Recovering from Wildfire

A Guide for California's Forest Landowners

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What Should I Do Now?

Well, the disaster so many forest landowners have always feared has finally happened to you: wildfire. Fire may have burned many acres of your land or a few, and it may have burned it completely or only partially. Whatever the circumstances, you're now left wondering, "What should I do now?"

After the fire is out, it's time to start making some decisions. Although you may feel that the worst has happened, there are actions you can take now to protect your land from further impacts and to recoup some of your losses.

This publication discusses issues that family forest landowners should consider following a wildfire in their forest, including how to protect your valuable property from further damage due to erosion, where to go for help and financial assistance, how to manage salvage harvesting on your land, how to claim a casualty loss on your tax return, and how to help your forest recover from wildfire.

UNIVERSITY OF CALIFORNIA Agriculture & Natural Resources
Publication 21603

Emergency Help

Contact the California Office of Emergency Services (OES) to find out if a local service center for fire victims has been set up. The local OES office can be found in the government listings in the front of many phone directories under "State Government, Emergency Services, Office of"; the website address is www.oes.ca.gov. Although other agencies and programs may be brought to bear on the situation if a fire is declared a state or federal disaster, the OES is still the primary agency to contact.

Assessing Resource Damage

Once the fire is out, the first step is to assess the damage. Future actions such as erosion control, salvage harvesting, and replanting depend heavily on the amount of damage caused by the wildfire.

An important determination to make immediately after the fire is the intensity at which it burned. While wildfires can be very destructive, most fires burn at low intensity throughout most of their area, with only occasional pockets of moderate- to high-intensity burn. Occasionally, fires do burn at high intensity over large areas.

Low-Intensity Fires. Fires that burn at low intensity do not burn up the forest canopy (fig. 1). Most leaves or needles remain on trees, even though some may be brown and the lower branches may be scorched. The ground is still partially covered by old needles, leaves, and decaying wood. Low-intensity fires are, in the long run, beneficial to maintaining a healthy forest. In fact, many California tree species and plant communities evolved with low-intensity fire as part of the natural landscape. These fires clear out the underbrush, thin out young trees that may be too numerous for healthy forests, and reduce the amount of fuel accumulating on the forest floor, thereby lessening the chance of future high-intensity wildfires.

Moderate-Intensity Fires. Moderate-intensity fires burn into the forest canopy and consume the needles and leaves from many, but not all, trees (fig. 2). These fires also consume a portion of the forest ground cover. Since moderate-intensity fires typically leave the biggest and most vigorous trees alive, some forest canopy cover will remain.

High-Intensity Fires. Fires that consume from half to all of the forest canopy and everything on the forest floor are classified as high-intensity fires (fig. 3). The ash from high-intensity fires is white or gray and offers little protection from rainfall and erosion. Under certain conditions of soil type, fire intensity, and type of vegetation burned, a water-repellent, or hydrophobic, layer is formed in the soil that decreases water infiltration and increases runoff and soil erosion, especially in the first rains following the fire (see "Erosion Control Measures," below).

Mapping. Landowners should record the burn intensity of the affected areas on a map of their property. Even if a majority of the area burned at low intensity, there may be "hot spots" with greater destruction that are important to note. Also, forested land may suffer resource impacts even if the fire never actually burns the forest: for example, fire suppression activities may remove the forest ground cover layer to deprive the fire of fuel. Note should also be made on the map of bulldozer lines and areas where snags were felled. This "burn map" can then be used to plan for forest rehabilitation through erosion control and replanting, if necessary.

Figure 1. Low-intensity burn (center of photo): Trees remain green and have live foliage after the fire, which burned along the ground. In areas of moderate-intensity burn (foreground and background), needles have been killed and are brown but are not consumed. (Megram Fire)

Figure 2. Forest floor of moderate-intensity burn 1 year after the fire. Although needles and litter were consumed by the fire, needles cast by surviving trees cover and protect the soil surface. (Megram Fire)

Figure 3. High-intensity burn: Trees are killed, foliage and litter on forest floor are consumed, and the soil surface is bare and subject to erosion. Log terraces and straw mulch would disperse water and reduce erosion at this site. (Fountain Fire)

Soil Erosion Hazards

The most damaging long-term resource impact that can occur after wildfire is soil erosion. Erosion robs land of its soil and its ability to grow vigorous trees. A healthy forest keeps soil in place on the land. This is accomplished by two forest layers: the ground cover layer, or litter layer, and the forest canopy.

The forest canopy intercepts raindrops and reduces their impact on the soil. Rain that makes it through the canopy is intercepted by the litter layer that covers the forest floor. Together, the canopy and litter layer protect the soil from the force of rain, which can detach soil particles. Without their protection, detached soil particles can wash down denuded slopes, entering stream channels and reducing water quality and damaging aquatic habitat.

In addition to protecting soil from the force of rain, a litter layer helps the soil absorb rainwater. In the absence of litter, rain is more likely to hit the soil surface and run off than it is to infiltrate into the soil; rain reaches the stream channels faster and leads to an increase in the possibility for flooding.

Your burned forest land is at increased risk for soil erosion if

- The forest litter layer has burned off, exposing bare soil.
- The forest canopy has burned away, reducing rainfall interception.
- The fire was of high intensity, causing soil to repel water.
- Slopes are steep.
- Rain falls in large amounts quickly.
- The soil is highly erodible.
- Your land is directly downslope from other burned areas.

Erosion Control Measures

A number of erosion control measures can be taken to lower the soil erosion hazard and protect your land's productivity and water quality during the first few years after a fire (fig. 4). The goals of these measures are to cover the soil surface and protect it from raindrop impact, to improve the soil's ability to absorb water, and to reduce the amount and speed of overland water flow.

Initially, the soil can be covered with slash (downed branches), mulch, and/or planted or seeded vegetation (usually a grass that sprouts quickly and has a dense, fibrous root system to bind the soil). For large areas where covering the soil is not economically feasible or will not occur quickly enough, the first step is to control the water running over the soil by erecting barriers to runoff that slow and disperse the water, reducing its erosive power and allowing it to soak in or settle out sediment before reaching a stream.

Slash Spreading. Tree limbs and branches can be spread on the soil to reduce raindrop impact. If branches are cut small enough (slashed) so that they come in contact with the soil, they will also help disperse overland water flow and reduce runoff and erosion.

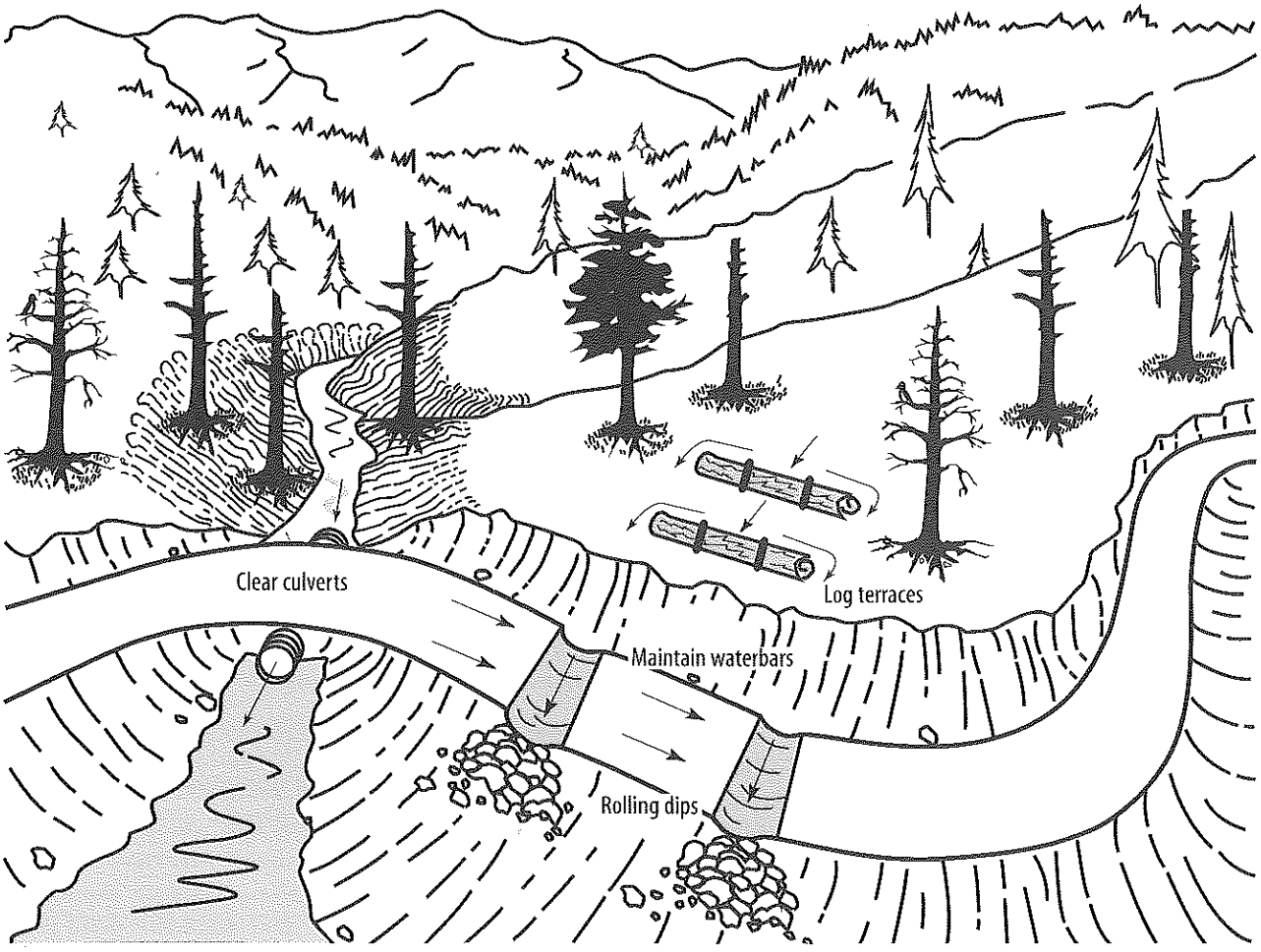


Figure 4. Erosion control and road maintenance practices (arrows indicate water flow). Adapted from *Handbook for Forest and Ranch Roads,* Mendocino County Resource Conservation District, June 1994, p. 12.

Mulch. Straw can be spread over the soil at 2 tons per acre (4.5 metric tons/ha), or about 100 pounds per 1,000 square feet (about 50 kg per 100 sq m). An average 74-pound bale covers about 750 square feet (about 70 sq m). On steep slopes, it helps to "punch in" the straw into the soil with a long, narrow-bladed shovel sometimes called a transplanting, or tile, spade. The result should look like the tufts of a toothbrush. The straw should be certified by the county agricultural commissioner as free of noxious weeds. Hydromulching uses a machine to blow straw, newspaper, or other fiber as a water slurry onto the soil. This technique is used by highway departments to stabilize road cuts, but it is probably infeasible in forests except where large areas are to be covered. Landscape fabrics, or geotextiles, are also used to control erosion, but they are more expensive than straw or natural mulches.

Seeding. Grass seed can be spread that will sprout quickly and grow roots to hold the soil. Depending on the type and amount of vegetation present before the fire, the intensity of the fire, and the amount of soil disturbance, there may be sufficient grass and herbaceous plant seeds in the soil to germinate and provide cover. If the fire is too hot or if the soil disturbance from the fire suppression effort or salvage logging is too extensive, the native seeds may have been removed or buried, and you will have to apply seeds. Although native plant seed is often preferable, it can be difficult to find in sufficient quantity (especially if the fire burned thousands of acres), and it can be more expensive than nonnative plant seed.

Priority areas for seeding include the steeper, more erosive slopes. However, since these slopes are more vulnerable to soil erosion, it is likely that seeds that are unprotected by soil or mulch will wash down the slope during the first rains before the seeds can germinate. This is especially likely if the first rains are heavy and the fire was intense enough to make the soil water-repellent. Therefore, it is advisable to cover seed with a mulch or landscape fabric where feasible (hydromulching often applies seed along with the mulch).

Log Terraces. To slow and disperse runoff water, log terraces can be created by felling dead trees along the contour of the land, across the slope. Delimbing these trees will allow them direct contact with the soil.

Straw Bales. Straw bales can be placed on hillslopes or across drainages to act as sediment traps. Each bale should be anchored with two stakes.

Waterbars. Waterbars are speed bumps for water made of compacted mounds of soil and rock placed across a road, trail, or firebreak. These mounds divert water to the side onto a nonerosive, stable area of vegetation, rock, or other material, dispersing the water's erosive power.

Road Protection

Another component of your forested landscape that may need extra protection after a fire is the road system. The fire has most likely destroyed vegetation and forest floor litter that would have intercepted and slowed runoff water. Also, the soil may have developed a water-repellent layer that increases runoff. The drainage system of roads in a burned area may not be adequate to handle the increased runoff, debris, and sediment after a fire. Roads and trails can also act as conduits for the increased surface flow and may need extra attention to slow water movement.

To protect the road system as well as the downstream water quality, consider taking the following measures. To insure proper design and installation, work with experienced professionals.

To protect the road system:

- Armor culvert inlets or bridge abutments.
- Patrol roads during significant rain events to clean out clogged ditches and culverts.

To slow and divert water:

- Construct cross-drains or waterbars for limited-use roads.
- Remove berms on the outside edge of the road's driving surface to allow dispersal of water.

To trap sediment and debris:

- Install sediment traps below culverts to prevent sediment from leaving the site.
- Install trash racks at culvert inlets to block woody debris from plugging the culvert.

To increase drainage:

- Enlarge the current ditch system.
- Remove or bypass existing culverts or install larger culverts in special cases.

Assessing Tree Damage

Once the intensity of the fire has been assessed and hot spots of resource damage have been identified and treated to reduce the immediate threat of erosion, it is time to begin planning for long-term rehabilitation of the site.

One problem in long-term planning is estimating which trees damaged by fire may die in the near future. Even trees in an area where the fire burned at low intensity may die in the near future if they sustained enough damage. An understanding of how trees are damaged by fire and how tree mortality occurs can help make this guess an educated one.

After tree damage has been assessed, landowners can make decisions as to which trees may need to be removed. Candidates for removal most certainly include heavily and moderately damaged trees near structures and roads, since these hazardous trees are likely to fall or break and cause damage in the near future.

Light Damage. In a tree that sustains light damage, foliage has been partially scorched, needles discolored, and the trunk blackened. If enough needles remain in an undamaged condition, the tree will be able to continue manufacturing food through photosynthesis. Lightly damaged trees have a good chance of survival, assuming that conditions that promote tree health, such as adequate rainfall, continue (figs. 5A, B, C).

Moderate Damage. In a tree that sustains moderate damage, foliage has been mostly scorched, but growth buds at the tree top and branch ends have survived. The tree may survive in the short term, but it has been weakened to the point that it will have less ability to withstand future stresses such as drought, insect damage (particularly bark beetles), or disease outbreak.

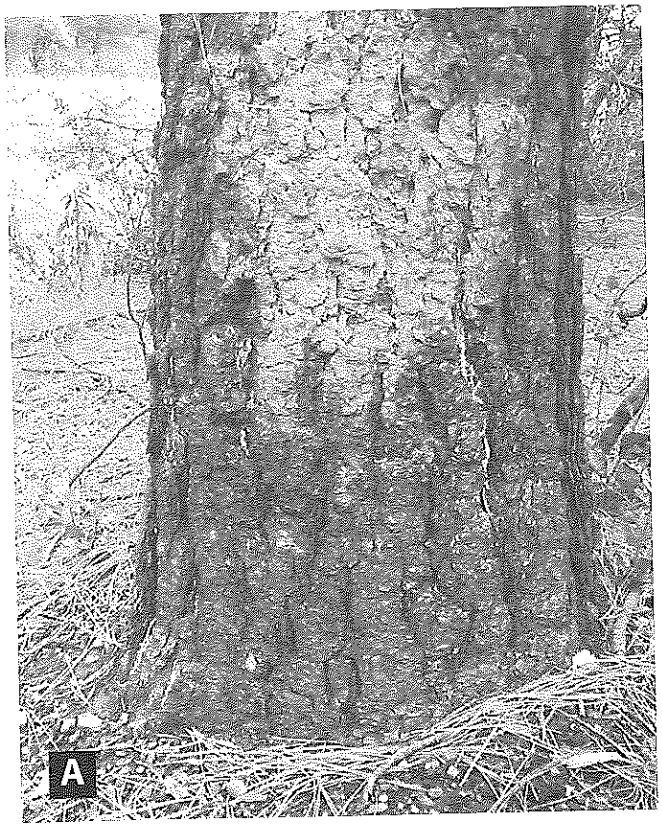
Heavy Damage. In a tree that sustains heavy damage, all foliage has been consumed and growth buds killed. Unlike broadleaf trees, conifers cannot survive even one complete defoliation. These trees are dead, even though the inner bark or cambium layer may stay alive (white) for up to 6 months (see figs. 3, 5B, 5C).

Salvage Timber Harvesting

Whether to harvest trees killed as a result of wildfire is a personal decision that will need to be made fairly quickly after the fire is out. Trees that sustain heavy damage die and lose their commercial value rapidly. Trees that sustain medium damage may survive but typically do not fully recover their previous vigor. This leaves them vulnerable to insect damage and drought.

Once a tree has died, it loses its commercial value quickly due to decay. The speed at which this occurs depends on the tree species (table 1). White fir is especially quick to decay, while Douglas-fir is much more resistant and will typically take several years to decay. In addition, dead trees that still contain sound wood become infected with blue stain fungus, which does not weaken the wood but decreases the value and grade of lumber that can be made from it.

Salvage harvesting provides a number of advantages to landowners. Most important, accumulated



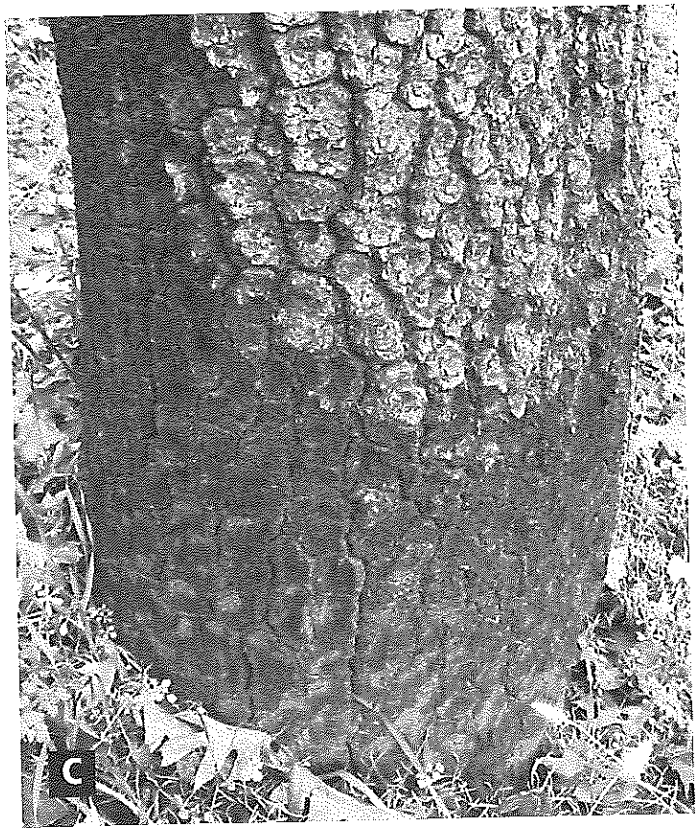


Figure 5A. Light damage to gray pine. Bark is blackened but not noticeably eroded by the fire; bark ridges and fine structure are still visible.

Figure 5B. Bark is severely burned on the lower right side of the trunk of this ponderosa pine, as evidenced by the erosion or loss of bark features, which are still apparent on the lightly burned left side of the trunk. The fine plate structure and bark crevasses are still prominent on the lightly burned bark.

Figure 5C. Bark on this oak tree is severely burned all around the base, as evidenced by the loss of bark features compared with the relatively unburned bark on the upper right side of the trunk. Fuel (leaves, twigs) accumulating around the base of the tree creates more intense and longer-duration burns and more severe damage. Raking leaves and litter away from trunks could reduce fire damage to trees.

dead and damaged trees provide fuel for future fires, and their removal reduces the risk that additional fires will reburn through the damaged area. Removal also reduces the spread of insects that proliferate in dead and damaged trees. Also, income received from salvaged trees can be used to recoup losses as well as to finance rehabilitation of damaged areas through replanting and installation of erosion control measures.

While salvage harvesting can produce these benefits, it must be carried out properly to avoid further resource damage. Improperly conducted harvesting can increase soil damage if too much soil is disturbed or if the wrong equipment is used. In the long term, some standing dead trees are needed for wildlife habitat and cover; also, dead trees return nutrients to the soil.

Because of these risks, it is critical that salvage harvesting be carried out in a professional manner with the help of a registered professional forester (RPF). If any financial benefits are to be gained, harvesting must also be done quickly before decay depletes damaged trees of their commercial value.

Table 1. Conifer decay rates after fire.

Years after tree death	White fir *(Abies concolor)*	Ponderosa pine or Jeffrey pine *(Pinus ponderosa* or *P. jeffreyi)*	Sugar pine *(Pinus lambertiana)*	Douglas-fir *(Pseudotsuga menziesii)*
1	10–20% of volume decayed	25% of sapwood blue stained*	extensive blue stain in sapwood	minimal decay; some cracks in heartwood
2	50% of volume decayed	all wood blue stained; 50% of sapwood decayed	75% of sapwood decayed	25–50% of sapwood decayed
3	100% of volume decayed	all sapwood and some heartwood decayed	all sapwood and some heartwood decayed	all sapwood decayed; 1 inch of heartwood decayed
4	—	70% of volume decayed	50% of volume decayed	2 inches of heartwood decayed
5	—	90% of volume decayed	50% of volume decayed	3 inches of heartwood decayed

Source: Dale, J. W. Fire damage literature summary. Unpublished paper. Vallejo, CA: USDA, Forest Service, Pacific Southwest Region, State and Private Forestry, Forest Pest Management, 1987. Lowell, E. C., S. A. Willits, and R. L. Krahmer. Deterioration of fire-killed and fire-damaged timber in the western United States. Gen. Tech. Rep. PNW-GTR-292. Portland, OR: USDA, Forest Service, Pacific Northwest Research Station, 1992.

* Blue stain is a discoloration of the sapwood of pines due to fungal infection; considered a visual defect that often reduces the value of the wood. Sapwood is the white or light-colored wood that encircles the pink heartwood.

How Much Value Is Left in My Trees?

The value of burned trees depends on a combination of factors including species, timber quality and amount of decay, and market conditions. In general, pines are worth more than other species, larger trees are worth more than smaller ones, and fine-grained knot-free logs are worth more than knotty young trees. Sound logs can be made into lumber that has a higher value than decayed wood and brush, which can be sold as chips to wood-fueled power plants. The value of standing trees (stumpage, income the landowner receives) is lower than the value of the log delivered to the mill because of the cost of harvesting and hauling logs over long distances.

Salvage Harvest Planning and Permitting. If you choose to harvest some of the trees killed by fire, you will need to acquire the proper permits. You must notify the California Department of Forestry and Fire Protection (CDF), which regulates timber harvest on private land in California.

Unlike harvesting done when there is no fire, salvaging of fire-killed trees does not require a timber harvest plan (THP). It does, however, require that you file a Notice of Emergency Timber Operations, which must be signed by a registered professional forester. Exemption from preparing a timber harvest plan does not exempt landowners from environmental and other regulations aimed at protecting water quality, soil conditions, and riparian habitat.

Making Use of Professional Help

A registered professional forester can help you sell your trees, secure the best price for them, plan and execute the harvesting, and reforest your land. Asking neighbors and friends who have harvested timber before is a good way to find registered professional foresters, or you can consult most telephone yellow pages under "Forester, Consultant."

You may want to contact several foresters to obtain estimates for the services you want provided. Typically, there is no charge for an estimate. You will need to develop a written contract with the forester that spells out the services being provided and fees being charged.

Often, following a wildfire, landowners will receive unsolicited offers for their burned trees. Give serious consideration to obtaining independent assessments of your timber value. Foresters and loggers working for sawmills will be seeking the best deals for the mills, not necessarily for the landowners.

Services to Seek from a Registered Professional Forester. Registered professional foresters can offer a wide variety of services to landowners attempting to recover from wildfire. These include

- preparing an emergency plan or timber harvest plan
- assessing fire-damaged trees
- marking trees to be harvested and those to be left behind for wildlife habitat
- establishing cutting boundaries
- obtaining archaeological clearance
- obtaining necessary Fish and Game Department and CalTrans permits
- providing an estimate of timber volume by species
- calculating timber basis for casualty loss and tax purposes
- finding a licensed timber operator or logger
- supervising the logging operation
- giving advice on reforestation
- giving advice on erosion control

Forest Regeneration

How a mixed-conifer forest develops naturally after a fire is primarily a function of the intensity at which a fire has burned. High-intensity fires, which burn very hot, consume the whole tree and forest stand, dramatically changing the growing conditions where the forest once stood. Without sheltering vegetation, new conifer seeds attempting to take root face very sunny, hot, and dry conditions. Because of these harsh conditions, conifer seedlings have difficulty taking root on sites of high-intensity burns, and when they do manage to survive, they tend to grow more slowly than they would have in the same location before the fire. In these cases, grasses and shrubs dominate the site until moist, mild springs without frost allow conifer seedlings to become established and thrive. Seed-bearing trees must also be located nearby to provide seed for the next generation. Eventually, trees will grow up through the brush and will reproduce the mixed-conifer forest. This often takes 20 years. Tree seedlings most likely to survive in areas burned at high intensity include oaks and ponderosa pine. This is because they are very tolerant of drought and heat, which helps them survive and flourish better in harsh postfire conditions than other species do. They also grow more quickly in full sun than other tree species.

Moderate- and low-intensity fires leave at least a portion of the forest canopy intact, providing shade and shelter from harsh conditions to seedlings establishing themselves on the forest floor. After these fires, conditions are more favorable for regeneration of tree species such as firs and cedars that grow better under shadier conditions. Pines and oaks will still grow well, too.

Reforestation

Landowners are not required by law to replant a forest that has been damaged in a wildfire. However, replanting can speed the development of a mature forest on a burned site. Landowners who replant must consider their objectives for the forest property. Whether the goal is wildlife habitat, timber production, watershed protection, erosion control, Christmas trees, or a combination of these will shape how the reforestation effort is conducted.

Site Preparation. It is crucial to properly prepare the site before planting new trees. This often involves removing residue after a previous harvest or fire, ripping the soil to break soil compaction, and controlling weeds. Salvage harvesting with complete cleanup of slash usually prepares a site adequately for planting.

Selecting Tree Species. Selecting the appropriate tree species for the site is also important. Ponderosa pine is best suited for regenerating exposed, open sites created by a high-intensity wildfire. Douglas-fir, sugar pine, and white fir are less successful on exposed sites but will successfully become established under the shadier conditions of low- and moderate-intensity fires, which leave more of the preceding forest stand intact. Deep, nongravelly soils with good moisture-holding capacity regenerate Douglas-fir, sugar pine, and white fir if competing vegetation is controlled.

Seedling Care. Planting seeds directly is not recommended due to the overwhelming loss of seeds from animal and insect predation. Nursery-grown seedling stock is usually 1 year old (container stock) or 2 years old (bare root stock). Seedlings are vulnerable to grasshoppers, weevils, gophers, rabbits, mice, deer, and cattle. Seedling protectors are available to prevent damage from deer and cattle. Controlling grass and shrubs can help alleviate the insect and rodent problem and may also be necessary to ensure tree survival, especially on poorer soils and harsher sites where competition is great for available moisture and nutrients. Weed control is most effective and cheapest when done within the first 2 to 3 years following planting. If delayed or postponed altogether, trees may die or languish (fig. 6). Only 2 or 3 years of weed control are needed to establish the trees, after which further weed control will be unnecessary.

Forest Growth. Weed control gives trees a few years' advantage over competing vegetation, allowing trees to predominate on the site once again. In intensively managed ponderosa pine stands on good timber sites, merchantable trees 20 inches (about 50 cm) in diameter and 100 feet (about 30 m) tall can be produced in 60 to 80 years. On poor sites with uncontrolled competition, conifer dominance might take 50 years or more, with merchantable trees produced in 100 years or more.

Reforestation Cost-Share and Assistance Programs. A number of cost-share programs are available to assist landowners with reforestation and other resource conservation practices. Examples are the California Forest Improvement Program (CFIP), administered by the CDF, and the Forest Incentives Program (FIP), administered by the USDA Natural Resources Conservation Service (NRCS). What is available will vary by county, the resources available to the agency that year, and the size and status of your forested land. Agencies that provide technical assistance and administer cost-share programs are listed in "For More Information," p. 14.

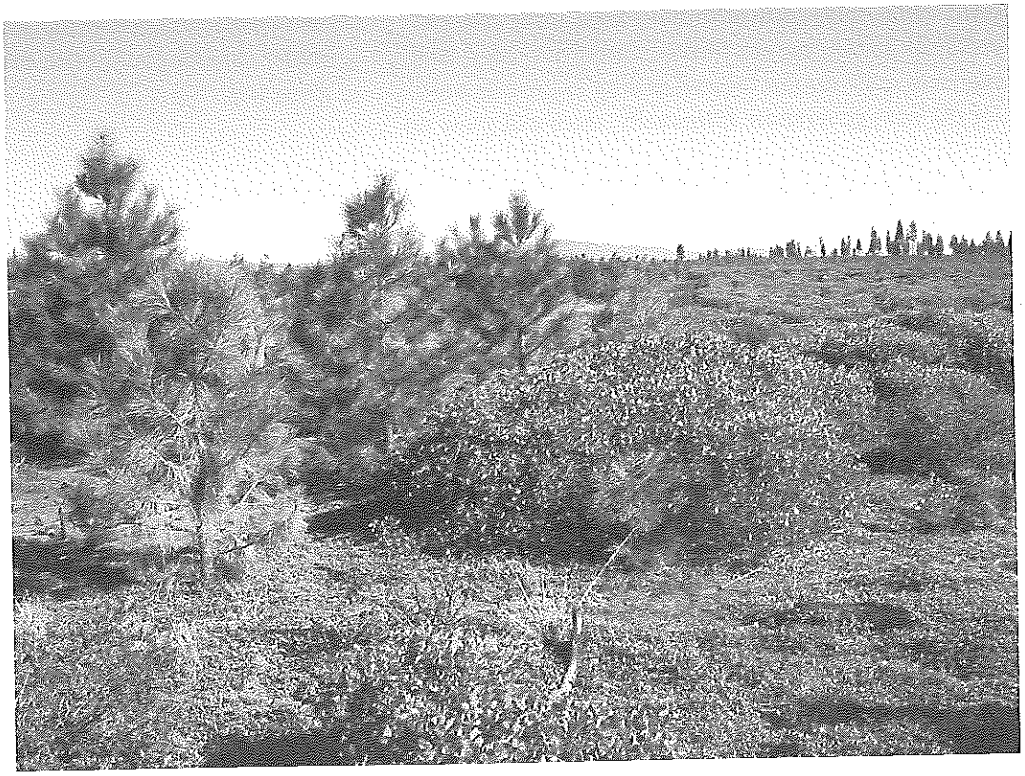


Figure 6. Reforestation. Weed control is important to ensure successful regeneration of trees. At this study site, brush competition was controlled on the left, where 20-year-old trees are now 20 feet tall. On the right, brush was not controlled, and pine survival was low and tree growth stunted.

Tax Implications of Fire Losses

A loss of a portion of the forest stand on your property due to wildfire can be claimed on your federal income tax statement as a casualty loss. A casualty loss is a sudden and unanticipated loss resulting from fire, storm, or other natural disasters. In general, casualty losses can be deducted directly from ordinary income.

Getting Tax Advice. When planning for tax implications of fire losses, you should strongly consider getting tax advice from an enrolled agent. This tax professional can help you evaluate your tax situation and advise you on the most tax-advantageous method for selling timber. An enrolled agent can also compute your taxes for you. Enrolled agents can be found by consulting local telephone book yellow pages under "Tax Preparation." The discussion that follows is based on tax law current in the year 2000.

Allowable Deduction. Calculating the amount that can be claimed as a deduction requires sound data on your forest stand, probably best collected by a registered professional forester. In some cases, the expense of collecting the necessary data may be greater than the tax savings. However, the data required to determine casualty loss can be collected by a registered professional forester while developing a salvage harvest program.

The allowable deduction is the lesser of one of the following two values:

- **The change in the fair market value of the timber that resulted from the fire.** In order to determine this value, an accurate inventory of the volume, grade, and size class of the timber both *before* and *after* the fire is required. Since landowners may not have a thorough assessment of their timber stand before a fire, an estimate of its previous condition is required along with knowledge of timber and land values.
- **The adjusted basis of the timber.** The original timber basis is defined as the original purchase price for the timber asset. When timbered property is purchased or inherited, the value of the entire property is allocated to the land, the improvements on the land, and the value of the timber itself. This value is adjusted over time when capital additions are made or when the amount of the timber basis is depleted, as during a wildfire or timber harvest. Calculating the adjusted basis of timber after wildfire requires an estimate of the timber volume, grade, and market value at the time of purchase of the property. The longer the timber land has been owned, the more difficult and costly it becomes to make this estimate.

Yield Tax. If you do decide to salvage-harvest some of your burned timber, you will be required to pay a yield tax. This is based on the value of the timber just before it is harvested. The tax, at the year 2000 rate of 2.9 percent, is paid to the California State Board of Equalization.

Reforestation Tax Credit. If you decide to replant burned areas, you may, under year 2000 tax laws, claim a 10 percent tax credit for your planting and reforestation expenses, up to a maximum of $10,000 per year. These expenses may also be amortized over a 7-year period.

For More Information

The following sources can provide more information on the topics in this publication.

General Information

California Forest Stewardship Helpline. Phone: 1-800-738-8733. The Helpline also distributes the *Cost-Share and Assistance Program Directory for Individual California Landowners and Indian Tribes,* which is also available online at http://ceres.ca.gov/foreststeward/funding.html.

Cost-Sharing and Technical Assistance

California Department of Forestry and Fire Protection (CDF). The local office can be found in many telephone directories under "Government Listings, State Government Offices, Forestry and Fire Protection." Website: www.fire.ca.gov

U.S. Department of Agriculture, Farm Services Agency (FSA). The local office can be found in many telephone directories under "Government Listings, United States Government Offices, Agriculture, Dept. of, Farm Services Agency." Website: www.fsa.usda.gov

U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). The local office can be found in many telephone directories under "Government Listings, United States Government Offices, Agriculture, Dept. of, Natural Resources Conservation Service." Website: www.ca.nrcs.usda.gov

Forest Landowner Education and Technical Assistance

Forest Landowners of California. Phone: (916) 972-0273. Website: http://www.forestlandowners.org/

Resource Conservation District (RCD). Phone: (916) 447-7237. Website: http://www.carcd.org/

University of California Cooperative Extension. The local office can be found in many telephone directories under "Government Listings, County Government Offices, Farm Advisor (or University of California Coop. Extension). Websites: http://nature.berkeley.edu/departments/espm/extension/ OR http://danr.ucop.edu/regional.htm

Emergency Exemptions and Timber Harvest Plans

California Department of Forestry and Fire Protection (CDF). The local office can be found in many telephone directories under "Government Listings, State Government Offices, Forestry and Fire Protection." Website: www.fire.ca.gov

Tax Treatment of Timber

National Timber Tax Website. Contact them at www.fnr.purdue.edu/ttax

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Publication 21603

Printed in the United States of America on recycled paper.

3m-pr-2/01-SB/VFG

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Agriculture &
Natural Resources
Publication 21603