

FIRE MANAGEMENT

Position:

The Michigan Society of American Foresters (SAF) supports stable and adequate funding dedicated to wildfire suppression. Programs that educate landowners and local governments of the danger of wildfire and methods for minimizing risk are also needed. Michigan SAF supports the use of prescribed fire under proper weather and fuel conditions to achieve clearly defined land management objectives. Prescribed fires and modified fire suppression techniques must be conducted under conditions that minimize the potential health hazards, effects of smoke, and risks of escape.

Background & Issues:

Fire is a natural element of many ecosystems in Michigan, including forests, savannas, and prairies. These ecosystems have evolved with fire, and fire plays an essential role sustaining their viability and vigor. Land managers use prescribed fire to restore fire-adapted ecosystems and reduce fuels, but unplanned or uncontrolled fires—wildfires—can be destructive to ecosystems, to property, and to human life. Fire management comprises the appropriate use of prescribed fire as well as the prevention and suppression of wildfires. Michigan's fire history has taken some extreme turns. During the millennia preceding the major Euro-American settlement that began in the early 1800s, fires were a common occurrence in Michigan ecosystems, with Native People effectively using fire as a land management tool. During the period of forest exploitation that began in the mid-1800s, wildfires of catastrophic proportions—the effects of which can still be seen—burned back and forth across the Michigan landscape. By the 1920s little forest was left to burn. Eventually, fire prevention and suppression efforts improved so that fire was effectively excluded. The last decades of the 20th century witnessed a growing recognition by ecologists and foresters that fire was a natural part of ecosystems and prescribed fires were needed to reintroduce this disturbance agent.

Nationwide and in Michigan, the risk of catastrophic wildfires is high. Conifer forests—those dominated by species like pine, spruce and fir—are at highest risk. Many of these forests have matured without the low-intensity maintenance fires that historically occurred, resulting in dense stands containing large fuel loads. Fires that ignite in such forests can quickly become conflagrations that are difficult and expensive to suppress. It is likely that climate changes will only accentuate this problem.

Another concern is the rise in permanent or recreational homes in or near fire-prone ecosystems. The increasing rural population increases the probability that a wildfire will be ignited, as over 90% of Michigan wildfires are human-caused. People in forests also greatly complicate fire-fighting strategies as saving lives and structures becomes the highest priority.

Issue: The “wildland-urban interface” refers to areas where human communities and natural communities abut; the “wildland-urban intermix” occurs where human and wild communities intermingle (both abbreviated WUI). The interface and intermix present unique challenges for fire managers in areas where the wild community is fire prone. Forests dominated by red and jack pines that occur in northern Michigan are at particular risk (Haight et al. 2004). Professional foresters can help to educate people living in high-risk WUI areas on the danger of wildfire, as well as on landscaping and building materials and designs that can mitigate fire danger. Local governments also need to be advised of potential wildfire risks when crafting zoning ordinances and building and insurance codes. The national Firewise program (<http://www.firewise.org>) and Michigan State University Extension (<http://bookstore.msue.msu.edu>) produce excellent materials and programs for educating people about wildfire risks and mitigation.

Issue: During the last few decades, the accumulation of fuel to dangerous levels has occurred in many conifer forests, due principally to exclusion of the low-to moderate-intensity fires that once burned through them. Recent research has shown that these fire-prone Michigan ecosystems still burn more frequently than hardwood-dominated, fire-resistant ecosystems, but the frequency of fire is much lower than in pre-Euro American settlement times (Cleland et al. 2004). Thinning dense stands may be necessary before prescribed fire can be employed to maintain safe fuel levels. Forest managers need to be actively engaged in assessing fuel levels and implementing fuel-reduction treatments where necessary. Funding for these activities on both the state and federal level must increase and, in fact, investments in fuel reduction treatments could pay for themselves by lowering future wildfire suppression costs (Snider, Daugherty, and Wood 2006).

Issue: “Fire-dependent” Michigan ecosystem types, such as jack pine or paper birch, depend on fire for natural regeneration and forest type perpetuation. Endangered species, like the Kirtland’s warbler and Karner blue butterfly, utilize specific habitats that were historically created by frequent fires. Certain stand characteristics that were historically common, such as the open, low-growing understory of mature red and white pine forests, were maintained by occasional surface fires. Numerous pests are controlled by fires that burn across the forest floor where these organisms complete part of their life cycle. Finally, the now-rare savannas and prairies of Michigan owe their existence to regular fires. Only through implementation of regular prescribed burning by knowledgeable and experienced professionals can these species and ecosystems be maintained or restored to their historic condition.

Issue: Failing to allow professional flexibility in the use of prescribed fire as a management tool can adversely affect both forest values and citizen welfare. Land management agencies and corporate landowners must implement fire-management policies that include both fire suppression and prescribed fire. Exclusion of either will continue to bring unwanted consequences. Use of prescribed fire—as with any tool—has a negative side: prescribed fires occasionally escape and become wildfires, and they produce smoke which can be an annoyance and a health hazard. Professional fire managers and foresters need to build the regular implementation of prescribed fire into their long-range plans and seek adequate funding to carry them out. They also must exercise diligence and responsibility when carrying out fire plans.

Issue: When wildfire occurs in sensitive areas such as a wetland complex, modified fire suppression techniques should be considered. Rather than build fire lines in the wetland soil with heavy machinery, the use of lighter equipment may have less of an environmental impact. Monitoring the advancement of a fire in a wetland area may indicate where

resources are needed should the fire escape to hazardous fuel on higher ground or threaten structures.

Discussion

The goal of modern fire management is to minimize fire's destructive effects while maximizing its long-term ecological and social benefits. This goal can be accomplished only by a combination of a high standard of professional expertise in both wildfire suppression and prescribed fire implementation, increased public awareness of fire's danger and benefits, and adequate dedicated local, state, and federal funding.

Recommendation:

The Michigan SAF promotes and encourages the use of prescribed fire and modified fire suppression strategies as valuable methods for meeting natural resource and ecosystem objectives and for addressing the issues listed above. In addition, the continued use of prescribed fire and modified wildfire strategies will allow for continued growth in knowledge and skill among Michigan's natural resource managers.

References:

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Haight, R. G., D.T. Cleland, R.B. Hammer, V.C. Radeloff, and T.S. Rupp. 2004. Assessing fire risk in the wildland-urban interface. J. Forestry 102(7):41-48.

Snider, G., P.J. Daugherty, and D. Wood. 2006. The irrationality of continued fire suppression: an avoided cost analysis of fire hazard reduction treatments versus no treatment. J. Forestry 104:431-437.

A position adopted by the Executive Committee of the Michigan Society of American Foresters on March 20, 2002, and revised and extended on May 30, 2007. This position was again revised and extended on October 2, 2013 and will expire after five years unless revised, extended, or withdrawn.

The Michigan Society of American Foresters is the scientific and educational association of professional foresters, including consultants, researchers, professors, students, and employees of public agencies and private firms. The Mission of SAF is to advance the science, technology, education and practice of professional forestry to benefit current and future generations.