Clearcutting as a Silvicultural Practice
A Position of the Society of American Foresters

Originally adopted by the SAF Council on December 7, 1997 and revised and renewed on September 23, 2002 and March 8, 2008. The position will expire on March 8, 2013, unless, after subsequent review, it is decided otherwise by Council.

Position

The Society of American Foresters supports the use of well proven silvicultural methods, including clearcutting, to meet diverse forest management objectives, such as efficient utilization of commercial timber and assurance of prompt (or successful) regeneration following timber harvest or natural disturbances. Clearcutting is used to regenerate shade-intolerant tree species, control forest insects and pathogens, improve the productivity of managed forests, and provide early-successional forest age classes for wildlife habitat diversity. Oversight by professional foresters and other natural resource specialists and adherence to today's sustainable forest management standards can ensure that clearcutting is applied in a manner that addresses environmental, economic, and social concerns.

Issue

There is much public confusion about clearcutting and its effects on the environment (Kimmins 1997). The purely visual impact of a clearcut commonly leads to negative perceptions that manifest an array of misconceptions about sustainability, impacts to soil, water and wildlife, and the compatibility of timber management with recreation. While the annual cycle of harvesting and replanting agricultural fields is widely accepted, the appearance of a recently clearcut forest area contributes to perceptions that the forest may never recover. Specifically, these social challenges include the negative visual attributes of clearcuts; perceived conflicts between timber harvesting, clearcuts, and wildlife habitat conservation (Ribe 2006); and clearcuts as the nexus for negative public perceptions of forest landowners and professional foresters as a whole (Bliss 2000).

Landslides, surface erosion, and flooding also are sometimes attributed to clearcutting, often based on outdated perceptions of the effects of clearcutting as it was practiced many decades ago. In recent decades, clearcutting has been significantly reduced on federal forests and several states now regulate clearcutting and other forest practices on state and private forest lands. Using clearcutting as a silvicultural tool should not be confused with general land clearing for the purpose of converting working forests to non-forest uses such as clearing land for commercial development.

Forest owners who use clearcutting today are encouraged or required to employ best management practices (BMPs) to protect water quality and riparian habitats and adhere to sustainable forest management standards that limit the adverse environmental effects of clearcutting. In some states, these BMPs are implemented in an educational, non-regulatory manner, while other states have incorporated BMPs into their forest management regulations. Without the ability to use clearcutting as a silvicultural practice it will be difficult to maintain and improve forest health and desirable tree species composition in many parts of the country and more costly to harvest and regenerate shade-intolerant forests.

Background

Forest management practices are not identical to natural disturbance, but forestry professionals are able to emulate natural disturbances in many ways through use of silvicultural practices, including clearcutting. Clearcutting, which involves removal of nearly all standing trees within a limited area for the specific purpose of regenerating a new forest (Helms 1998), is commonly used to successfully regenerate shade intolerant forest tree species such as Douglas-fir and loblolly pine precisely because it so closely emulates some forms of natural disturbance.

Advances in forest ecology research in recent decades have revealed a continent-wide pattern of natural disturbance and rejuvenation in our forests. Many of the natural forest types we cherish are adapted to periodic cycles of landscape-scale disturbance resulting from wildfires (e.g., Douglas-fir, ponderosa pine, longleaf pine, many oaks) and windstorms (e.g., northern hardwood forests, western hemlock, and Sitka spruce). These disturbances clear large areas of tree cover and, in the case of wildfire, help control disease and insect pests, and expose mineral soil seedbeds. Tree species that do not reproduce or grow well in shade (Burns and Honkala 1990, Nyland 1996) thrive for a time in these open conditions, only to be later replaced by species that prosper in shade. Eventually, the shade intolerant species return in another cycle of disturbance and succession.

Although wildfire is a key part of the ecology of many native shade intolerant forest species, the control of wildfire that is necessary to protect human life, communities, watersheds, and fish and wildlife resources means that these forest types must now be maintained by other measures, involving use of a variety of silvicultural practices.

Although clearcutting is sometimes used to mimic natural disturbance, not all natural disturbances are advantageous. Landslides, erosion, and flooding, which may occur in the aftermath of severe landscape-scale disturbances, are rarely desirable. Forestry research in recent decades has clarified conditions where clearcutting can be used to emulate natural

disturbance. This emulation of natural disturbance also lends itself to the creation of early successional habitat, which replicates critical foraging and cover values for a variety of wildlife (Bolen et al. 1995). As a result, professional foresters are now trained to recognize these situations and to encourage landowners to apply clearcutting where forest type and site conditions indicate that it is the appropriate silvicultural prescription.

In addition to the regeneration of shade intolerant species (Hicks 1998, Alexander 1986, Benzie 1977), the creation of open areas through clearcutting is also desirable when conditions imperil surrounding forest. For instance, the spread of insect and disease outbreaks can often be slowed, and sometimes even contained, through the removal of infected trees (Tainter et al. 1996, Clatterbuck 2006, Sheppard 2006). To be effective, this usually requires the removal of nearly all standing trees within the containment area. The strategic use of clearcutting is likely to become critical not only in controlling native forest insects and diseases, but in limiting the spread of the increasing number of harmful invasive insects that threaten the health of U.S. forests, such as the hemlock wooly adelgid, Asian longhorned beetle, and gypsy moth (Brockerhoff et al. 2006).

Clearcutting is also a useful tool for ensuring safety and protecting public and private property following disturbances such as fire or windstorms. When these disturbances create dangerous conditions through falling trees or increased risk of fire, sometimes the only completely effective mitigation measure is to remove nearly all standing trees prior to regenerating a new forest.

Clearcutting can be the most effective and economical way to harvest and regenerate important native tree species (Hicks 1998, Alexander 1986, Benzie 1977), such as Douglas fir and loblolly pine, enabling full utilization of the commercial timber produced on each harvested area. Regeneration following clearcutting is normally accomplished by planting tree seedlings within one or two years following timber harvest, often using genetically-improved seedlings. Treatments that help ensure tree regeneration success and augment timber growth and yield can be effectively applied in clearcut units. These include treatments such as site preparation and weed control, and young stand management practices, such as pest control and fertilization.

Clearcutting is not appropriate in all forest types, nor will it accomplish the desired forest management objectives for all forest owners. The Society of American Foresters does not endorse widespread use of any specific silvicultural system, but where suitable to forest types, site conditions, and forest owner objectives, and applied carefully by skilled professionals, clearcutting is an effective silvicultural practice that can both achieve a variety of forest management objectives and mimic natural landscape disturbance processes.

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ABOUT THE SOCIETY

The Society of American Foresters, with about 17,000 members, is the national organization that represents all segments of the forestry profession in the United States. It includes public and private practitioners, researchers, administrators, educators, and forestry students. The Society was established in 1900 by Gifford Pinchot and six other pioneer foresters.

The mission of the Society of American Foresters is to advance the science, education, technology, and practice of forestry; to enhance the competency of its members; to establish professional excellence; and to use the knowledge, skills, and conservation ethic of the profession to ensure the continued health and use of forest ecosystems and the present and future availability of forest resources to benefit society.

The Society is the accreditation authority for professional forestry education in the United States. The Society publishes the *Journal of Forestry*; the quarterlies, *Forest Science*, *Southern Journal of Applied Forestry*, *Northern Journal of Applied Forestry*, and *Western Journal of Applied Forestry*; *The Forestry Source*, and the annual Proceedings of the Society of American Foresters national convention.