

# Missouri Forest Management Guidelines

**Voluntary Recommendations for Well-Managed Forests**



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# Foreword

Forests are one of Missouri's most important and valuable resources. Unfortunately, they are often misunderstood, mismanaged or taken for granted. Considering that 84 percent of Missouri's forest land is owned by private landowners, most of whom have limited knowledge or experience regarding forest management, the need for a set of comprehensive forest management guidelines was recognized. These voluntary Forest Management Guidelines were developed specifically for Missouri with an overall goal of providing guidance that is scientifically sound, socially acceptable, and economically practical. The guidelines are appropriate for forest landowners, forest industry professionals, professional foresters and resource managers. It is our hope that this document provides tools and techniques for landowners and forest managers to apply to future management of forests and that over time these guidelines will become the accepted best management practices for forest management activities in Missouri.

Missouri's 15.5 million acres of forests provide a wealth of benefits to all Missourians. In 2013, Missouri's forest products industry contributed approximately \$8 billion to Missouri's economy; it supported 42,500 jobs and generated \$78.5 million in state sales tax revenue. Missouri's forests provide clean water and air, unique and diverse habitats for a wide variety of birds, terrestrial and aquatic wildlife, as well as scenic beauty. Additionally, each year thousands of Missourians head out to our forests to participate in countless outdoor recreational pursuits. Unfortunately, Missouri's forests face many threats including existing and emerging insect and disease issues, an ever growing expansion of invasive species, conversion to non-forest uses, mismanagement and no management. These guidelines were developed to assist in maintaining a healthy and sustainable forest resource in Missouri. They will help to promote a thriving forest products industry that is necessary to manage our forests and ensure that forest values and services are enhanced and protected for future generations of Missourians.

The development of these guidelines took place over an 18-month period and included the input from five technical teams comprised of scientific professionals in their field of study as well as people working in the forestry profession. All are members of partner agencies and organizations affiliated with the Missouri Forest Resources Advisory Council. In addition, public input was solicited during a 60-day public comment period. All of the comments were carefully considered by the authors. This is intended to be a living document and will be continually reviewed and revised through time as new scientific information is discovered, new practices developed, new issues emerge, or forest conditions change.

The authors would like to personally acknowledge the Wisconsin Department of Natural Resources and the Minnesota Forest Resources Council for providing a framework, technical information and advice to assist us in the development of these guidelines. It is our hope that these guidelines will be universally adopted and used throughout Missouri to assist forest managers and woodland owners in meeting their goals and objectives to promote healthy and sustainable forests.

Comments or questions about the content of this document or about specific guidelines should be directed to the Missouri Department of Conservation — Forestry Division.

Sincerely,

Lisa G. Allen  
State Forester, Missouri Department of Conservation



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BMPs = Best Management Practices

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# The Purpose of These Guidelines

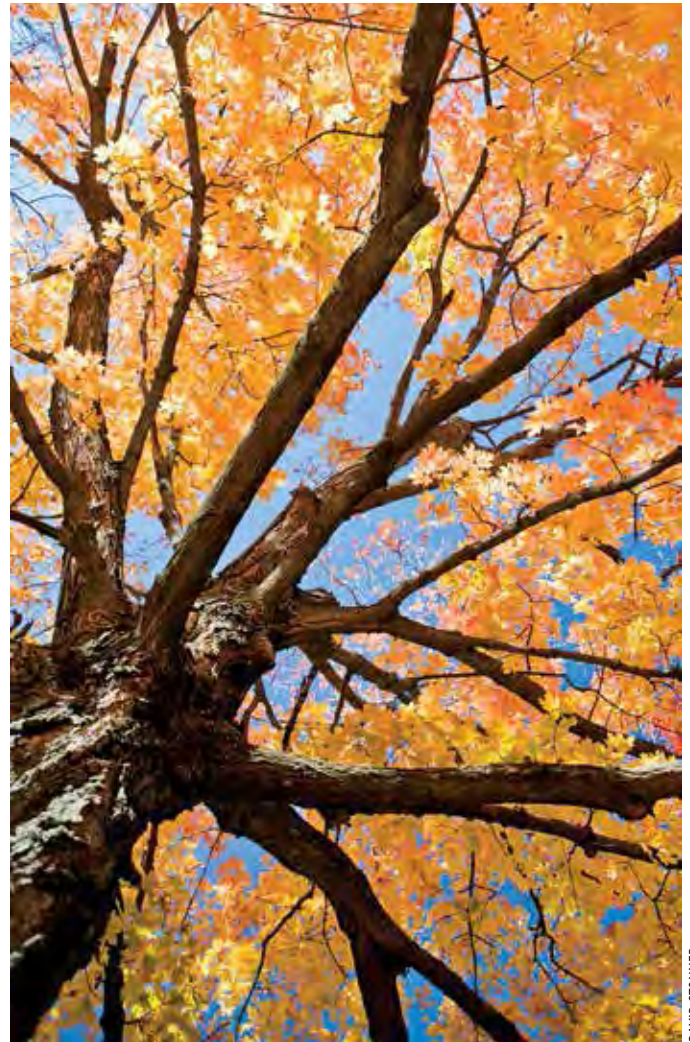
The *Missouri Forest Management Guidelines* serve a number of purposes. Drawing on input from the diverse group of stakeholders who helped prepare them, these guidelines describe the forest practices that are most likely to achieve a sustainable forest resource for Missouri citizens to value and appreciate. A listing of involved organizations and individuals is provided in the Appendix.

This document has three sections. The first part, Chapters 1 through 9, provides background information about the resource elements that are most important to sustainable forest management. This information addresses why these elements are important and the aspects of these elements that need attention when planning and implementing forest management. The second section, Chapters 10 through 12, explains the foundations of forest management. This section outlines forest management planning and the generally accepted silvicultural and forest regeneration practices. The third section, Chapters 13 through 18, offers standards, guidelines, and best management practices recommended for specific forest management activities. These recommendations are based on sound scientific input and common agreement as to what sustainable forest management means in Missouri.

The intended audience for these guidelines is, indeed, both landowners and resource managers. Although the information is technical, it is intended to be presented in a way that any interested person can understand. Resource managers may find some of the information too basic, but the best management practices listed throughout represent a comprehensive reference of specific recommendations that anyone should find useful.

Sustainability is not so much a scientific definition as it is an expression of what society values about forests. These guidelines express that:

- Missouri wishes to meet the forest-related needs of the present generation without compromising the ability of future generations to meet their own needs.
- In order to achieve this, forest resources as a whole should deliver a full range of outputs that include the generation of economic return, the protection of environmental values, and the provision of social benefits.
- This complete range of outputs is not achieved on every acre of forest in the same mix, but across the landscape and over time by a diverse group of forest landowners who are each enabled to pursue their own mix of objectives.



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- These diverse outputs are not exclusive of one another but many times supportive of one another.

That is, generating economic return by such things as a timber sale provides landowners the income that can pay for measures to protect the environment, such as waterbars on a road. By the same token, protecting environmental values such as soil, water, air, and biological diversity safeguards the basic resources that underpin economic value. Creating values that society desires serves to create the social license and support for maintaining forest resources into the future.

The guidelines serve as a way to achieve those values using practices that represent the best available science. These guidelines have been developed in cooperation with Missouri's scientific and academic community. They are a reference that gives landowners and resource managers confidence that they are employing peer-reviewed, research-validated methods for achieving desired results.

Additionally, the guidelines have been constructed with an eye toward facilitating the use of third-party forest certification where a landowner may desire to do so. Background and further details about third-party forest certification are included in the Appendix. To the extent that landowners choose to follow the practices, procedures, and processes outlined here, they will be well positioned to achieve forest certification on their property.

Because social values and scientific information evolve over time, these guidelines have been constructed as a living document. Revisions will be considered at least every five years after examining trends in forest conditions, current issues, and new scientific data. As such, they serve as one resource for continuously improving upon efforts to achieve a sustainable forest resource in the state.

It is important to state what purposes the *Missouri Forest Management Guidelines* do not serve — they are not a law, a regulation, or a legal requirement in the state of Missouri. They are a strictly voluntary set of guidelines, subject to each landowner’s decision as to whether he or she will use them or not.

Even though these guidelines are voluntary, there are laws that can influence forest management in Missouri, and landowners should be aware of these laws.

The requirements of the federal Clean Water Act (Title 33 USC, Chapter 26, Section 404) in Missouri are administered by the regional offices of the U.S. Army Corps of Engineers, Regulatory Section. The provisions of Section 404 deal with dredge and fill activities that may impact wetlands or other jurisdictional waters. Before engaging in activities, such as placing a culvert for a stream crossing, landowners should contact the Corps to ascertain any permitting requirements.

If it is determined that a permit is necessary, the landowner will also need to secure a 401 Clean Water Certification from the Missouri Department of Natural Resources. Clean Water Act Section 401 permits are administered by the Department of Natural Resources ([dnr.mo.gov](http://dnr.mo.gov)) under Revised Missouri Statutes Chapter 644.

Best management practices to protect water quality during forest management activities are voluntary in Missouri. Nonetheless, landowners are obligated under the law to prevent sediment from entering water bodies at levels that would exceed state water quality standards as a result of activities, such as timber harvesting and road construction. See Chapter 644, Section 051:

*It is unlawful for any person:*

- *To cause pollution of any waters of the state or to place or cause or permit to be placed any water contaminant in a location where it is reasonably certain to cause pollution of any waters of the state;*
- *To discharge any water contaminants into any waters of the state which reduce the quality of such waters below the water quality standards established by the commission.*

Where there is federal involvement on private land, when a 404 permit is required or federal grant dollars are received, for example, landowners must also comply with the National Historic Preservation Act. The state’s suggested common format for stewardship and other plans contains a section where the potential existence of cultural resources is considered. See Chapter 6 for more information.

The use of pesticides in the state is regulated by the Missouri Department of Agriculture under Revised Missouri Statutes Chapter 281. Applicator licenses are required in order to purchase and use “Restricted Use Pesticides” as defined by the federal Environmental Protection Agency. The Department of Agriculture’s website ([mda.mo.gov](http://mda.mo.gov)) allows you to query whether a particular chemical is restricted. Chemical use in Missouri forests is fairly limited and seldom involves a “Restricted Use Pesticide,” but it is important to be aware of the legal requirements.

Missouri has a State Forestry Law (Revised Missouri Statutes Chapter 254) that is administered by the Department of Conservation. Most of this law pertains to an incentive program that is outdated and no longer widely used by landowners. It is worth noting, though, that Section 250 requires landowners to use any reasonable effort to control wildfire on their property and to allow Conservation Department employees access for the purpose of suppressing wildfire.

All of Missouri’s statutes can be searched at [moga.mo.gov](http://moga.mo.gov).

One federal law that resource managers frequently encounter is the Endangered Species Act (Title 16 USC Chapter 35). The Endangered Species Act makes it illegal for anyone to “take” a species that is listed as federally endangered. This could involve the obvious, such as shooting an Indiana bat, or it could be a less direct method, such as cutting down a tree that contains a roosting Indiana bat.

An example of another species that is listed is the Ozark hellbender. Harvesting activity that might destroy their aquatic habitat (such as running equipment through a stream that represents an important breeding area) could again be considered a “take” of that species. Chapter 3 provides information on how to become aware of the potential for endangered species on any given piece of property and how to identify the management practices most suited to protecting that species.

Another federal law to know is The Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BAGEPA). MBTA protects migratory birds, their nests, and eggs. Bald eagles were removed from the Endangered Species List in 2007. Individuals, nests, eggs, and young are now protected under the BAGEPA and MBTA.