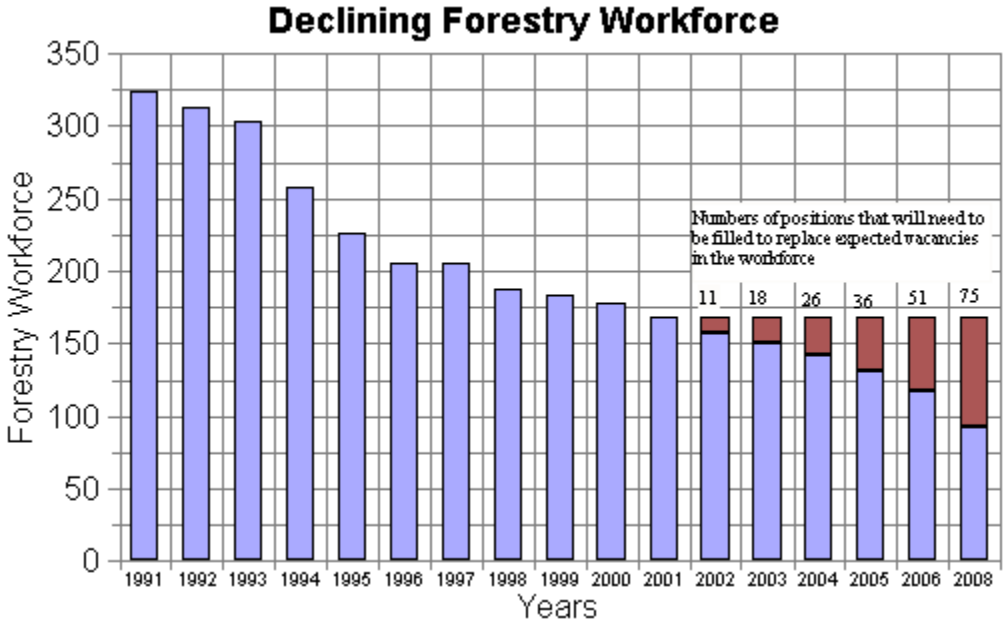

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Historically, many sales were sold with estimated volumes, which cost less to prepare because the statistical standards were lower. Forest products were then "scaled" and the Purchaser was billed for the actual quantity removed. The process used for scaling was often expensive and required increased sale administration costs to ensure that the contract utilization standards were followed. With sales based on weight, unit costs for scaling are significantly reduced for both the government and the Purchaser. When weight scaling is combined with single unit pricing, government contract administration costs and the risk of poor utilization are virtually eliminated. The risk of timber theft in transportation is also reduced, allowing the sale administrator to spend more time in the woods, where they should be focusing. Purchasers also bid higher values due to lower scaling costs and less risk in determining the final amount of wood products to be removed.

Stewardship Contracts

The USDA Forest Service has been given special, temporary authority to use a variety of innovative authorities such as "goods for services" contracts and local retention of receipts to do forest restoration work which has limited commercial value. The focus of the work is usually forest thinning, fuel hazard reduction and watershed improvement. Under "goods for services" some small trees and biomass are removed and "traded" against the value of the services provided. This stewardship authority could be invaluable in situations where there are limited commercial products, as is the case with many biomass thinning projects. The BLM does not have this authority, however, it would be a useful tool for forest and woodland restoration.

The USDA Forest Service is also using service contracts with embedded timber sales under their existing contract authorities. Funds received under the sale are kept separate from those used to pay for the services and are transferred directly to the U.S. Treasury. This avoids the appearance that the agency is re-directing appropriations. BLM needs the authority to pursue a variety of contracting avenues to avoid the concern about funding "augmentation" (per Comptroller General decision).

Contacts and References

The following individuals provided advice or comments on the preparation of this paper:
Tad Mason, TSS Consultants
Mark Nechodom, USDA Forest Service, PSW Experiment Station
Larry Swann, USDA Forest Service, Winema National Forest
Mike Haske, BLM, Deputy Group Manager, Fish, Wildlife and Forests Group (WO-230)
Rick Tholen, BLM, Forest Health Program Manager, Fish, Wildlife and Forests Group (WO-230)
John Sebelius, USDA Forest Service (on detail to White House Energy Streamlining Task Force)
Al Vazquez, Bob Andrews, Rod Vineyard, Don Dockery, USDA Forest Service, Eagle Lake RD
Mike Kossey, USDA, Rural Utility Service
Bill Von Sagan, USDA Forest Service

Reference materials used in this paper:

* National Renewable Energy Lab publications

* Barriers to biomass production on National Forests (draft report by Mark Necodom and Tad Mason)

* Forest Biomass for Energy, Safety and Forest Health (draft report by USFS)

United States Department of the Interior

OFFICE OF THE ASSISTANT SECRETARY
POLICY, MANAGEMENT AND BUDGET
Washington, DC 20240

TAKE PRIDE IN AMERICA

APR 0 8 2004

Memorandum

To: Assistant Secretaries
Solicitor
Bureau Directors

From: P. Lynn Scarlett

Subject: Implementation of the Policy Principles for Woody Biomass Utilization

On June 18, 2003 Secretary Gale A. Norton signed the *Memorandum of Understanding On Policy Principles for Woody Biomass Utilization for Restoration and Fuel Treatments On Forests, Woodlands, and Rangelands among the Department of the Interior, the Department of Energy and the Department of Agriculture* (MOU). This letter transmits that document for immediate implementation of the Department of the Interior Bureaus and Offices.

The President recently signed the Healthy Forests Restoration Act (P.L. 108-148), or HFRA, which gives the Department of the Interior new tools and increased opportunities to address forest, woodland and rangeland health and protect communities and resources from catastrophic wildfires. Title II of the HFRA provides new authorities to encourage commercial biomass utilization. Additionally, the National Energy Policy and the National Fire Plan 10 Year Comprehensive Strategy –Implementation Plan led by the Western Governors, and the August 2002 White House Report *In Response to the National Energy Policy Recommendations to Increase Renewable Energy Production on Federal Lands*, signed by Secretary Abraham and Secretary Norton, all call for utilization of woody biomass to meet the nation's energy needs and supporting local communities.

The message from the President, the Congress and the States is clear: we should utilize the woody biomass by-products from restoration and fuels treatment projects wherever ecologically and economically appropriate and in accordance with the law.

It is now time for the Department of the Interior, and our partners at DOE and USDA, to act. Until such time as we can revise the Departmental Manual, I am directing the Bureaus to begin implementation of the policy principles in the Woody Biomass MOU.

The eight policy principles of the MOU are:

1) Include local communities, interested parties, and the general public in the formulation and consideration of woody biomass utilization strategies.

2) Promote public understanding of the quantity and quality of woody biomass that may be made available from federal lands and neighboring Tribal, State, and private forests, woodlands, and rangelands nationwide.

3) Promote public understanding that woody biomass utilization may be an effective tool for restoration and fuels treatment projects.

4) Develop and apply the best scientific knowledge pertaining to woody biomass utilization and forest management practices for reducing hazardous fuels and improving forest health.

5) Encourage the sustainable development and stabilization of woody biomass utilization markets.

6) Support Indian Tribes, as appropriate, in the development and establishment of woody biomass utilization within Tribal communities as a means of creating jobs, establishing infrastructure, and supporting new economic opportunities.

7) Explore opportunities to provide a reliable, sustainable supply of woody biomass.

8) Develop and apply meaningful measures of successful outcomes in woody biomass utilization.

For further information about this letter, the MOU or the biomass policy, please contact John Stewart, Office of Wildland Fire Coordination, at (202) 606-0504.

Attachment: Woody Biomass MOU, June 13, 2003

Memorandum of Understanding
On Policy Principles For

Woody Biomass Utilization for Restoration and Fuel Treatments On Forests, Woodlands, and Rangelands

United States Department of Agriculture
And
United States Department of Energy
And
United States Department of the Interior

THIS MEMORANDUM OF UNDERSTANDING (MOU) is hereby entered into by and among the United States Department of Agriculture, the United States Department of Energy, and the United States Department of the Interior.

Preamble: *The Secretaries 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.*

A. PURPOSE:

The purpose of this MOU is to demonstrate a commitment to develop and apply consistent and complementary policies and procedures across three Federal departments to encourage utilization of woody biomass by-products that result from forest, woodland, and rangeland restoration and fuel treatments when ecologically, economically, and legally appropriate, and consistent with locally developed land management plans, by:

- Communicating to our employees and partners that the harvest and utilization of woody biomass by-products can be an effective restoration and hazardous fuel reduction tool that delivers economic and environmental benefits and efficiencies;
- Promoting consideration of woody biomass utilization from restoration and fuels treatment instead of burning or other on-site disposal methods; and
- Encouraging development of new mechanisms that increase the benefits and efficiencies of woody biomass utilization.

This MOU is intended to maximize the coordination and effectiveness of the Departments of the Interior (DOI), Agriculture (USDA), and Energy (DOE) in furthering the purposes set forth in this MOU.

B. <u>STATEMENT OF MUTUAL INTERESTS</u>:

<u>Background:</u> Today between 100 and 200 million acres of America's Federal lands are at risk of catastrophic wildfires in large part due to significant changes in forest and woodland structure that have occurred in the last century. Widespread wildfire suppression and past forest, woodland, and rangeland management activities have contributed to these changes. Innovative, large scale management is needed to restore at-risk ecosystems to healthy and resilient conditions.

In 2002, 7.2 million acres of Federal lands burned, nearly double the ten-year average. This followed the devastating 2000 wildfire season, during which over 8.4 million acres burned and which prompted development of the National Fire Plan. President Bush has focused attention on this issue in his Healthy Forests Initiative.

The President's Healthy Forests Initiative, the National Fire Plan and the joint Federal-State 10-year Comprehensive Strategy Implementation Plan all call for biomass and wood fiber utilization as an integral component of restoring our Nation's precious forests, woodlands, and rangelands. Biomass utilization can also meet a key objective of the National Energy Policy by contributing to diversification of the Nation's energy supply. Further, the August 20, 2002, *White House Report In Response to the National Energy Policy Recommendations to Increase Renewable Energy Production on Federal Lands* includes a Proposed Action (3.3) to "Establish a Biomass Initiative at the Department of the Interior." The Report was prepared by DOE and DOI but includes a number of actions by, and related to, USDA biomass utilization efforts. Coordination between DOI, USDA, and DOE is important to the success of these initiatives, as is working cooperatively with States, Tribes, private landowners, Non-Governmental Organizations, and other interested parties and potential partners.

In this MOU, *restoration* refers to those management actions that seek to restore forest, woodland, and/or rangeland health, including such things as thinning and other stocking control actions, species conversion, invasive species management, insect and disease management, and soil and water conservation actions. In this MOU, *fuels treatment* and *hazardous fuel reduction* are synonymous terms and refer to management actions that seek to reduce the rate of spread, intensity, resistance to control, and crowning potential of wildfires by reducing available fuel; examples include thinning, chipping, crushing, piling, burning, and actions that reduce or remove live and dead woody fuels. In this MOU, *woody biomass* is defined as the trees and woody plants, including limbs, tops, needles, leaves, and other woody parts, grown in a forest, woodland, or rangeland environment, that are the by-products of restoration and hazardous fuel reduction treatments. In this MOU, *woody biomass utilization* is defined as the harvest, sale, offer, trade, and/or utilization of woody biomass to produce the full range of wood products, including timber, engineered lumber, paper and pulp, furniture and value-added commodities, and bio-energy and/or bio-based products such as plastics, ethanol, and diesel.

<u>Need for this MOU</u>: USDA is responsible for the management of 192 million acres of National Forest System lands and for assisting in the management of 430 million acres of State and private forest lands. DOI is responsible for the management of 507 million acres of surface lands, of which approximately 120 million acres are forest and woodlands. DOE provides significant technical expertise in biomass energy and linkages to the renewable energy industry.

In addition, public assistance and grants programs administered by these three departments have positive benefits in capacity-building for woody biomass utilization in local communities, industries, and on private lands. Energy is a key market for low-value woody biomass, and DOE and USDA fund, support, and/or conduct a major share of the research concerning biomass energy alternatives.

Within the Federal family, these three departments profoundly affect whether and how woody biomass utilization is employed as a tool for forest, woodland, and rangeland restoration and fuels treatment. The development and implementation of consistent and complementary policies and procedures can help maximize Federal efficiency and effectiveness of woody biomass utilization.

Woody biomass utilization can help reduce or offset the cost and increase the quality of the restoration or hazardous fuel reduction treatments. Woody biomass utilization can also have additional value in that it may result in more diverse forest ecosystems, characterized by native flora and fauna, healthy watersheds, better air quality, improved scenic qualities, more fire-resilient landscapes, and reduced wildfire threats to communities, and may provide an alternative waste management strategy.

C. POLICY PRINCIPLES

DOI, DOE and USDA will use their statutory authorities to support the Principles listed below, as appropriate:

1) Include local communities, interested parties, and the general public in the formulation and consideration of woody biomass utilization strategies.

Examples:

- Communications that further the understanding that the implementation of the President's Healthy Forests Initiative and National Fire Plan go beyond Federal boundaries and affect local communities.
- Collaborative partnerships and public involvement programs and projects that provide value and enhance the economics, successes, and opportunities of utilizing woody biomass.
- Efforts to share knowledge and technology with community leaders, business owners, and private forest landowners.

2) Promote public understanding of the quantity and quality of woody biomass that may be made available from Federal lands and neighboring Tribal, State, and private forests, woodlands, and rangelands nationwide.

Examples:

- Inventory and analyze known geographic, transportation, and land use designation parameters.
- Evaluate woody biomass utilization capability in communities near restoration and hazardous fuel reduction areas on Federal lands.
- Verify fire condition classes of Federal forests and woodlands.
- Inventory and classify woody material by condition classes.
- Assist non-Federal partners with assessments of biomass quantity and availability on non-Federal lands.

3) Promote public understanding that woody biomass utilization may be an effective tool for restoration and fuels treatment projects.

Examples:

- Encourage science-based analysis at the appropriate land use planning level for decisions whether to make woody biomass available for utilization.
- Emphasize local efforts directed at woody biomass availability and utilization.
- Encourage market analysis or forest products appraisal to determine whether woody biomass utilization should have preference over disposal through chipping, crushing, burning, and/or other on-site disposal methods.
- Explore landscape-level analysis and fine-scale resolution of forests, woodlands, and rangelands to support management, restoration, and hazardous fuel reduction treatments.
- Encourage strategies for economic development in local and rural communities for value-added wood products and woody biomass utilization.

4) Develop and apply the best scientific knowledge pertaining to woody biomass utilization and forest management practices for reducing hazardous fuels and improving forest health.

Examples:

- Continue to expand knowledge of bio-based products and bio-energy from wood fiber using the Biomass Research and Development Act of 2000, the Farm Security and Rural Investment Act of 2002, and other applicable authorities.
- Strengthen research and development capacity for woody biomass products and energy research, and sustainable forest harvesting and processing systems for small diameter material.
- Assist States and private non-industrial landowners in using short-rotation cropping systems and developing low-value product markets.
- Map woody biomass utilization capacity.

5) Encourage the sustainable development and stabilization of woody biomass utilization markets.

Examples:

- Promote renewable energy marketing strategies to stimulate investments in woody biomass utilization.
- Support efforts to allow retail electric power customers an option to pay an appropriate premium to purchase electricity generated from woody biomass resulting from restoration or hazardous fuels treatments.
- Encourage the production and marketing of electric energy generated from woody biomass resulting from restoration or hazardous fuels treatment.
- Inform the public of available Federal financial assistance to encourage the utilization of woody biomass from restoration and hazardous fuels treatments.
- Explore biomass transportation cost subsidies from the forest to point of use, where doing so saves or avoids higher costs of treatments or fire-fighting in the future.
- Promote new utilization technologies and technology transfer, research, and development of bio-ethanol and other bio-based products.

6) Support Indian Tribes, as appropriate, in the development and establishment of woody biomass utilization within Tribal communities as a means of creating jobs, establishing infrastructure, and supporting new economic opportunities.

Examples:

- Encourage the use of guaranteed or insured loans under the Indian Financing Act, 25 USC §1451 et seq., to the extent permissible under existing law, including a possible set-aside for pilot projects that support development of woody biomass generation utilizing hazardous fuels and by-products of forest health treatments.
- Use the Buy Indian Act, 25 USC §47, to the extent permissible by law, in the purchase or procurement of woody biomass products resulting from Indian labor or industry.
- Provide technical and policy assistance to Tribal governments for the establishment of woody biomass programs.
- Assess extent of woody biomass fuels on Indian lands.

7) Explore opportunities to provide a reliable, sustainable supply of woody biomass.

Examples:

- Investigate the feasibility of long-term or renewable contracts for removal of woody biomass from Federal lands.
- Explore expanded use of contracting authorities and mechanisms for hazardous fuel reduction or restoration treatments on public lands.
- Expedite, as appropriate, environmental analysis and review for priority restoration and hazardous fuel reduction sites in Federal forests, woodlands, and rangelands.

8) Develop and apply meaningful measures of successful outcomes in woody biomass utilization.

Examples:

- Social, economic, and environmental sustainability measures.
- Measures of unit-cost reductions in hazardous fuel treatment and forest health treatment through offset by woody biomass utilization.
- Performance or workload measures to track targets and accomplishments in the offer and sale of woody biomass from Federal lands.

D. IT IS MUTUALLY UNDERSTOOD BY ALL PARTIES THAT:

1) AUTHORITIES. These Principles will be implemented under the relevant authorities of the three Departments that are parties to this MOU.

2) TERMINATION. Any of the three Departments may terminate its participation in and agreement to this MOU, in whole or in part, at any time.

3) PARTICIPATION IN SIMILAR ACTIVITIES. This MOU in no way restricts the three Departments from participating in similar activities with other public or private agencies, organizations, and individuals.

4) PRINCIPAL CONTACTS. The principal contacts for this agreement are:

John Sebelius	John Stewart	John Ferrell
USDA Forest Service	USDOI	USDOE
Research and Development	Wildland Fire Coordination	Office of Energy Efficiency
P.O. Box 96090	Room 3060, Main Interior Bldg	and Renewable Energy
Washington, DC 20090	Washington, DC 20240	1000 Independence Ave, SW
		Washington, DC 20585-0121

5) NON-FUND OBLIGATION DOCUMENT. This MOU is neither a fiscal nor a funds obligation document. Nothing in this MOU authorizes or is intended to obligate the parties to expend, exchange, or reimburse funds, services, or supplies, or transfer or receive anything of value. If it is necessary to expend, exchange, or reimburse funds for any supplies or services, it will be accomplished under a separate contract or agreement approved by an authorized individual, and such expenditures are subject to the availability of appropriations.

6) NO RIGHT OF ACTION. This MOU is strictly for internal management purposes for the Federal Government. It is not legally enforceable and shall not be construed to create any legal obligation on the part of the signatory Secretaries or their respective Departments. This agreement shall not be construed to provide a private right or cause for action by any person or entity.

7) MODIFICATION. The Principles in this MOU are subject to relevant law, as it may be amended from time to time. Additionally, the parties may modify this MOU at any time by a written amendment executed by all parties.

8) COMPLETION DATE. This MOU is executed and made effective as of the last date shown below and shall expire ten years after such date.

THE PARTIES HERETO have executed this MOU.

/s/ Gale A. Norton — June 18, 2003
Gale A. Norton — Date
Secretary of the Interior

/s/ Spencer Abraham — June 17, 2003
Spencer Abraham — Date
Secretary of Energy

/s/ Ann M. Veneman — June 16, 2003
Ann M. Veneman — Date
Secretary of Agriculture

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Office of Fire and Aviation
3833 S. Development Ave.
Boise, Idaho 83705-5354

July 17, 2002

In Reply Refer To:
9210 (FA-630) P

EMS Transmission 07/19/02
Instruction Memorandum No. OF&A 2002-032
Expires: 09/30/2003

To: State Directors

From: Director, Office of Fire and Aviation

Subject: Utilization of By-Products Produced by Hazard Fuels Reduction Activities
DD: Sept. 30, 2002

Program Area: Fire Management/Hazard Fuels Reduction

Purpose: This Instruction Memorandum (IM) requests each State Director to report any hazard fuels treatment with by-products utilized. It also requests each State to identify any potential by-product utilization methods being used, or with potential for use, within their state.

Policy/Action: Adding a performance measure to the Workplan for the Fire Management Program.

Timeframe: Due date is September 30, 2002.

Budget Impact: None

Background: Most of our mechanical fuels reduction treatments leave vegetative material on the ground in the form of slash, small diameter wood or chips. In many instances, this residual material can be made available for other uses. This is by-product utilization. The following performance measure is identified in the Comprehensive Strategy Implementation Plan under Goal 4 (Promote Community Assistance):

> *e.) Percent of acres treated to reduce hazardous fuels by mechanical means with by-products utilized.*

We have been asked to report any hazard fuels treatment with by-products utilized as outlined by this performance measure. The output for this performance measure will be captured in the BLM Workplan for the Fire Management Program as Workload Activity 1.c.:

1.c. - % of total acres treated to reduce hazardous fuels by mechanical means with by-product utilization. Acres treated in this workload activity need to be captured and reported by September 30, 2002.

This workload measure is also being added as a reportable field in NFPORS.

Also, states are encouraged to look for additional opportunities to increase the utilization of by-products produced as a result of hazard fuels reduction activities. There may be many opportunities to make these by-products available for other uses which could provide additional benefits to local communities.

Typically, by-product utilization has consisted of allowing the public to gather firewood, harvest cedar fence posts or cut Christmas trees in treatment areas. Work has been done to explore value-added opportunities in forested areas, however, there may be opportunities to develop value-added opportunities from treatments we conduct in woodlands and shrub lands. Some examples include:

Co-generation - burning biomass waste with coal to produce electricity.

Make small diameter woodland products available to the public for the manufacturing of furniture (either rustic wood furniture or some form of laminate product).

Promote the use of woodland/shrubland by-products for the production of ethanol.

Recover and provide woodland/shrubland chips as mulch or decorative bark.

Make by-products available for heat generation purposes (this is currently occurring in Alaska).

Attached is a list of projects that are occurring in various states (Attachment 1).

I would like a listing of any potential by-product utilization opportunities within your state that, with further research and development, could increase our ability to make biomass available for the benefit of local communities. This information should be provided to Carl Gossard by September 30, 2002. A list of websites that discuss biomass utilization and may give you ideas for potential uses of biomass is attached (Attachment 2).

The information you provide will be shared across the Bureau and with our land management partners. It will certainly generate new methods in which we can provide opportunities for communities to derive benefits in conjunction with making their communities more fire resistant.

Manual/Handbook Sections Affected: None
Coordination: RP 220 Rangeland, Soils, Water and Air Group.

Contact: If you have any technical questions concerning this IM contact Carl Gossard at (208) 387-5419.

Signed by:
Wilhemina Sorensen
Acting Director
Office of Fire and Aviation

Authenticated by:
Pat Lewis
Supervisory Mgmt. Asst.
Office Services

2 Attachments
1 - Examples of Biomass Utilization and Sustainable Livestock Grazing Practices Involving BLM Lands
2 - Biomass Websites

Distribution:
Anne Jeffery, FA-101,WO
Jay Thietten, FA-101,WO
WO-560
BLM AD's
BC Library
Group Manager, Planning and Resources
Group Manager, Support Services
Group Manager, Fire Operations
Group Manager, Aviation
Cyndie Hogg, NARTC

Examples of Biomass Utilization and Sustainable Livestock Grazing Practices Involving BLM Lands

BLM Field Office	Project Name	Project Description	Acres (if known)
Arizona Strip, AZ	Mt. Trumbull	Stand density reduction resulting in biomass utilized for cogeneration plants and firewood utilization	Unknown
Salt Lake, UT	Terra Fuel Break	Fuel break constructed near community of Terra; resulting juniper trees made available to public as firewood.	Unknown
Roswell, NM	Lincoln Village Fuels Reduction	Unwanted, expanding juniper trees were cut and made available for public firewood gathering. Posts were utilized in fence construction.	Unknown
Roswell, NM	Mount Nebo Fuels Reduction	Pinon-juniper stands thinned to improve ecological conditions. Resulting woody material made available to public as firewood.	Unknown
Miles City, MT	Shepherd AH-Nei Fuels Reduction	Ponderosa pine stands thinning to improve ecological conditions. Resulting woody material made available to public as firewood.	Unknown
Surprise Valley, CA	Newland Fuels Reduction	Dense juniper stands mechanically harvested and made available for firewood and posts	250
Alturas, CA	Muck Valley Fuels Reduction	Feller-bunchers used to shear and gather thinned trees. Materials were chipped and sold to a co-generation plant.	150

BLM Field Office	Project Name	Project Description	Acres (if known)
Alturas, CA	McCabe Fuels Reduction	Juniper removal; downed trees made available to public firewood gathering.	300
Prineville, OR	Upper and Little Deschutes Fuels Treatments	Demonstration site for The Nature Conservancy's Fire Learning Network, to involve restoration in juniper and conifer forests through mechanical thinning	Future biomass utilization of unmerchantable material
Lakeview, OR	Long Canyon Fuels Reduction	Juniper trees mechanically sheared, and made available for firewood gathering.	100
Klamath Falls, OR	Gerber Fuels Reduction	Juniper trees mechanically sheared, and made available for firewood gathering.	800

BIOMASS WEBSITES

National Renewable Energy Laboratory - Http://www.nrel.gov

Bioenergy Information Network - http://bioenergy.ornl.gov

Renewable Energy Policy Project - www.repp.org Click on Biomass -or- click on Job Creation and Renewable energy.

Ethanol - http://www.ethanol.org