



Missouri Society of American Foresters

Woody Biomass in Missouri

A Position Statement of the Missouri Society of American Foresters (MOSAF)

Position Summary

With growing interest in utilization of alternative energy sources away from coal and oil, much attention has recently been focused on potential utilization of woody biomass from forests for generating energy. MOSAF believes that new biomass markets could be beneficial to forests by creating markets for low or no-value woody material that needs to be removed for a variety of reasons (forest health, etc.), but is too costly to remove. Biomass markets could also provide an economic incentive to forest landowners to keep their forests forested rather than converting them to non-forest uses.

However, MOSAF is concerned that depending on how such markets are structured, they could also cause unintended impacts including unsustainable forest harvesting rates, soil erosion, nutrient depletion, increased sediment in streams, degradation of the natural forested landscape, and negative impacts to wildlife. Other concerns include potential impacts to other sectors of the forest products industry, recreation and tourism implications, and threats to the intrinsic forest values held by Missourians. To ensure that potential biomass markets do not become a detriment, MOSAF believes that certain safeguards should be put in place. These safeguards are listed below as Recommendations.

Recommendations

- 1) Public land management agencies, namely the US Forest Service and Missouri Department of Conservation, should work with the University Extension Service, USDA Natural Resources Conservation Service, Missouri Department of Natural Resources, Non-Governmental Organizations, Missouri Forest Products Association, and the Missouri Forest Resource Advisory Council to coordinate efforts to inform both forest landowners and forest industry, on forest management techniques designed to ensure sustainability of Missouri's forests.
- 2) MOSAF recommends that economic and tax incentives or regulatory options are explored to ensure sustainable forest management on privately-owned land.
- 3) Statewide implementation of Woody Biomass Best Management Practices should be implemented by Missouri's forest product industry for all Missouri forest lands.

- 4) Research should be conducted to advance the science of woody biomass BMP's, nutrient cycling, utilization, harvesting technology, and facility efficiency.
- 5) MOSAF advocates for coordination among forest industry initiatives, including woody biomass facilities, to minimize unsustainable harvest pressures in localized areas.
- 6) MOSAF should serve as the technical expert for sustainable forest management.
- 7) All biomass harvesting should utilize the expertise of a professional forester, preferably one certified by the Society of American Foresters.
- 8) All loggers engaged in biomass harvesting should be trained, and ultimately certified as a Master Logger through the Missouri Forest Products Association.

Background

Missouri's Forests:

Missouri's forests occupy nearly 15.4 million acres of land in the state. Nearly 83 percent of these forests are owned by approximately 339,000 non-industrial private landowners with the remaining being owned by federal, state, and municipal governments, or forest industry. Therefore, the key to sustainability of Missouri's forests and the benefits and services they provide rests largely with private landowners.

Benefits from the state's forests are numerous. They provide many economic, environmental and social benefits. They produce a wide variety of forest products, protect the soil from erosion, keep streams and rivers clean, filter air, soften the extremes of weather and add beauty to cities and towns. Much of Missouri's recreation and tourism industry is centered in the forested regions of the state. Missouri's forests are a diverse resource of plants, animals and other life forms (MDC 2009).

The forests of Missouri produce nearly 510 million cubic feet of new wood each year (USFS 2004-2008), but only 165 million cubic feet of this annual growth is harvested each year (USFS 2004-2008). Thus, forest wood volumes are increasing. However, current levels of timber harvesting in Missouri supply only about one-third of the 411 million cubic feet of forest products Missourians consume each year (U.S. Census Bureau Data and Howard 2007).

Benefits of Woody Biomass Markets:

Woody biomass can be defined as any forest product used to supply a woody biomass facility (alternative energy, paper, etc.). Woody biomass facilities can utilize low value, poor quality forest products, and other residues from sawmilling and logging. Traditionally, these resources have been under-utilized leaving most Missouri forests overstocked with low value trees while the higher quality trees suffer due to overcrowding. Woody biomass facilities can therefore provide an economic incentive to

improve forest health and facilitate natural community restoration activities on lands that previously had little or no opportunities for sustainable forest management.

Furthermore, increased utilization of forest biomass will also help improve the nation's energy security by providing an abundant, renewable fuel resource as a substitute for imported fossil fuels in both public utility and industrial power generation facilities, as well as a potential domestic source of transportation fuels (SAF 2005).

Lastly, woody biomass markets can create new business opportunities for the forest products industry, bringing new economic benefits to Missouri in the process.

Concerns about Woody Biomass Markets:

Although intense interest is focused on the establishment of woody biomass facilities in Missouri, the issue is not the woody biomass facilities themselves, but forest land use and management. Woody biomass facilities need to be recognized for what they truly are; a facility which utilizes woody material to produce electricity, heat, paper, etc.

MOSAF takes the position that any forest land use must take into account the long term sustainability of forest resources at both local and statewide scales. This includes, but is not limited to, harvest rates, the long term sustainability of plant and animal communities, conservation of soil, quality water resources, and the minimization of long term negative impacts to the aesthetic quality of forest resources. Concerns about woody biomass harvesting include overharvesting, widespread forest clearing, land conversion to non-forest use, replacing native trees with exotic species, and unacceptable levels of logging damage.

There is also concern that biomass facilities could utilize wood products that are better suited to higher value uses (flooring, furniture, etc.), and could compete with existing markets for low value timber (mulch, charcoal, etc.). MOSAF supports the wise use of forest products.

Limitations of Utilizing Woody Biomass for Energy:

As indicated above, there is growing interest in the use of woody biomass for energy. Depending on the process used, woody biomass can be used to produce heat, electricity and/or fuels (e.g. cellulosic ethanol). The efficiency ratings of these woody biomass energy products vary greatly. A 2004 USFS report shows that using woody biomass for electricity alone has an efficiency of 18-25% (the remaining heat/energy is wasted), using woody biomass for large scale heat production is 50-75% efficient, and combined heat and electricity generation results in an efficiency of 60-80%. The process of using woody biomass for cellulosic ethanol is still early in the development phase, so potential efficiency ratings are not well known (USFS 2004). MOSAF supports the efficient use of forest products.

Recent interest in utilizing woody biomass in Missouri has focused largely on generation of electricity. In 2007 Missourians consumed approximately 85.5 million megawatt-hours of electricity (MO DNR 2010). Given current technologies, efficiency rates, and levels of consumption, if all of Missouri's 345 million cubic feet of net annual growth (total growth minus existing harvest rates) were used to generate electricity, Missouri's forests could supply up to 10% of Missourian's electricity consumption. However, this figure does not take into account numerous challenges such as "distance to market", "willing sellers", "competing markets", etc. Therefore, it is likely that far less than 10% of Missouri's electricity consumption can be met with woody biomass.

In other words, while there are tangible benefits to utilizing woody biomass for generation of electricity and bio-fuels, it is important that realistic expectations be established for the limited capacity to replace fossil fuels with woody biomass. Given this limited capacity, it becomes especially clear that such markets should be used with great precaution as a tool to cost effectively improve Missouri's forests. The potential gains from resource exploitation and liquidation are far too little to justify jeopardizing a resource that is important for so many other reasons.

Private Land Considerations:

Since the majority of Missouri's forests are owned by private landowners, informing and encouraging private landowners on the proper use and management of Missouri's forests is of paramount importance.

It is recognized that each forest landowner, whether public or private, has individual goals and objectives. The United States Constitution also guarantees certain private property rights. Along with these rights comes the moral and ethical responsibility to respect the rights of others. The management decisions of forest landowners have profound impacts on all Missourians (clean air and water, aesthetics, etc.).

There are currently no regulations concerning forest harvest on private land. Private forest land utilization therefore becomes a question of land use decisions and the stewardship ethics of each individual landowner. Forest land use is determined and limited by, each landowner's understanding of how forest ecosystems evolve and are sustained, their economic needs, and global demands for forest products.

Forest land use (public and private) must meet the needs of society today while ensuring future generations the benefits of healthy and sustainable forests. MOSAF desires to see all landowners honor their stewardship responsibilities, but government must also protect property rights to secure performance of such responsibilities.

Forest Industry:

Missouri's forest industry has moral, ethical, and economic responsibilities to ensure long term sustainability of Missouri's forest resources. Education for all segments of the forest industry including loggers, primary, and secondary processors must occur.

MOSAF believes that graduation from logger training programs should be required of all loggers who harvest forest products from public lands and the same should be encouraged for private lands. Any woody biomass facilities which receive public financial incentives should also be required to utilize trained loggers.

As the Master Logger Certification program becomes better established, MOSAF believes that Certified Master Loggers should be encouraged for harvesting on public lands, and required on all private land harvests used to supply woody biomass facilities which receive public financial incentive. MOSAF recommends the use of Certified Master Loggers for all harvest operations.

Best Management Practices:

Missouri has developed “Missouri Woody Biomass Harvesting Best Management Practices” published by the Missouri Department of Conservation to help guide the sustainable harvesting of woody biomass. At the present time, these guidelines are strictly voluntary.

Professional Foresters:

MOSAF advocates implementation of forest management practices that ensure long-term sustainability of forest resources. Utilization of professional foresters to guide forest management activities is an important way to ensure that management is sustainable. Currently, less than 10% of private land timber harvests utilize a professional forester. MOSAF supports the utilization of professional forestry services for 100% of harvests.

References Cited

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