

# **A Professional View of Forestry Issues in Oregon**



**Position Statements<sup>\*</sup> of the  
Oregon Society of American Foresters**

February 2012

*\* including issues & background discussion*



Dear Oregonian,

This booklet contains position statements adopted by the **Oregon Society of American Foresters (OSAF)**. The OSAF has about 1,000 members and includes field foresters, researchers, administrators and educators who help manage the 29.5 million acres of public and private forests in Oregon. We work for federal, state or local governments; for universities; for small and large landowners; and for small businesses and large corporations. We hold a variety of professional viewpoints, all of which have been reflected upon during the development and approval of the position statements included in this booklet.

Gifford Pinchot and six other pioneer foresters founded the **Society of American Foresters (SAF)** in 1900. The SAF is the national organization representing the forestry profession in the United States and includes public and private practitioners, researchers, administrators, educators and forestry students.

The OSAF is able and willing to assist policy and decision makers in dealing with forest resource issues and challenges. We have prepared these positions to make our views readily available and useful to a broad audience. OSAF encourages you to contact us at **[www.forestry.org](http://www.forestry.org)** or 503-224-8046, whenever an informed and professional perspective on forestry matters would be useful.

***The Mission of the Society of American Foresters is to:***

- advance the science, education, technology, and practice of forestry;
- enhance the competency of its members;
- establish professional excellence; and,
- 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.





# **A Professional View of Forest Issues:**

## **Oregon Society of American Foresters Position Statements**

Below are the “core” positions adopted by Oregon SAF. Further discussion of these issues and supporting background material are included in each of the complete position statements, which follow the core positions.

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**Commercial Timber Harvest on Public Lands in Oregon** The Oregon Society of American Foresters supports commercial timber harvest as an appropriate objective and primary tool for promoting healthy, sustainable forests on public lands in Oregon. Most of these lands are affected by laws that allow or mandate sustainable harvest with resource management planning. Where fish and wildlife habitat, water quality, or recreation is a priority, commercial harvest can be compatible and even promote these values when carefully planned and supervised by professional foresters and other resource specialists. Commercial timber harvest provides important economic and social benefits that help sustain local communities, especially in rural areas. These benefits often extend more broadly than government payments in lieu of shared harvest revenues. Management and use of renewable, recyclable, biodegradable, and energy conserving forest products from public lands are imperative given increasing human needs and environmental sustainability concerns. The expanding scope and cost of addressing Oregon’s forest health, wildfire and safety hazards add further urgency to the need for active management and restoration of public lands, including commercial harvest. (Adopted 2012)

**Active Management to Achieve and Maintain Healthy Forests** The Oregon SAF supports active forest management prescribed by professional foresters to achieve and maintain healthy forests, consistent with land management objectives. To accomplish this, a wide range of proven forest management strategies and tools must be available to forestry professionals. These include carefully planned uses of forest thinning (sometimes removing trees over a wide range of sizes and ages), approved chemicals (e.g., fertilizers and pesticides), prescribed burning, sanitation and salvage of designated dead and dying trees, regeneration harvesting (e.g., clearcutting, shelterwood, selection) and mixed-species planting. Many federal forests in Oregon now have an especially acute and long-term need for active management that will require diverse strategies and tools, including road access and administrative flexibility to effectively expand and maintain such management. Broad benefits, from wildlife to recreation to forest products, can be achieved and sustained through active management on public and private forestlands. (Adopted 2008)

**Thinning on Public Lands in Oregon** The Oregon SAF supports the use of thinning as a management tool on public lands in forests of all ages because it can effectively: reduce tree stress, increase forest health and vigor, reduce hazardous fuels, create unique forest structures that enhance biodiversity and wildlife and fish habitat, and provide useful products and public revenues. Research and management experience do not support the use of inflexible, arbitrarily prescriptive restrictions on thinning, such as fixed age or diameter limits. With a strong foundation of ecosystem science and ongoing observations of tree competition and other changing conditions, professional foresters and other specialists can prescribe thinning strategies that best achieve diverse, long-term objectives. (Adopted 2009)

**Managing Riparian Forests** The Oregon SAF believes that active management of riparian areas on public and private forestlands should be a key part of contemporary strategies and policies to maintain and improve water resources and fish and wildlife habitat. This view is supported by the low levels of riparian forest management now seen throughout Oregon, even where policies allow some active management. Of particular concern is that, lacking management, many of these unique and ever-changing forests now have or will develop conditions that are less than ideal for habitat and water quality, including reduced biodiversity and substantially increased risks of damaging wildfires.

Factors that have limited the management of Oregon’s riparian forests include concerns about potential impacts, policies that typically restrict rather than promote management, and the complexities and costs of management under the existing regulatory constraints. A common perception is that active management of riparian forests will only have negative outcomes for desired resources. However, a growing body of research and management experience shows that carefully prescribed forest practices can have little or no extended impacts while maintaining or improving resource conditions. OSAF believes that both state and federal policies should reflect these important realities and do more to encourage active management of riparian areas on Oregon’s forestlands. (Adopted 2010)

**Managing Mature and Old-Growth Forests** The Oregon SAF recognizes the unique characteristics and values that mature and old-growth forests provide for society. Definitions for old-growth vary and none are exact; however, these forests can include large snags and downed logs, some patchiness/openings, trees of various sizes and ages, and some relatively large, old trees. Not all forest land had or ever will achieve such conditions because of natural disturbance (e.g., wildfire, windstorms). And, as living ecosystems, trees and other vegetation in these forests can change significantly or die, thereby impacting unique habitat and other desirable features and functions.

A common perception is that actively managing old-growth is inappropriate or incompatible with other values, resulting in proposals to designate mature and old-growth forests where management is totally prohibited. **However, even where non-timber values are primary, active management of mature and old-growth forests may be necessary to promote and sustain ecological values over time.** This is especially true of forests in drier, fire-prone landscapes, including central, eastern and portions of southwest Oregon. Such management may include prescribed burning, tree thinning (e.g., to keep bigger trees vigorous with drought and climate change, insects or disease), and planting. Treatments may be needed periodically but there can be decades of little or no activity between periods when management is most effective.

A “one-size-fits-all” approach to mature or old-growth forest management does not address the range of unique and dynamic forest conditions in Oregon both now and in the future. **Research and management experience show that site-specific plans are most effective in achieving and maintaining desirable forest characteristics.** These plans should carefully consider local ecological conditions and objectives, social concerns, and policy constraints of the owners or managers. **OSAF supports appropriate management practices, planned by experienced forestry professionals, to help achieve and maintain desired conditions and values of mature and old-growth forests for current and future generations of Oregonians.** (Adopted 2010)

**Salvage Harvesting** The Oregon SAF supports the well planned, timely, and careful use of salvage harvesting after uncontrollable events have killed or damaged large numbers of trees in a forest. Salvage harvesting can mitigate economic losses due to the event, recover useful wood products, reduce fire and safety hazards and create the desired environmental conditions for successful reforestation. Application of scientific principles by professional foresters and other resource experts can ensure that economically viable salvage harvesting will be conducted with proper consideration of environmental and social concerns. (Adopted 2008)

**Landslides on Forest Lands** The Oregon SAF recognizes that landslides on forest lands represent a complex scientific, land management and public policy issue. Although sometimes harmful to people or property, landslides often reflect natural processes that can have some ecological benefits. Given such complexities, SAF supports:

1. Reducing landslide damage through expanded efforts that follow the “shared responsibility” concept mandated by the Oregon Legislature (Senate Bill 12), including measures that address land use planning, hazard warnings, and forest and other practices;
2. Continued efforts by professionals with appropriate expertise and experience to interpret both current science and on-site factors to identify measures that effectively reduce landslides and their impacts; and
3. Carefully designed monitoring and research to further study landslide occurrence, influences and effects.

The geology, terrain and climate of the Oregon Coast Range and western Cascades create significant natural landslide hazards, and the occurrence of some landslides can be affected by land use practices, including forest management and construction of highways, homes and power lines. However, most landslide hazards exist whether or not such practices occur and the exact location and timing of slides cannot be accurately predicted. Thus, the identification of hazardous areas for people and property, and ways to reduce their proximity to these areas, are important policy considerations. A broad ban on forest management activities on steep slopes would not effectively eliminate existing landslide hazards. (Adopted 2009)

**Using Pesticides on Forest Lands** The Oregon SAF supports the careful use of pesticides that are registered for forest use. When used properly, pesticides are a safe and important tool to protect the health and productivity of forests by controlling competing vegetation, non-native, invasive species and other harmful, unwanted pests. (Adopted 2008)

**Clearcutting** The Oregon SAF supports the careful use of clearcutting as a tool for meeting diverse management objectives, including desired conditions for the regeneration and health of important forest types. Many of the forests seen today in western Oregon were established after clearcutting, which demonstrates its effectiveness in regenerating native species such as Douglas-fir. Current laws include many measures that regulate the use of clearcutting on Oregon’s private and public lands. Professional foresters and other specialists draw from a strong foundation of science and experience to further ensure that clearcutting is applied with prudent consideration of environmental, economic, and social concerns. (Adopted 2008)



# Commercial Timber Harvest on Public Lands in Oregon

A position of the Oregon Society of American Foresters

**The Oregon Society of American Foresters supports commercial timber harvest as an appropriate objective and primary tool for promoting healthy, sustainable forests on public lands in Oregon. Most of these lands are affected by laws that allow or mandate sustainable harvest with resource management planning. Where fish and wildlife habitat, water quality, or recreation is a priority, commercial harvest can be compatible and even promote these values when carefully planned and supervised by professional foresters and other resource specialists. Commercial timber harvest provides important economic and social benefits that help sustain local communities, especially in rural areas. These benefits often extend more broadly than government payments in lieu of shared harvest revenues. Management and use of renewable, recyclable, biodegradable, and energy conserving forest products from public lands are imperative given increasing human needs and environmental sustainability concerns. The expanding scope and cost of addressing Oregon's forest health, wildfire and safety hazards add further urgency to the need for active management and restoration of public lands, including commercial harvest.**

**Issue** Some groups and individuals have called for greater restrictions or a total ban on commercial timber harvest on public lands in Oregon, such as federal, state or municipal forests. Supporting arguments focus on environmental risks and the view that commercial activity on public forests is inappropriate, costly, and simply benefits large corporations. Some opinion polls and policy decisions to limit harvest on public lands are cited as evidence of support for such restrictions. However, most arguments to prohibit commercial harvest on public lands are based on inaccurate and outdated generalizations about environmental impacts and an unwarranted vilification of economic enterprises. Moreover, increasing forest health, wildfire and safety problems in many public forests where harvesting has been greatly reduced suggest that further restrictions in Oregon could simply exacerbate forest resource and socioeconomic concerns in affected areas. Demands for most forest products also continue to increase, and the negative environmental impacts from the use of alternative materials or timber sources outside Oregon can be significant and far-reaching.

## Background

### *Oregon's public forest lands are very extensive and productive*

Oregon has 16.6 million acres of public forest lands, an area about equal to all of western Oregon north of Grants Pass. Most (13.2 million acres) of these public forests are productive and thus they represent about 60 percent of the land in Oregon that can grow commercial timber; included are some of the most productive forests in the world. About 12.3 million acres of these productive forest lands are in federal ownership, and 0.9 million acres are state, county and municipal lands. Nearly one-third (3.8 million acres) of these productive lands are withdrawn specifically from commercial use as wilderness areas, parks and other major reserves. Given the scope and productivity of Oregon's public forests and their diverse uses and values, policies that significantly restrict commercial harvest have both local and global effects.

### *Sustainable commercial harvest is allowed or required*

The 9.4 million acres of unreserved, productive public forest lands in Oregon are established and managed under laws that allow or mandate sustainable commercial harvests. For example, federal forest managers are directed to "furnish a continuous supply of timber for the...citizens of the U.S." (Organic Act of 1897) and provide "a permanent source of raw materials for the support of dependent communities and local industries of the region" (O&C Act of 1937). Such laws also direct a significant portion of the income from such timber harvests to local governments, recognizing that extensive areas of public lands can significantly reduce property tax revenues. Oregon law, for example, requires most state forest lands be managed with about two-thirds of the timber revenues shared with the local counties, schools and taxing districts where the forests are located. In addition, laws requiring prompt reforestation and maintenance of forest land productivity directly promote the sustainability of forest benefits.

### *Evolving policies and practices protect other values*

Timber harvest planning and practices have improved greatly in recent years and continue to respond to both evolving knowledge and public concerns and laws for protecting diverse resource values. Forest road practices also have seen

wide improvements, and advanced harvest systems reduce the need for new roads. On federal lands, the Northwest Forest Plan focuses on conservation of important fish and wildlife habitat. On State Forests (e.g., the Tillamook), in addition to the strict requirements of Oregon's Forest Practices Act, management plans include steps to improve mature forest habitat for key species. Such directives restrict harvest in sensitive areas and add to the costs of operations on public lands in Oregon. However, economical harvest usually is possible when planned well and not subjected to extensive delays from intentionally obstructive legal appeals or unlawful protests.

#### *Commercial harvest is a key management tool*

Oregon's forests are constantly changing. Trees and other vegetation grow and add biomass, shed branches and foliage, and die from crowding or insect or disease infestations. This dynamic nature of our forests makes timber harvest an important management tool for forest products, restoration and other values. On both federal and state lands, teams of professional foresters, biologists, other resource specialists, and engineers carefully plan and supervise harvests to protect or enhance diverse resource values. Important work such as improvements to fish habitat and roads are enhanced by the income, equipment and skilled personnel made available by local commercial harvest operations. Resource professionals recognize that harvest plans must vary widely among diverse management areas and objectives. No single, simple strategy fits all.

#### *Economic benefits are large and broad*

Commercial timber harvests provide significant economic benefits, including helping to pay for management for diverse values. As the nation's leading lumber producer, Oregon's wood products industry brings substantial income to the state and employed about 57,000 workers in 2010, a level second only to the high-tech manufacturing sector. Wood products employment is especially important in rural communities where other high-wage jobs are few, and it also remains significant even in Oregon's urban areas. Basic industries like forest products also generate significant wealth both directly and far beyond the industry itself through a strong "economic multiplier." Government payments to counties in lieu of timber revenue-sharing often do not achieve comparably broad and enduring benefits, and also rely on variable tax revenues and political support. Given their location, productivity and size, public forest lands have a key role in commercial timber production and employment throughout the state, even where other values are emphasized. Commercial timber harvest is widely recognized as an essential component of sustainable forestry and local communities near forests. Harvests from state forest lands, for example, generated an average of \$46.6 million annually for Oregon counties for the 10-year period ending July 2009, plus about \$6 to 8 million annually for Oregon schools over the same period.

#### *Forest products are a vital renewable and sustainable resource*

Overall, the U.S. is now a net importer of both energy and wood. And because domestic demand for most forest products continues to rise, major harvest restrictions on public land in Oregon result in an increase in harvesting in other ownerships, regions and countries, including many that have far less stringent environmental standards or are much less productive (i.e., more acres must be harvested for similar yields). The rising cost of forest products, partly due to local restrictions that add to production costs and reduce market supplies, also increases the use of alternatives such as steel, plastic and concrete. These materials pale in comparison to forest products in terms of fundamental sustainability, i.e., none is produced from an active air pollution cleanser (trees) with very little energy while also being exceptionally renewable, recyclable, and biodegradable. Forest biomass also can provide an alternative energy source to fossil fuels. The substantial environmental impacts that arise indirectly from broad harvest restrictions are rarely considered in opinion polls and politically motivated policy decisions.

#### *Active management is widely needed*

Where major concerns for other values are identified by site-specific assessments and collaborative planning, timber harvest can be locally restricted on public lands. In contrast, broad prohibitions provide no flexibility and do nothing to address such serious concerns as Oregon's rapidly expanding forest health and wildfire hazards. Ironically, such prohibitions would trade manageable risks for the largely uncontrollable and violent forces of nature, with potentially far greater environmental damage to the values that are the focus of "protection." Governor Kitzhaber, his fellow western governors, and the General Accounting Office (a major federal agency that conducts nonpartisan analyses) all have stressed the need for very extensive active management to reduce these widespread forest health and wildfire problems. A growing concern on federal lands as commercial harvest has greatly declined is the shrinking amount of forest openings with younger vegetation, which provide unique habitat ("early seral") for many wildlife species. The large scope of active management and restoration needed makes commercial timber harvest a vital tool and revenue source for management. It also can provide high levels of environmentally friendly products and economic benefits to Oregon communities, as well as the healthy, safe and fire-resistant forests that attract both visitors and businesses.

*This position statement was adopted by the OSAF Executive Committee on February 10, 2012. The statement will expire on February 10, 2017 unless after thorough review it is renewed by the Committee.*





# Active Management to Achieve and Maintain Healthy Forests

A Position of the Oregon Society of American Foresters

**The Oregon Society of American Foresters supports active forest management prescribed by professional foresters to achieve and maintain healthy forests, consistent with land management objectives. To accomplish this, a wide range of proven forest management strategies and tools must be available to forestry professionals. These include carefully planned uses of forest thinning (sometimes removing trees over a wide range of sizes and ages), approved chemicals (e.g., fertilizers and pesticides), prescribed burning, sanitation and salvage of designated dead and dying trees, regeneration harvesting (e.g., clearcutting, shelterwood, selection) and mixed-species planting. Many federal forests in Oregon now have an especially acute and long-term need for active management that will require diverse strategies and tools, including road access and administrative flexibility to effectively expand and maintain such management. Broad benefits, from wildlife to recreation to forest products, can be achieved and sustained through active management on public and private forestlands.**

## Issue

Active forest management is the tending of forest trees, including steps planned by professional foresters and resource specialists to affect their growth, density, health, harvest, regeneration, and access. An important, ongoing challenge for forestry professionals is to achieve and maintain healthy forests. This challenge includes debate about the definition of forest health, which is often based on personal or group values and management objectives. Among professional foresters, one widely accepted definition of “good” forest health is that it is a condition where biotic and abiotic influences on the forest (e.g., pests, weather, silvicultural treatments, road access, and harvesting practices) do not threaten current or future resource-management objectives or options. Natural events like wildfires, wind, diseases, and insects are important factors in forest ecosystems. The original native forests in Oregon were shaped significantly by these events.

A century of fire exclusion and more recent reductions in active management, especially on federal lands, however, have resulted in large areas of forests with overstocked stands and unnatural species mixtures near or beyond the extreme range of natural conditions. The consequences of these changes have been increased pest infestations and large wildfires that are far more severe and damaging than what were common historically. The economic and environmental impacts and the human health and safety risks from these extreme disturbances are significant. The increasing diversity of forest uses and rising forest and property values make such impacts and risks widely unacceptable. With the uncertainties of climate change, potential disturbance patterns may be accentuated and more complex, leading to additional tree stress across large landscapes. Active forest management can reduce greenhouse gas emissions and provide effective substitutes for fossil fuels and building materials that have higher energy requirements (SAF 2008).

Many tools can help professional foresters achieve and maintain healthy forests, but use of these tools may be significantly restricted by current or proposed resource policies because of inaccurate perceptions and concerns of interested groups. These tools include well-proven and scientifically based practices such as the use of prescribed fire, pesticides, thinning, sanitation and salvage harvesting, regeneration harvesting, and access roads (Oregon SAF 2008). Even with improved policies and implementation, the wide success of newer management programs to improve forest health will not be evident for many years, as both the problems and solutions can be decades in the making. A healthy forest is a resilient forest, and carefully planned active management can enhance forest-ecosystem resilience, thereby achieving and maintaining good forest health.

## Background

Years of disease, insect infestations, and development of overcrowded conditions have resulted in large areas of forests that are at high risk from severe wildfires and further insect and disease epidemics. These problems are especially severe on federal lands in central, eastern and southern Oregon, where many forests are overly dense,

prompting the defoliation of many Douglas-fir, spruce, and true fir by pests such as the western spruce budworm and Douglas-fir tussock moth. Although defoliation alone may not kill trees, these and other subsequent pests (e.g., fir engravers, Douglas-fir bark beetles) have put millions of acres of forest under stress and at high risk of catastrophic fires. In much of Oregon, overstocking also has resulted in significant mortality by bark beetles. Douglas-fir forests near the Oregon Coast have experienced an unprecedented outbreak of Swiss needle cast, resulting in growth losses of up to 50%. With large increases in national and global travel and trade that provide efficient pest vectors, invasive and exotic pest species are adding substantially to forest-health hazards and problems.

Recent wildfires in the West have been unusually intense and damaging to important resource values including wildlife and fish, some of which are listed as threatened or endangered species. In the last decade, the nation experienced three of the worst fire seasons on record including the largest fire in Oregon since the Civil War, the Biscuit Fire. With the persistence of very limited active forest management in many areas, fuel loads have increased and are expected to grow further, greatly increasing the risk of catastrophic wildfire. Concerns are raised further by uncertainties about the potential effects of climate change that may exacerbate problems.

In the past, foresters often prescribed thinning, clearcutting, or salvage of unhealthy or dead trees to control the spread of pests, reduce wildfire risk, harvest wood, and regenerate new forests. More recently, conflicting policies and controversies over management tools, road construction, commercial harvesting, and cutting of larger trees on public lands have greatly restricted the ability of agencies to manage unhealthy forests. In addition to increasing the risk of further damage to affected forests, such restrictions have increased the risk of catastrophic losses in adjacent healthy forests, both public and private. Altered funding formulas and reduced budgets and professional staffing also have limited the ability of federal agencies to plan and implement thinning and other treatments, despite the growing need for such work to address forest-health concerns. Newer policies and funding limitations have created additional barriers to active management by reducing access through road closures or inflexible blanket restrictions.

Oregon's forests are resilient and dynamic, and disturbances play an important role in maintaining their health and unique attributes. However, passive management that relies primarily on natural disturbance in areas that today differ greatly from the original forests formed by historic natural events poses serious risks to the wide range of benefits expected by Oregonians, from wildlife to forest products. These benefits can be best achieved and sustained through active management including areas at risk due to unnatural or extreme conditions. Both active and passive management can have some short-term adverse impacts and cannot eliminate all forest health or wildfire hazards. A substantial and growing body of research and professional experience, however, shows that active management can produce much more reliable and positive results than a passive-management approach.

Professional foresters, in collaboration with other natural resource specialists, need the flexibility to prescribe and use a broad range of proven, science-based methods for preventing and treating forest-health problems. When tailored to each unique, local situation, such flexibility allows highly effective, economical and environmentally sound practices to be implemented. Active management can help ensure that Oregon's healthy forests will be maintained and those that are currently unhealthy will be substantially improved.

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*This position statement was adopted by the OSAF Executive Committee on October 17, 2008. The statement will expire on October 17, 2013 unless after thorough review it is renewed by the Committee.*



# Thinning on Public Lands in Oregon

A Position of the Oregon Society of American Foresters

**The Oregon SAF supports the use of thinning as a management tool on public lands in forests of all ages because it can effectively: reduce tree stress, increase forest health and vigor, reduce hazardous fuels, create unique forest structures that enhance biodiversity and wildlife and fish habitat, and provide useful products and public revenues. Research and management experience do not support the use of inflexible, arbitrarily prescriptive restrictions on thinning, such as fixed age or diameter limits. With a strong foundation of ecosystem science and ongoing observations of tree competition and other changing conditions, professional foresters and other specialists can prescribe thinning strategies that best achieve diverse, long-term objectives.**

## Issue

Thinning is a primary forest management tool used to achieve a variety of landowner objectives including wood-fiber production, wildfire risk reduction, and wildlife habitat enhancement. Thinning can be used to alter stand structure and accelerate stand development to achieve planned ecosystem objectives. However, concerns about timber harvest on public lands have led to attempts to restrict thinning by using arbitrary tree ages or diameter limits, despite a lack of supporting forest ecosystem science. Thinning prescriptions that reflect the dynamic nature of current and future desired forest structure and functions have a strong basis in research and experience, whereas management constrained by inflexible age or diameter limits can be expected to provide less effective results, especially over long time periods.

## Background

Stands of trees continue to grow throughout the life of a forest, with ongoing competition for available resources. Prudent management of forest stands requires monitoring and some control of tree crowding (density) to promote good tree growth and health throughout the life of the stand (OSAF 2009). "Thinning is a cultural treatment made to reduce stand density of trees primarily to improve growth, enhance forest health, or recover potential mortality" (Helms 1998). More specifically, thinning can be used to:

- reduce tree stress due to crowding over the life of the forest. Stand density guidelines have been developed to help forest managers prescribe thinning treatments (e.g., Emmingham et al. 2005);
- remove sick, injured or poor quality trees, thus concentrating the available light, moisture, and nutrients towards the trees that are left;
- benefit wildlife species that require larger trees or more diverse forest structure; increase species richness of plants and animals, thus enhancing biodiversity (e.g., Bailey & Tappeiner 2002);
- provide periodic income to the public treasury, counties and agencies that manage forest resources; thinning can help agencies such as the BLM and the Oregon Dept. of Forestry meet their obligations (e.g., the O&C Act) to provide economic benefits to local counties and school funds (OSAF 2007);
- help protect against some damaging insects (e.g., bark beetles and defoliators) and diseases (e.g., Armillaria root rot and dwarf mistletoe);
- reduce ladder and crown fuels and the potential for severe, stand replacement wildfires;
- accelerate stand development towards mature or old-growth conditions; maintain or improve the health of old-growth trees (Bailey & Tappeiner 1998, Latham & Tappeiner 2002, OSAF 2005);
- maintain or enhance watershed and riparian functions and values; and
- increase the resistance of forest stands to damage from wind, ice and snow.

Thinning differs from other partial cutting practices, such as shelterwood, seed-tree, sanitation-salvage harvesting (Barrett 1995). Typically, thinning removes fewer trees, and is not done with the intent of regenerating the forest. There are several ways to thin forests depending on goals and stand conditions; detailed descriptions of these methods are in *The Dictionary of Forestry* (Helms 1998). Thinning may not be suitable for all sites or in all stand conditions, but it is most effective in achieving desired results when professionals are able to carefully consider and prescribe treatments at all stages of forest development.

Thinning treatments can be precommercial or commercial. Precommercial thinning (PCT) removes trees before they reach commercial size, to reduce stand density and concentrate growth on more desirable trees. Commercial thinning is any type that produces merchantable material at least equal in value to the direct costs of harvesting (Helms 1998). The materials removed in PCT and commercial thinning may be used for a wide variety of products, such as lumber, pulp chips (for making paper), biomass for municipal and commercial electrical plants and to produce bioethanol and other renewable fuels and chemicals.

Policy makers and some advocacy groups have attempted to restrict thinning with arbitrary limits on tree ages or diameters above which no trees can be cut. Current management directives on federal lands in central and eastern Oregon, for example, limit thinning to trees that are 21-inches or less in diameter. Some groups continue to lobby for lower diameter limits (e.g., 14 or 16 inches) due to concerns about commercial versus environmental objectives and their lack of trust in federal agencies. Where diameter limits are used, some trees smaller than the diameter limit usually are left. Experience shows that many of these uncut trees will grow above the diameter limit and, once that occurs, tree stocking no longer can be effectively controlled using that limit. The result is that all trees, both smaller and larger, experience increasing competition for moisture and other limited site resources, thus placing the entire stand at risk.

Tree or stand ages also have been proposed as a way to restrict thinning, but both age and diameter limits are inconsistent with forest ecosystem science. Prescriptions based on the desired stand structure have a much stronger science basis than those constrained by artificial limits that do not account for stand growth dynamics over time. Some proposed policies also assume that forests can be thinned indefinitely. However, at some point in the future, forests may require other harvest methods to ensure successful replacement of native species. Forests of Douglas-fir, for example, will not regenerate themselves unless management practices or natural disturbances create substantial openings that provide the full sunlight needed for seedlings to survive and grow (OSAF 2008).

In summary, thinning is a vital tool for managing young to mature forest stands for a broad array of benefits, both environmental and socioeconomic. Forest ecosystem science, as well as decades of management experience, has shown that thinning is most effective when prescribed in a site-specific manner, with due consideration of the complex, dynamic nature of forest growth and development over extended periods. For a given forest type and location, this means that thinning prescriptions must change significantly as the forest itself changes over time, and that it is most productive to focus on the trees and other conditions that remain and develop after thinning, rather than what is removed.

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# Managing Riparian Forests

## A Position of the Oregon Society of American Foresters

**The Oregon Society of American Foresters (OSAF) believes that active management of riparian areas on public and private forestlands should be a key part of contemporary strategies and policies to maintain and improve water resources and fish and wildlife habitat. This view is supported by the low levels of riparian forest management now seen throughout Oregon, even where policies allow some active management. Of particular concern is that, lacking management, many of these unique and ever-changing forests now have or will develop conditions that are less than ideal for habitat and water quality, including reduced biodiversity and substantially increased risks of damaging wildfires.**

**Factors that have limited the management of Oregon's riparian forests include concerns about potential impacts, policies that typically restrict rather than promote management, and the complexities and costs of management under the existing regulatory constraints. A common perception is that active management of riparian forests will only have negative outcomes for desired resources. However, a growing body of research and management experience shows that carefully prescribed forest practices can have little or no extended impacts while maintaining or improving resource conditions. OSAF believes that both state and federal policies should reflect these important realities and do more to encourage active management of riparian areas on Oregon's forestlands.**

### Issue

Since the 1990s, population levels of many wild anadromous (ocean migrating) fish species in the Pacific Northwest have raised widespread concerns about the effects of human activities on these populations. Riparian forests along streams in the region are known to provide important ecological functions that benefit the habitat of many fish species. Because timber harvesting and other forest practices in riparian areas can alter some of these functions, these practices have been widely viewed as undesirable and that regulations restricting riparian forest management are believed to be most effective for protecting fish habitat. In addition, it has been widely assumed that such management restrictions are similarly beneficial to wildlife habitat and drinking water supplies. However, forestry professionals in the region now recognize that, without active management, over time the changing conditions in many of our riparian forests may not effectively provide or protect the diverse resource benefits that society needs and wants.

### Background

Awareness and concerns about potential effects of forest management on water resources are widely recognized in the Pacific Northwest, with wild salmon and other anadromous fish habitat a particular focus. As one part of a complex array of environmental influences, forest practices have received considerable attention because many fish spawn and rear in forest streams, and the unique and important influences of riparian forests on aquatic habitats are now better understood. For example, trees that fall into streams can help create deep pools that provide key rearing habitat, and riparian vegetation supplies leaves and other material that help sustain the insects that fish feed upon.

Forest practices clearly have the potential to alter water quality and aquatic habitat. Earlier studies showed that unrestricted and less refined logging and road construction could cause erosion, stream sedimentation, and warmer water temperatures. Habitat also was reduced when natural accumulations of fallen trees were removed from many streams in the mistaken belief that they were harmful to fish. Such findings led to the 1972 adoption of regulations under the Oregon Forest Practices Act, and to major rule revisions in 1994 that markedly increased protection of riparian areas on private forestlands. On state and federal lands, updated forest plans mandated even greater restrictions for riparian areas. Regardless of ownership, stream protection requirements on forestlands continue to greatly exceed those for other land uses in Oregon.

Because these restrictions in Oregon's riparian forests provided some immediate benefits and were generally believed to permanently protect water resources and habitat, a common assumption has been that such limits should continue or be increased further. However, the need to further restrict riparian forest management is not clearly supported by more recent research findings. For example, studies on private forestlands, which have fewer restrictions than public forests, show that substantial timber harvesting near streams can occur without significant impacts to water quality or local fish populations. Research also shows that carefully designed forest openings along streams can mimic natural disturbances and promote aquatic productivity while maintaining water quality, resulting in larger fish from enhanced food supplies.

With well over a decade of major restrictions in riparian forests in Oregon, a pattern of "benign neglect" has emerged. For various reasons, forest owners and managers have often avoided riparian areas, even where policies have included some allowances for management. The result has been significant areas where undesirable conditions have developed, including overly dense forests with serious wildfire and forest health hazards, as well as invasive and other competitive species that suppress more desirable plants and trees. These conditions have raised concerns about reduced habitat diversity and other features favorable for many fish and wildlife species. The policy emphasis for private lands that rigidly favors riparian conifers to improve in-stream fish habitat also may contribute to some questionable outcomes for both fish and wildlife.

Policies that greatly restrict management and rely primarily on natural processes can improve riparian and stream conditions, but the results are highly variable and benefits can take decades or even centuries to be realized. Wildfire cannot be widely relied upon for resource benefits, particularly if climate change adds to unusually severe fires and watershed impacts. Active management can accelerate riparian forest benefits through carefully applied professional forestry, fisheries, and hydrology expertise. In dry forest types threatened by fire and forest health hazards, the benefits of riparian thinning and other active management can far outweigh the risks of inaction. Further research and adaptive management can help target and refine practices and policies that are most cost-effective in improving desirable riparian forest conditions.

Clearly, there remains a need for policies that mandate extra care and some restrictions of forest practices in riparian areas. However, recent and ongoing changes in these unique and dynamic forests challenge the common notion that little or no management will provide the best long-term protection and enhancement of desirable watershed conditions. There is now an important need to pointedly recognize and encourage active management of many of Oregon's riparian forests, with updated policies and administrative emphasis that promote research, education and incentives for improved riparian management on public and private lands.

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# Managing Mature and Old-Growth Forests

A Position of the Oregon Society of American Foresters

***The Oregon Society of American Foresters recognizes the unique characteristics and values that mature and old-growth forests provide for society.*** Definitions for old-growth vary and none are exact; however, these forests can include large snags and downed logs, some patchiness/openings, trees of various sizes and ages, and some relatively large, old trees. Not all forest land had or ever will achieve such conditions because of natural disturbance (e.g., wildfire, windstorms). And, as living ecosystems, trees and other vegetation in these forests can change significantly or die, thereby impacting unique habitat and other desirable features and functions.

A common perception is that actively managing old-growth is inappropriate or incompatible with other values, resulting in proposals to designate mature and old-growth forests where management is totally prohibited. ***However, even where non-timber values are primary, active management of mature and old-growth forests may be necessary to promote and sustain ecological values over time.*** This is especially true of forests in drier, fire-prone landscapes, including central, eastern and portions of southwest Oregon. Such management may include prescribed burning, tree thinning (e.g., to keep bigger trees vigorous with drought and climate change, insects or disease), and planting. Treatments may be needed periodically but there can be decades of little or no activity between periods when management is most effective.

A “one-size-fits-all” approach to mature or old-growth forest management does not address the range of unique and dynamic forest conditions in Oregon both now and in the future. ***Research and management experience show that site-specific plans are most effective in achieving and maintaining desirable forest characteristics.*** These plans should carefully consider local ecological conditions and objectives, social concerns, and policy constraints of the owners or managers. ***OSAF supports appropriate management practices, planned by experienced forestry professionals, to help achieve and maintain desired conditions and values of mature and old-growth forests for current and future generations of Oregonians.***

## Issues

Concerns about mature and old-growth forests raise many issues and challenges, which highlight important differences in perceptions, values and philosophies. These issues take on added complexity with the range of questions that must be addressed to effectively identify and deal with specific mature and old-growth forests, including: 1) the definition of an old-growth forest; 2) the uses and values of these forests; and 3) the detailed objectives and allowances for their management. Disagreements about these forests have stemmed from widely varying perceptions and preferences, including: 1) the idea that nearly all pre-European settlement forests in Oregon were old-growth; 2) the idea that these forests and their benefits will persist indefinitely if left unmanaged; and 3) contrasting views about the approach or philosophy for managing mature and old-growth forests, e.g., from “preservation” to active management.

Current examples of old-growth management issues include policy directives or advocacy for specific tree diameter (e.g., 21 inches) and age limits (e.g., 120 years), at or above which no trees can be removed. Such approaches greatly oversimplify the features of old-growth forests, do not address their dynamics as living ecosystems (i.e., with components that grow, compete for resources and eventually die), and increasingly restrict management that could help maintain the health and benefits of these forests over the long term.

## Background

The definition of an old-growth forest is not exact (Helms 2004) and it can vary with forest type (dominant species). Old-growth forests often have trees of various sizes and some of very large size, some patchiness, and large snags and downed wood. However, no one single attribute, be it appearance, tree age, tree size, canopy structure (foliage layers), or species composition, can consistently define old-growth. The area or size of an old-growth forest is also important because small areas may not be effective habitat for some old-growth-dependent wildlife species, whereas they may provide aesthetic and educational benefits as well as desirable ecological diversity.

The term “late-successional”<sup>1</sup> sometimes is used as an ecological descriptor of old-growth forests. Ecological definitions have value in that they are based on forest processes (e.g., succession and disturbance) and resulting forest structure. However, old-growth often is seen as a qualitative forest condition that can invoke awe, inspiration or even veneration. This is reflected in common descriptors of these forests, such as cathedral, heritage, or ancient. Such labels can suggest some images of old-growth forests that may not be very accurate. Lodgepole pine and aspen, for example, are not long-lived species and thus their forests may contain “old-growth” attributes that are far different from old-growth species with longer life spans (Spies 2004). A forest type and site-specific understanding of a particular forest and its associated values is more useful than an inexact label.

As a dynamic ecosystem with many natural influences, old-growth forests are constantly changing and some have a finite “lifespan,” even in the absence of human influences. In northwest Oregon, the amount of old-growth prior to European settlement has been estimated to vary from about 30 to 70 percent over time and with shifts in location (Teensma et al. 1991, Wimberly et al. 2000, Wells and Anzinger 2001, USDA Forest Service 2003). Today, approximately 6.5 million acres of mature and old-growth forests exist in western Oregon and Washington (USDA Forest Service 2003). All forests, including old-growth, will eventually succumb to natural disturbances (e.g., wildfires, windstorms, insect infestations) and then regenerate over time. Although old-growth forests can be protected from some disturbances, indefinite protection from natural influences is impossible and thus maintenance of the key values of old-growth requires planning for the next cycle and location of old-growth forests.

Historically, large trees in old-growth forests had great commercial value and their harvest supported the development of many Oregon communities. Although still valuable and prized for certain uses, large trees from old-growth forests currently are used less for timber as changes in log availability prompted most mills to retool to manufacture products from younger and smaller trees. Old-growth forests now are recognized for much broader values, including unique wildlife habitat and complexity in forest landscapes, recreation, genetic reservoirs and a reflection of natural heritage. Importantly, the diverse values of older forests, including economic benefits, are not necessarily incompatible with each other. Many of Oregon’s state forest lands, for example, are being actively managed to create habitat features of older forests for fish and wildlife diversity, while also generating mandated economic benefits to local communities. This approach has not satisfied all interests and significant pressure on both sides persists, including support for legislation, rule changes and ballot proposals for greater or lesser restrictions on harvest of older forests on state and private lands. However, a mix of forests ownerships managed for a range of forest conditions (young to old) together produce a forest landscape with high overall ecological complexity and socioeconomic value.

Forests with older trees can be found in different ownerships, each managed with unique objectives and legal requirements including specific mandates for old-growth management on federal lands. Older forests may not contain every feature of a fully developed old-growth forest, but many of them contain key elements such as large live and dead trees. Private landowners have significant leeway in setting their own management objectives and related actions, although Oregon law requires some snags and downed logs to be left in harvest areas. In general, as long as applicable regulations concerning fish and wildlife

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<sup>1</sup> Succession is the natural, gradual supplanting of one plant community type over another, with a “late-successional” community often considered as part of a final, long-term stage before a catastrophic event (e.g., wildfire) repeats the process, initiating “secondary” succession.



habitat protection are met, private landowners in Oregon may harvest trees in older forests on their property, some of which may meet an ecological definition of old growth.

Management strategies to promote or maintain old-growth forests depend on the specific ecological goals and the environment in which the forest occurs. Mature and old-growth forests often can benefit from active management (e.g., prescribed burning, thinning, patch harvest) to emulate natural processes (e.g., wildfire, windstorms), including those altered by human needs or activities. This is particularly true in dry, fire-prone forest types in eastern, central and southwestern Oregon, forests historically dependent on Native American burning (e.g., oak in western interior valley foothills), as well as in forest plantations with limited ecological diversity. There even can be instances where substantial tree harvesting may be appropriate, particularly if some down wood and large live and dead trees are left on site. With a blend of ecological, social and economic objectives, active management strategies such as long rotations with legacy wood retention can promote key old-growth features while also providing forest products.

Importantly, thinning smaller or younger trees in old-growth stands has been shown to improve tree health and vigor (Stone et al. 1999, Latham and Tappeiner 2002, McDowell et al. 2003), thereby improving resistance to insect attacks and reducing the risk of stand-replacing wildfire. This can extend the life of existing old-growth trees and forests while other younger forests develop into an old-growth condition. Thinning in mature forests may hasten old-growth structural development (Bailey and Tappeiner 1997; Acker et al. 1998) and large trees and old-growth character have been achieved over time after heavy thinning in younger forests (Newton and Cole 1987). Where severe wildfire has consumed old-growth forests, active restoration can help ensure the timely progression towards old-growth conditions. Without reforestation and vegetation management, restoration of conifer forests in some areas may take centuries, particularly in areas of severe wildfire and plant competition.

## Conclusions

Oregon's forest owners and managers have different goals that lead to a range of management approaches that promote diverse old and young forests with high ecological and social values. The overall pattern and distribution of forests is an important consideration in sustaining a broad range of values from our forests, and in providing for old-growth features and functions as forests change over time and space.

Misunderstandings and disagreements about the management of old-growth forests can be reduced by addressing key objectives and related considerations, including careful attention to local conditions and concerns. Like the management of other forests, decisions about old-growth forests will benefit from current knowledge and experience-based, site-specific management plans prepared by professional foresters and other specialists; that is, plans that carefully account for unique site conditions, detailed objectives, and important legal mandates and social concerns.

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# Salvage Harvesting

A position of the Oregon Society of American Foresters

***The Oregon Society of American Foresters supports the well planned, timely, and careful use of salvage harvesting after uncontrollable events have killed or damaged large numbers of trees in a forest. Salvage harvesting can mitigate economic losses due to the event, recover useful wood products, reduce fire and safety hazards and create the desired environmental conditions for successful reforestation. Application of scientific principles by professional foresters and other resource experts can ensure that economically viable salvage harvesting will be conducted with proper consideration of environmental and social concerns.***

## Issue

Salvage harvesting has generated considerable controversy, particularly when proposed on public lands. Some people view salvage harvests as a way to use resources that would otherwise be wasted and to generate some economic benefits in impacted communities. Others view salvage harvests as causing additional harm to the environment and some also view salvage and other commercial harvesting on federal forest lands as inappropriate. The discussion has extended to the scientific community, and some debates and research studies have received considerable attention by the news media. Contrasting views about salvage have contributed to major disagreements over such harvesting on public land, including legal actions to prevent or to expedite its use. Actions that delay salvage harvesting are an important issue because damaged trees quickly deteriorate and lose value, which can limit project viability and harvest system options as potential timber revenues decline. Those who invariably oppose salvage thus have an incentive for promoting delays, regardless of the merits of their arguments. However, such delays can not only affect timber values but also impact fuels treatments, insect and disease control, reforestation, and other activities that are often planned in conjunction with salvage operations.

## Background

Salvage harvesting removes timber from an area that has been altered by an uncontrollable event, such as a wildfire, windstorm or insect outbreak that results in large concentrations of dead and damaged trees. Salvage harvesting is a reactive treatment with the principal purpose of recovering economic value of the trees that have been damaged. Roadside salvage also is vital for both the safety and access of those who live, work or recreate on forest lands. In addition, salvage is a key tool for limiting the spread of insect or disease infestations and for reducing hazardous fuel accumulations. The timeliness of salvage harvesting is imperative because dead and damaged trees can decay quickly and lose substantial economic value, and the control of insect, disease, wildfire and safety hazards can be much more effective.

Since the late 1980's, major wildfires and forest health problems in the West generated numerous salvage harvesting plans on federal lands, many of which were appealed by interest groups opposed to the practice. In 1995 Congress passed the "Salvage Rider" (PL 104-19) to restrict such administrative appeals, an action that sparked further controversy and arguments between opponents and proponents of salvage harvesting. Although the Salvage Rider expired in 1996, the difference of opinions concerning salvage harvesting continues because of contrasts in philosophy as well as in the interpretation of science related to the issue. Some scientists believe that human intervention following wildfires should be a low priority and that "natural" recovery of the forest is most appropriate (e.g., DellaSala and others 2006).

Although often presented in the language of science, this is largely a philosophically based argument that discounts economic and social concerns. Many other scientists and forestry professionals support active management in appropriate areas after wildfire and other major disturbances, a view that is consistent with a recent survey of Oregonians. These scientists and professionals also recognize the vital role that economic and social benefits can play in community and resource sustainability, which can include the timely development of desirable forest conditions through the careful use of research findings as well as local experience.

Salvage harvesting triggers legal requirements for reforestation, whereas forest restoration following wildfires or other catastrophic events typically is not required by law if no harvest occurs. Although some emergency public funds may be available to mitigate some of the adverse impacts of catastrophic events, the income, labor and equipment associated with salvage harvesting can help support restoration practices. Examples include erosion control, invasive weed control, and active reforestation. This is particularly important on federal lands where a portion of receipts from any harvest is dedicated to forest restoration.

Research on salvage harvesting is somewhat limited and at times the findings of individual studies can appear contradictory. However, forestry professionals can interpret and integrate these findings with their practical experience to develop plans that effectively address environmental, economic, and social concerns, including the impacts of not salvaging. Such plans also typically include some sensitive locations, such as unstable slopes and riparian areas, where little or no salvage is prescribed.

Although the random nature of catastrophic events precludes the preparation of detailed, site-specific plans beforehand, the value of preparing preliminary salvage plans should be recognized and integrated with routine forest planning activities. Finally, an efficient public review and appeal process allows both adequate opportunities for constructive public input as well as timely implementation of approved plans.

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# Landslides on Forest Lands

A Position of the Oregon Society of American Foresters

The Oregon Society of American Foresters (OSAF) recognizes that landslides on forest lands represent a complex scientific, land management and public policy issue. Although sometimes harmful to people or property, landslides often reflect natural processes that can have some ecological benefits. Given such complexities, OSAF supports: 1) reducing landslide damage through expanded efforts that follow the “shared responsibility” concept mandated by the Oregon Legislature (Senate Bill 12), including measures that address land use planning, hazard warnings, and forest and other practices; 2) continued efforts by professionals with appropriate expertise and experience to interpret both current science and on-site factors to identify measures that effectively reduce landslides and their impacts; 3) carefully designed monitoring and research to further study landslide occurrence, influences and effects.

The geology, terrain and climate of the Oregon Coast Range and western Cascades create significant natural landslide hazards, and the occurrence of some landslides can be affected by land use practices, including forest management and construction of highways, homes and power lines. However, most landslide hazards exist whether or not such practices occur and the exact location and timing of slides cannot be accurately predicted. Thus, the identification of hazardous areas for people and property, and ways to reduce their proximity to these areas, are important policy considerations. A broad ban on forest management activities on steep slopes would not effectively eliminate existing landslide hazards.

## Issue

Public awareness and concern about landslides on forest lands in Oregon increases noticeably when major storms (e.g., in 1996, 2007) trigger slides that impact people, structures or natural resources. It is not unusual to hear claims that forest practices caused these landslides, with calls for increased restrictions on such practices. Policy and decision makers will continue to be challenged to address public concerns when the complexity of the problem offers very few simple, fail-safe and economical solutions.

## Background

Oregon weather normally is moderate, and its extremes provide the most vivid memories. In early 1996, an above average snowpack, torrential rains and very wet soils led to the worst flooding in over 30 years in western Oregon. Another record setting storm occurred in November 1996. Some streams experienced flood levels that occur only once or twice per century. These storms triggered landslides that caused heavy damage to roads and other structures built within the paths of the landslides. Tragically, 5 people were killed by landslides during the November storm.

A public debate followed, including some who blamed steep-slope clearcutting and road construction. In response to public concerns, several agencies evaluated the storm damage and the Oregon legislature passed two bills (Senate Bills 1211 and 12) that directed changes in forest practice and other regulations. After further studies by the Oregon Department of Forestry and a technical advisory team, the Board of Forestry approved additional rules to reduce landslide problems related to forest roads and timber harvesting. Other major storms that triggered some significant landslides in Oregon and Washington in 2005 and 2007 led to renewed interest in the issue of slope stability on forest lands. Such interest can be expected whenever infrequent large storms (e.g., “10-year” or greater events) trigger some significant landslide activity.

## Findings and Conclusions

Studies have shown that land management activities, such as timber harvest and road construction, can influence the occurrence and size of landslides in some locations. However, these studies often have used

aerial surveys that have seriously underestimated landslides in unlogged forested areas where canopy cover obscures landslides. More reliable ground surveys have shown that landslide occurrence in areas harvested within the previous 10 years was about 1.5 to 2 times higher than in forested areas. Expectations are less clear beyond this initial post-harvest period, because prompt reforestation is required by Oregon law, and some surveys of young forests (10 to 100 years) have shown fewer landslides than in older (>100 years) forests.

Forest roads generally have been more important than timber harvest as a management influence related to destructive landslides. However, during the past two decades, key changes in road design, location and maintenance have been made to reduce such landslides. In addition, advanced timber harvest systems can reduce the need for logging roads. Both research and considerable field experience indicate that such improvements have significantly reduced landslide impacts. Continued emphasis on forest roads is needed, especially older roads that may need to be upgraded to current standards or decommissioned.

Landslides are a natural process that can have some positive ecological benefits, such as renewal of supplies of large woody debris and gravels that are necessary for healthy aquatic systems. In particular, the Oregon Coast Range and western Cascades have areas where geology, steep terrain, and high rainfall naturally combine to favor landslide processes. Even within these areas, however, landslide characteristics vary greatly among specific locations, and thus only a small portion of the landscape carries a significant risk of slide occurrence at any point in time.

When damaging landslides occur on forest lands it is not unusual to hear appeals for a broad ban on timber harvest and road construction on steep slopes. However, such a ban would be very costly to many forest landowners and impact their contributions to state and local economies. Moreover, such a ban would reduce some landslides in the near term but not eliminate them over longer periods.

While much is known about landslides, it remains very challenging to accurately predict where and when landslides will occur. Additional knowledge from carefully designed monitoring and research programs will improve our ability to predict landslides and their impacts and to apply this knowledge effectively to policy and land management decisions. However, homes and other structures still exist in hazardous locations and some continue to be built or sold without recognizing or disclosing such hazards. Such situations can trigger restrictions on forest management upslope, but this step alone does not necessarily improve public safety.

Landslides will continue to occur in Oregon. It remains vital to increase and apply our expanding knowledge and experience to reduce human influences on landslide occurrence and their negative impacts. This includes educating policy makers and the public about the wide nature and complexity of landslide and land use issues, and well-informed decisions that reflect the full scope of "shared responsibility" (Senate Bill 12) needed to effectively reduce landslide risks.

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# Using Pesticides on Forest Land

A Position of the Oregon Society of American Foresters

**The Oregon Society of American Foresters supports the careful use of pesticides that are registered for forest use. When used properly, pesticides are a safe and important tool to protect the health and productivity of forests by controlling competing vegetation, non-native, invasive species and other harmful, unwanted pests.**

## Issue

Pesticides are herbicides, insecticides, fungicides and rodenticides. They can be synthetic chemicals or natural compounds. Pesticides are used in forests to control plants, insects, diseases and rodents in order to enhance and protect the health and productivity of forests. Pesticide use as a forest management tool is controversial. Some believe that pesticides should be further regulated or even prohibited, largely out of human and animal health concerns. However, science and professional forestry experience has demonstrated that careful use of pesticides registered for forest use by the Environmental Protection Agency (EPA) is a safe, effective and targeted method of controlling pests, diseases and unwanted vegetation in forests.

## Background

Competing vegetation, epidemic levels of insects and diseases, and rodents are significant impediments to tree vigor and forest productivity. Competing vegetation and animal pests can impair the establishment and growth of newly planted seedlings. This can result in unsuccessful reforestation that is in non-compliance with Oregon Forest Practices Act (FPA) rules. Insects at epidemic levels threaten forest health by weakening or killing trees, or by being carriers of diseases that attack trees. Diseases can also slow tree growth or kill trees. The control of non-native, invasive plants, insects and diseases is an especially important and growing issue in Oregon's forests. The use of pesticides is often essential to control the spread of these non-native invasives, as other control methods are less effective or as long lasting. Controlling forest pests and unwanted vegetation helps to achieve a broad range of additional benefits, such as enhancement of wildlife habitat and livestock forage. Pesticides can be a safe and effective tool to address all of these situations.

To ensure safe use, the federal government regulates pesticide use under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). FIFRA regulations require that all pesticides be registered by the EPA before sale and use. In 1988, regulations were approved that require the EPA to register the active ingredients in all pesticides originally registered before November 1, 1984. In Oregon, licensing and continuing education of applicators are required and administered by the Oregon Department of Agriculture.

The Oregon Forest Practices Act further regulates the use of pesticides in forests in OAR Chapter 629, Division 620, through a number of different rules. One example of FPA pesticide regulations under Chapter 629, Division 620 is a requirement to protect water sources, to prevent contamination of waters of the state. The Oregon Department of Forestry enforces FPA rules and monitors pesticide applications, helping to assure their safe and proper use in Oregon's forests.

The class of pesticide known as herbicides constitutes the vast majority of pesticides used in Oregon's forests. The amount of herbicides used on Oregon forestlands is very small compared to urban and residential, agricultural, and right-of-way use. Typically, only one to three herbicide applications will be made during a forest rotation of fifty or more years. Newer, safer and more effective pesticides and application methods are continually being developed. Pesticides in use today are more selective, targeting the undesirable species better than pesticides used in the past.

With an Integrated Pest Management strategy, the most effective group of treatments is used to achieve the desired long-term results of successful pest control. Pesticides comprise one of many tools available for pest control in forests. Prescribed fire and mechanical, silvicultural, and biological methods, alone or in combination, are also effective pest management tools. Pesticides are an important, effective, and safe management tool for ensuring healthy and productive forests when used consistent with pesticide label directions, and with federal and Oregon FPA requirements. Professional foresters make a significant contribution to controlling pests by developing appropriate pesticide prescriptions.

In summary, the combination of federal and state oversight, professional training of applicators, FPA monitoring and enforcement, continual improvement in chemical development, and adherence to label directions provides multiple safeguards to assure the safe, proper and legal use of pesticides in Oregon's forests.

### **Selected Reference**

Oregon Dept. of Forestry. January 2011 (or most current information). Pesticide Use in Oregon's Forests (web site: <http://www.oregon.gov/ODF/privateforests/pesticides.shtml>). This web site includes a link to Oregon Administrative Rules 629-620-0000, Chemical and Other Petroleum Product Rules. In addition, the web site describes and has links to many other publications and databases about pesticide use and application. Similar information also is available at local Oregon Dept. of Forestry offices.

*This position statement was adopted by the OSAF Executive Committee on May 6, 2008. The statement will expire May 6, 2013 unless after thorough review it is renewed by the Committee.*





# Clearcutting

A Position of the Oregon Society of American Foresters

**The Oregon Society of American Foresters supports the careful use of clearcutting as a tool for meeting diverse management objectives, including desired conditions for the regeneration and health of important forest types. Many of the forests seen today in western Oregon were established after clearcutting, which demonstrates its effectiveness in regenerating native species such as Douglas-fir. Current laws include many measures that regulate the use of clearcutting on Oregon's private and public lands. Professional foresters and other specialists draw from a strong foundation of science and experience to further ensure that clearcutting is applied with prudent consideration of environmental, economic, and social concerns.**

## Issue

Clearcut areas can be relatively unattractive for several years after harvest, which contributes to perceptions that the practice may be harmful to the environment. Interest groups that oppose clearcutting add to these negative perceptions through repetitive public criticism, graphic images and sweeping generalizations about its impacts. Such criticism often misuses the term to describe undesirable logging or permanent forest clearing. Less well known is the fact that forestry professionals carefully define and prescribe clearcutting as a tool for effectively harvesting and regenerating forest species with a "shade-intolerant" (i.e., sun-loving) ecology, while also following laws and using management techniques designed to limit environmental impacts.

## Background

Even in the days of Lewis and Clark, the Pacific Northwest was a mosaic of forest conditions that ranged from forest openings, young forests with many uniform trees, to older forests with large trees and more diverse composition and structure. These native forests were established after major natural disturbances, including wildfire, pest outbreaks, and wind and ice storms. Periodic disturbances cleared large and smaller areas of tree and other cover, altered disease and insect populations, and exposed mineral soil seedbeds. Such disturbances remain a key part of the ecology of many native species such as Douglas-fir, aspen, larch, alder, and several pines. Seedlings of these shade-intolerant species grow poorly under a closed forest canopy and thus these forests will not regenerate well until larger openings provide full sunlight for the seedlings to thrive.

Today, the needs and values of both rural and urban communities do not allow us to rely on natural disturbances to regenerate forests, especially the large wildfires that can greatly threaten people, property and natural resources such as water supplies and habitat for important species. Instead, foresters carefully prescribe harvest and regeneration methods, including clearcuts of varying size and shape, to mimic natural disturbances while also protecting key resources with buffer areas and by leaving some green or dead trees for "structural diversity" within clearcuts. Depending on habitat needs and other conditions, foresters may plan for trees to be retained within clearcuts individually or in small or large clumps. Logging operators typically follow detailed directives to effectively implement management prescriptions.

As defined by the forestry profession, clearcutting involves the harvest of nearly all standing trees within a specific area for the purpose of regenerating a new forest (Dictionary of Forestry 1998, Society of American Foresters, Bethesda, MD). Although differences exist between a clearcut and a naturally disturbed area, many of Oregon's current second-growth forests clearly reflect the role and success of clearcutting in regenerating native, sun-loving tree species. If harvest methods other than clearcutting are

used persistently in such forests, the species and structure of these forests may differ from natural stands and have some unusual or undesirable results.

Research by forest scientists has shown that, in large landscapes, a variable, moving pattern of younger to older forests perpetuated by clearcutting provides dynamic and diverse habitats that contribute to plant and animal biodiversity. Conversely, in some areas, a lack of disturbance – through either clearcutting or natural events – appears to have negatively affected some desirable plants and animals. Forest openings and younger stages of forest development have some important roles and niches in the ecology of many of our native flora and fauna.

Forestry is an objectives-driven profession, and prescriptions for clearcutting can be designed by foresters to accomplish a variety of landowner objectives. Because forest products markets are now highly competitive and global in scope, clearcutting is attractive as often the most effective and economical method to harvest and regenerate many native tree species. Related activities that promote reforestation success, such as prescribed burning and tree planting, also are efficiently applied in clearcut areas. Similarly, the control of insect, disease, and wildfire hazards can be easier and more effective when clearcutting is an available management tool.

In Oregon, a clearcut area is a temporary condition because the state's Forest Practice Rules require prompt reforestation after harvest, i.e., a young, "free-to-grow" forest must be established within six years. Success is assured by a rule compliance rate of over 99% and the improved seedlings and methods that are now commonly used. State and federal laws and other policies also limit clearcut size and require stream buffers, wildlife trees and woody debris to be left within clearcuts to protect habitat and site productivity. In addition, legal and social concerns have led to greater attention to locating and designing clearcuts to reduce visual impacts. In recent years, clearcutting has constituted about 25 percent of the acres annually harvested on all ownerships in Oregon, the rest being selectively cut or thinned.

In summary, clearcutting is not appropriate for all situations or forest types in Oregon, but where suitable and applied carefully by skilled forestry professionals, it is a well-proven harvest and regeneration method. Careful planning and implementation of harvest and reforestation prescriptions, in compliance with state and federal regulations, are keys to avoiding negative impacts of clearcutting while realizing its benefits. Oregon's professional foresters and forest operators have the knowledge and experience to understand the benefits and risks of clearcutting. Working with other resource professionals, foresters can provide essential guidance for its proper application in meeting landowner objectives and broad public goals.

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