



CALIFORNIA FOREST STEWARDSHIP PROGRAM

Forestland Steward

FALL 2015/WINTER 2016

Fire Season Is Over... Now What?

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Photo courtesy USDA Forest Service



Forestland Steward

Forestland Steward is a joint project of the CA Dept of Forestry and Fire Protection (CAL FIRE), Placer County Resource Conservation District, UC Cooperative Extension, and USDA Forest Service to provide information on the stewardship of private forestlands in California.

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The ideas contained in this newsletter are meant as general information and opinion, not management prescription.

Consult a Registered Professional Forester or a qualified technical advisor (see page 10) for management advice specific to your needs.



A bad year for California forests

This issue of *Forestland Steward* is more than a how-to for landowners in the burn areas. It can also help those whose forests are still intact anticipate some of the issues that may affect you in the future. Remember, fire is an integral part of California forests...eventually, all forests will burn.

This last year, 2015, was hard on California forests. In the fourth year of drought, aerial surveys showed 29.1 million trees killed, up from 3.3 million in 2014. Elevated mortality was found in 2.9 million acres, up from 909,000 acres in 2014. CAL FIRE recorded 6,227 wildfires that burned 307,592 acres. The actual number of fires was well above normal and the number of acres burned more than 200% above normal (see graph below).

This challenging fire season was not unexpected. The drought, unusually warm temperatures, overcrowded forests, and stressed trees all combined to create ideal conditions for wildfires.

The conditions are dire enough that the Governor has declared a state of emergency to address tree mortality, not only in fire-affected areas but throughout the state (page 12).

Now that fire season is over it's time to assess the damage and make plans for going forward.

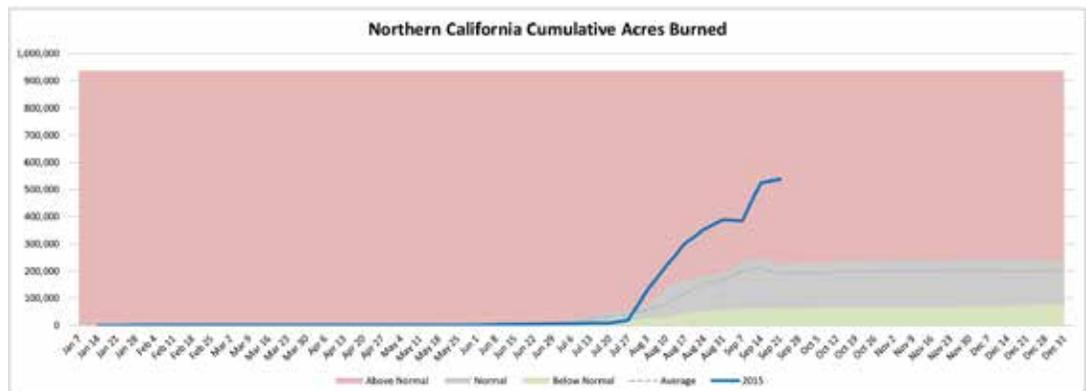
So, where are we? There are many areas of forestland affected by burns large and small. While fire is part of California's natural ecosystems and recovery is also part of the natural process, there are some serious risks to newly burned lands. Soil is more vulnerable to erosion (pages 3-6), roads and drainage infrastructure may need special attention (pages 3&6), and streams and waterways may be at risk of increased sedimentation. There may be hazardous trees that threaten structures

and roads (page 6), and invasive plants that can impact ecosystem recovery (page 7). Wildlife habitat is also altered by fire (pages 8&9).

Recovery in burned areas may be exacerbated this year by El Niño (page 5). After a burn, when the soil is most vulnerable, large amounts of rain can cause serious flooding and erosion. What will El Niño mean for burned areas and California forests in general? We don't fully know yet, but it's best to be prepared.

After a fire there are many decisions that need to be made, some very quickly. Depending on your goals and the unique characteristics of your forestland, you may prioritize various ways. You may need to stabilize the soil and roads (pages 4&5) or decide what to do about the dead trees left behind (page 8). You may decide to focus on habitat restoration or regenerating the forest (page 9). You may also want to take this opportunity to implement management practices that decrease the risk of future fires. The decisions you make will determine the future of your forest so you want to get it right.

It's best to work with experts when making these important decisions. Find a Registered Professional Forester (RPF) and other specialists as necessary (page 9). Several agencies have staff experts who can give advice and help you get started (page 10). Contact your local CAL FIRE, UC Cooperative Extension, Natural Resources Conservation Service (NRCS), or Resource Conservation District (RCD) offices. Professionals there can help in evaluating damage, finding funding, and may even be able to assist you in designing and implementing projects to put your forest on track to recovery.



NUMBER OF FIRES
 CURRENT 121%

ACRES BURNED
 CURRENT 234%

— from the National Interagency Coordination Center
www.predictiveservices.nifc.gov

Assess the damage

After a burn, the first thing to do is assess the damage. Start with the fire itself. Determine areas of low, moderate, and high intensity fire, then draw this information on a map of the property.

You'll also want to assess the damage to your trees, structures, utility facilities, roads, wildlife habitat, and other assets on your land.

Even if the fire missed your property, there may be significant problems you need to be aware of. If the fire burned upslope or upstream, assess the potential for landslides or flooding and take any necessary steps.

Pay attention to the following five areas (*see table at right*):

- Around your home and yard
- The immediate landscape beyond your yard
- Adjacent streams and drainages
- Your roads and driveways
- The watershed in which you live

A productive forest is built on healthy soil. One of the major threats from fire is loss of soil through erosion. Fire removes the litter layer and the forest canopy. These forest components are critical for protecting the soil. They intercept raindrops, slow the movement of surface water, and help facilitate the absorption of water. Without the forest vegetation and litter, valuable soil can wash away into streams, where it can impede water quality. The risk of erosion is greatest if:

- The forest litter layer has burned off, exposing bare soil.
- The forest canopy has burned away, reducing rainfall interception.
- If the fire was of high intensity, burning deep into the soil and consuming organic matter and buried wood.
- Slopes are steep.
- Rain falls in large amounts quickly.
- The soil is highly erodible.
- Your land is directly downslope from other burned areas.

There are many measures you can take to protect the soil and reduce the risk of erosion (*page 4*). Similarly, your roads may need protection to prevent excessive water runoff and sediment delivery to streams (*page 6*). It is important to work with professionals to help in decisionmaking and to ensure proper design and installation.

—see *Recovering from Wildfire: A Guide for California's Forest Landowners*, anrcatalog.ucanr.edu/pdf/8386.pdf

Areas to assess	Critical Questions	Recovery Actions
Around the house and yard	Do dead or damaged trees pose a hazard to home, or roads?	Remove hazardous trees.
	Are there damaged trees that would be susceptible to insects or disease?	Remove damaged trees or provide water, fertilizer, and/or pesticide (consult an RPF).
	Are drainage facilities around your home functioning normally?	Ensure that gutters and downspouts empty onto areas protected from erosion.
Landscape beyond the yard	What is the natural vegetation type for the burned area?	Identify the species present and dominant on your property.
	Should you restore the vegetation and wildlife habitat?	Consult an RPF to help you identify and achieve your goals. These may include steps to restore the habitat.
	Is your landscape at risk of increased soil erosion?	Identify the severity and extent of the burn.
	Should you do something to prevent soil erosion?	Protect bare ground by taking erosion-control measures; install log terraces or water bars.
Adjacent stream and drainage	Are you in or near a drainage at risk of flooding, debris flows, or soil sedimentation?	Identify the nearest drainages on a topographical map and walk your property and area.
	Did the streamside areas on or near your property burn? How severely?	Identify the severity/extent of the burn along streams. Monitor for invasive plants.
	Are there accumulations of debris and sediment in the stream? Are they moving?	Inspect channels on your property and upstream. Obtain a permit if necessary to clear the channel.
	Are there signs of slope instability near the stream?	Explore possibilities of streambank stabilization projects.
	Are culverts or bridges downstream at risk from flooding or debris flows?	Contact city or county about crossings maintained by their jurisdictions.
Roads and driveways	Do dead or damaged trees overhang roads and driveways?	Remove hazardous trees or prune branches.
	Are road drainage ditches and culverts adequate to convey increased sediment, water, and debris?	Inspect the road system after rainfall to identify any problems. Clean out culverts and ditches. Replace undersized culverts or regrade ditches. Contact a road expert to improve drainage.
	Are road stream crossings in danger of failure due to clogging debris?	Check stream crossings and clear debris before, during, and after storms.
Watershed	Did areas upstream from your property burn? How severely?	Identify your position on the landscape and the burned area.
	Are you directly connected to upstream lands by a stream, creek, or arroyo?	Identify who is responsible for managing upstream lands. Keep informed about management actions.

—adapted from *Recovering from Wildfire in Southern California Forests*, cemendocino.ucanr.edu/files/17268.pdf

Dos and don'ts for restoration after fire

DOs:

DO consult with experts: Natural Resources Conservation Service (NRCS), your local Resource Conservation District (RCD), Registered Professional Forester (RPF), or other restoration professional before starting a landscape, slope, or soil restoration effort on areas damaged by wildfire.

DO gather as much information as possible from CAL FIRE or other specialists to make your property fire safe when planning restoration.

DO evaluate and map out existing subsurface drainage, irrigation, and utility facilities on your property, including underground pipe drains and outlets, roof runoff/gutter drain outlets, culverts, irrigation systems, utilities, etc. Determine if they are still operable and/or degree of damage. *Note:* Underground plastic drains and irrigation lines may have melted or been damaged in the fire.

DO install sediment control measures, such as straw wattles, mulch, plantings, slash, sediment traps, or other properly designed and located measures, if necessary. Sediment control will help prevent soil from entering streams, ditches, and waterways, and protect water quality and supplies.

DO replant damaged landscapes with drought-tolerant, fire retardant native plants. Use planting stock or seed native to the area and from a locally collected source.

DO obtain any necessary permits before you cut down trees, perform major land grading activity, build a retaining wall, construct a permanent sediment or erosion control structure, or do any work in a riparian area, wetland, stream course, or other natural area. Permits and/or consultations may be needed from the County, CA Department of Fish and Wildlife, U.S. Fish & Wildlife Service, CA Regional Water Quality Control Board, U.S. Army Corp of Engineers, or NOAA/National Marine Fisheries Service.

DO monitor and maintain fire and fuel breaks created by firefighters on your property. Water bars/breaks should be provided and maintained on these so runoff does not concentrate and cause erosion. Consult CAL FIRE for assistance.

DO monitor and maintain all erosion, sediment, and drainage control measures, including vegetative treatments, before, during, and after all rainfall events. Correct deficiencies as soon as possible. Lack of long-term maintenance is a major reason for failure of treatments.

DO hire and consult with licensed contractors, preferably certified and with experience in soil erosion and sediment control, for design and installation assistance of vegetative and structural measures to restore slopes, soils, proper drainage conditions, and landscape.

DON'Ts:

DON'T be too quick to remove fire-damaged vegetation, including trees that were not completely burned. Many damaged and scorched native plants will resprout and come back, including severely burned oaks. Consider pruning before removing the entire plant.

DON'T place loose debris, prunings, or discarded vegetation in gullies, swales, or watercourses, over streambanks, etc to protect bare soil. Piles of brush will prevent plants from reestablishing and may dislodge in concentrated runoff or stream flows, causing other problems. Removed brush can sometimes be used as mulch if chipped or spread thinly over critical soil areas.

DON'T use broken asphalt or concrete, inorganic debris, etc. as erosion control measures, especially if these materials can come in contact with runoff water, natural drainages, and stream courses.

DON'T plant nonnative or invasive plants or grasses, e.g., annual ryegrass. In some situations bare and disturbed soil and slopes can be reseeded/replanted with native grasses and plants, but only if the seed and plants are from local known sources and indigenous to the area. If white ash (an indicator that the fire burned very hot) is present, resident seed in the soil was likely killed by the fire. It may be a good idea to reseed/replant these areas with natives of the same genotype, following a revegetation plan developed by an expert.

DON'T cover fire damaged slopes with plastic sheeting. Plastic sheeting will increase runoff and the likelihood of erosion, retain moisture in the ground increasing the possibility of slope saturation and instability, and kill root systems of native plants trying to reestablish naturally. Depending on site conditions, an alternative might be hydromulch, rice straw, or an erosion control blanket if recommended by a specialist.

DON'T control and concentrate drainage and runoff without a proper drainage control design that considers proper sizing, location, and dispersion method. Whenever possible keep surface runoff in natural sheet flow and incorporate practices such as vegetative cover

to slow runoff and improve water infiltration. Consult specialists for general planning information, design, and installation.

DON'T use straw bales as water diversion and detention devices or for sediment control in burn areas. These require a great deal of maintenance and are not right for most situations. Straw wattles and loose straw spread over bare and disturbed soil is much more effective in protecting soil than that in bale form. Use only rice or weed-free straw to prevent nonnative grasses/weeds.

DON'T disturb the hydrophobic soil layer on slopes susceptible to landsliding. Hydrophobicity is a natural phenomenon that sometimes forms within 6" of the surface following fire and makes the soil water repellent, and reduces infiltration and the capacity to hold water. In other areas it may be advisable to lessen the impacts of runoff and erosion by breaking up this layer to aid plant establishment and water infiltration. Get an onsite soil evaluation and assessment from an expert.

DON'T disturb unstable slopes, especially in fault areas, or those with signs of previous movement or instability. Grading, cutting, removing trees or root wads, or other deep excavations will increase the likelihood of future slope failure. If slope alterations are absolutely necessary, consult an expert.

DON'T do anything. This may be the best solution on some properties. Doing nothing will allow nature and time to heal soil and vegetation damage, especially in wildland and other natural areas. In fact, tampering with natural processes may very well delay recovery and reestablishment of preexisting native cover.

DON'T do what your neighbor is doing. Every situation is unique. Your property is different in soil type, slopes, drainage, type and condition of plant cover, degree of fire damage, etc. Get expert advice and a damage assessment, including treatment recommendations, before proceeding with your restoration. Sandbags, plastic, straw bale basins, and check dams, etc. are temporary solutions that require maintenance. They can actually make problems worse or create new ones.

DON'T wait until the last minute to plan, design, and install erosion, sediment, or drainage control practices to safeguard your property. The nature and extent of your restoration efforts will depend on degree of damage, time needed to get a site assessment, acquiring an appropriate plan and design, securing any necessary permits, lining up a contractor, and doing the work.

—adapted and abridged from Rich Casale, NRCS District Conservationist/CPESC

What is El Niño and why should you care?

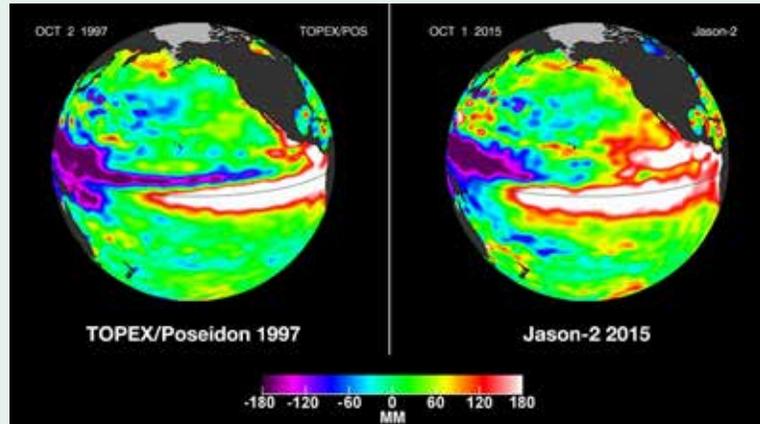


Image: NASA/JPL-Caltech

Comparison of developing El Niños in 1997 and 2015. Our current El Niño is stronger and hotter than that of 1997.

This is an El Niño year, perhaps one of the strongest on record. What does that mean and how will it affect you and your forest?

El Niño, which means “the boy child,” (named after baby Jesus because it often occurred around Christmas time) is a natural weather phenomenon that occurs every few (2–7) years. Trade winds that blow east to west in the Pacific Ocean weaken, causing the ocean to warm near the surface. This changes weather patterns across the globe. While El Niño usually means more rainfall for California, it can also cause drought and starvation in other parts of the world.

In California, although we are grateful that El Niño is bringing plentiful rain, there can be too much of a good thing. Strong rainstorms can also cause flooding and mudslides, which are of special concern in areas that have burned or been harvested.

El Niños are unpredictable, and this one more so than usual because of its strength. Last year, 2014, was the hottest year on record and, in part due to the El Niño conditions, 2015 was even hotter. Since El Niños cause the ocean to heat up, we are going into 2016 already warm and may break records again. This is uncharted territory.

What can you do? Be prepared. Pay attention to the weather reports. If you are in an area that has burned or is prone to flooding or mudslides do what you can to stabilize the soil and protect yourself. Talk to professionals. Be sure to have an emergency plan in place.

—World Meteorological Organization (WMO) El Niño/La Niña Update, www.wmo.int/pages/prog/wcp/wcasp/enso_update_latest.html

Bark beetles and tree mortality

Bark beetles thrive when trees are stressed or weak. Currently, there are unprecedented numbers of dead and dying trees in California due to the drought. What can you do? Learn more at http://www.readyforwildfire.org/Bark_Beetles_Risk. You can also view tree mortality in California on this GIS map: <http://egis.fire.ca.gov/TreeMortalityViewer/>.

The 5 D's

The key to successful surface drainage is to get the water off the road surface as quickly as is possible.

A simple method, called the 5-D Test, can measure the effectiveness of road drainage systems.

The 5-D's are:

1. Are all natural DRAINAGES conveyed (e.g., carried in dips, fords, culverts or bridges) across the road and released back into their natural channels?
2. Does the road drainage system actually DIVERT water off the road surface?
3. Is drainage frequently and quickly DISCHARGED from the road?
4. Is the energy of flowing water DISSIPATED onto nonerodible material at the point of discharge?
5. Is the DISTANCE between drainage structures adequate to prevent erosion of the roadbed and fill slope while preventing sediment delivery to nearby stream channels?

—from *Handbook for Forest, Ranch, and Rural Roads*

Protect your roads and drainage system

One major chore you should do every winter is take steps to protect your road system. This job becomes even more critical after a fire.

Roads can be a significant source of runoff and sediment to streams and waterways. When fire burns off the vegetation and leaf litter, water runs off faster. In addition, hot fires can turn the soil hydrophobic, or water repelling. This adds to the amount and velocity of water, which increases runoff, debris, and sediment. This additional runoff may cause channels to shift, creating additional streambank erosion.

Unless they are well designed and maintained, roads can be a conduit for water and sediment. Roads can be very technical and you can easily make costly mistakes. To ensure proper design and installation of road features, work with experienced professionals.

See also:

Recovering from Wildfire: A Guide for California's Forest Landowners
anrcatalog.ucanr.edu/pdf/8386.pdf

Handbook for Forest, Ranch, and Rural Roads.
www.pacificwatershed.com/sites/default/files/RoadsEnglishBOOKApril2015b.pdf

Road Solutions

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.
- Review culvert sizing for 100-year flow events and upgrade undersized culverts.



from *Recovering from Wildfire: A Guide for California's Forest Landowners*

Be vigilant: weed out invasive plants

Some native plants thrive after fire

Fire can be a boon or a bane to native plant species, depending on the characteristics of the species and the fire. In some cases, fire makes it harder for plants to recover. A very hot fire can sterilize the soil, destroying the native seed bank and the microorganisms on which plants depend. Fire may also volatilize critical nutrients in the soil.

On the other hand, fire provides the clean slate necessary for certain plant species to establish. Some actually require smoke or heat from fire to germinate. Plants that thrive in bare mineral soil are known as pioneers or colonizers.

Pioneer plants are those that come in first after an area has been highly disturbed, such as after a fire. These species are extremely important. They germinate and grow quickly. Their roots help stabilize the soil and their above-ground parts can intercept raindrops to soften their impact on the soil. Some of these early colonizers have bacteria on their roots that are able to take atmospheric nitrogen and turn it into a type usable by plants. This is part of the natural cycle of recovery after a wildfire.

The trouble with nonnative invasive plants

But some species with excellent pioneering characteristics do not belong in our forests. These are the nonnative invasive species that are able to establish quickly and exclude native species.

Invasive species can impact the native habitat in various ways. Some are simply better competitors—they get in first and multiply quickly, excluding the native species. Others release toxins that adversely affect other plants. Some species can change the chemistry of the soil, making it less hospitable to native species.

There are invasive species that can change the whole ecosystem by increasing flammability of the landscape so fires occur with greater frequency and/or higher intensity. Native species that are adapted to a specific fire regime may not be able to recover from these changes.

After a fire

After a fire you may want to reseed quickly, but be cautious. Nonnative erosion control seed mixes may contain undesirable species. Hay bales, also, can contain weeds. Check with a professional who knows your local area before you seed your land. Make sure you use locally adapted seed from appropriate native species.

Recommendations

The best way to stop invasive species is to remove them before they establish in large numbers. Remove these invaders before they can set seed. With an early infestation this can usually be done manually quite easily.

Some recommendations (*adapted from the California Invasive Plant Council*):

- Learn to recognize the native plants in your area and the major invasive pests there. Your local RCD can help.
- Reduce movement of nonnative plants by removing them from dispersal routes such as roads, trails, rights-of-way, and watercourses.
- Reestablish vegetation as quickly as possible after disturbance.
- Limit the use of materials such as gravel, fill, mulch, straw, and seed mixes that may carry weeds, or buy from suppliers who guarantee weed-free products.
- Wash vehicles and equipment to remove seeds.
- Monitor your property to detect new weed populations while they are still small and easily controlled.

See also:

Management of Invasive Species, www.cal-ipc.org/ip/management/ipcw/mois.php

Forest Stewardship Series 14: Exotic Pest Plants, ucce.ucdavis.edu/files/repositoryfiles/8244-54297.pdf



Bull Thistle

Franco Felini Creative Commons



Scotch Broom



Spotted Knapweed

Alan Vernon, Creative Commons

“The path to reaching this decision was not an easy one, and I found no simple solution that can fully achieve all the goals that I, the Forest Service, and members of the public have for the Rim Fire area. In some instances public safety goals are in tension with environmental protection goals; in other instances socio-economic goals are in direct tension with fuel reduction goals; and, in other instances the needs of one wildlife species are in tension with the needs of another. Recognizing that no perfect decision exists, I did my best to balance all these important goals...”

—Susan Skalski,
Stanislaus National
Forest Supervisor,
Rim Fire Recovery
Record of Decision

Snags, what to do?

Forest management is always a balancing act. The more you know, the better your decisions. But knowing more doesn't always make decisionmaking easier. The more you know, the more complicated it all becomes as well.

Take the case of snags, those standing dead trees in the forest. Some people see snags as a waste of space, old or damaged trees that need to be removed to make way for vigorous new trees. Others see great habitat value for birds and other wildlife; snags play a vital role in the forest.

After a fire there are lots of snags, in fact, the entire forest may be snags. Your decision about what to do about them will depend on many factors, including your goals and objectives for your land, the location, risks and hazards (hazardous trees, fire, insects), the current market value of the trees, and regulations.

Hazard trees

Some trees simply have to be removed. Hazardous trees near roads, trails, homes, and utilities pose a danger to life and property. These are a safety issue that must be attended to.

Habitat

If wildlife habitat is of primary importance to you, you may choose to retain many or most of the snags. Snags of various ages, sizes, and species are invaluable habitat to the many wildlife species that use them for food, nesting, cover, and perching. Standing dead trees eventually fall to become down logs that are also important wildlife habitat. Over time, as the forest vegetation recovers, the array of wildlife will change. As the logs decay they

return nutrients to the soil, and also release their carbon to the atmosphere.

Salvage harvest

Many landowners choose to harvest the dead or damaged trees after a fire to recoup their losses or finance restoration. If you want to do a salvage harvest, you must work fast. Burned trees retain their commercial value for only a short time before they start to decay. The speed at which this happens varies with species. Salvage harvest must be done correctly to avoid damaging the soil. This work requires the services of an RPF.

Fire danger

Another consideration is the danger of a dense snag forest becoming a fire risk. A recent study (*below*) found that in areas of high severity fire, dense snags and shrub vegetation in combination with severe fire weather caused reburns of high severity. They recommended altering vegetation and fuel loads to decrease the danger.

See also:

Post-fire vegetation and fuel development influences fire severity patterns in reburns, Coppoletta et al., in press; see <http://celassen.ucanr.edu/files/209575.pdf>

Tree Note: Survival of Fire-Injured Conifers in CA calfire.ca.gov/foreststeward/pdf/TreeNote33.pdf

Tree Note: Identifying Dead and Dying Conifers on Private Land in California calfire.ca.gov/foreststeward/pdf/treenote30.pdf

Burned Oaks: Which Ones will Survive? anrcatalog.ucanr.edu/pdf/8445.pdf



A dead-tree forest.



New growth may set the stage for future fires.

Photos courtesy USDA Forest Service

Tips for hiring a professional

There are times when you need a professional. This can be an RPF, a specialist from NRCS, RCDs, UC Cooperative Extension, CAL FIRE or US Forest Service foresters, or others. These experts have the education and experience to see possibilities and solutions that can save you time and money in achieving your goals.

If you decide to hire a specialist, it is important to choose the right individual for your needs. You want someone who will look out for your interests and listen to your ideas, help you find ways to achieve your goals, and who you are comfortable working with. This is especially important when you have a relationship that may continue for many years, such as with a RPF. As with your family doctor, personality may be as important as expertise.

How do you go about finding the best person for the job? Begin by making a list of the professions you think can help with your project. An RPF, licensed timber operator, surveyor, wildlife biologist, botanist, hydrologist, archaeologist, and engineer are just a few of the potential natural resource management professionals you may need.

Personal recommendations are often the best way to find a professional. Talk to friends and neighbors about their experiences, good and bad. Your local Cooperative Extension or CAL FIRE

office generally have lists of professionals, as do professional organizations. A search of the internet can also give you names.

In California, some fields (e.g., forestry, surveying, and pest control) require a license. Make sure your candidate's license is in good standing, and check for any disciplinary actions or lawsuits. Make sure there is appropriate insurance.

It is essential to ask for references. Talk to previous clients and view recent jobs. Prepare a list of questions to help you get started. Examples:

- Were you satisfied with the services performed?
- Did this professional respond to your questions in a timely and professional manner?
- Were there any surprises?
- Would you hire this person again? Why?

After you narrow your list, meet with several candidates before making your choice. It is best to tour your property with each. Ask questions such as "Given our family's goals and objectives, how would you recommend we proceed? What are our management options?" Decide which candidate is the right fit for you.

Once you have selected a professional, make sure there are no surprises by signing a contract or agreement that specifies services and costs.

See also: *Forest Stewardship Series 24: Professional Assistance*, nrcatalog.ucanr.edu/pdf/8254.pdf

Seedlings for Reforestation

Do you need seedlings for your reforestation or restoration project? A unique partnership among the El Dorado RCD, US Forest Service Placerville Nursery, and CAL FIRE was developed to help.

Your first step is to contact the RCD; they will help you through the process. Go to www.eldoradorcd.org/nodes/info/reforestation.htm for information or contact Mark Egbert at 530-295-5633, Mark.Egbert@ca.usda.gov

See also: *Forestland Steward, Spring 2015 and Winter 2013*

Fans of burned forests

Many species of plants and animals actually thrive in burned forests and the early stages of plant succession. These species play an important role in the forest.

Bark beetles, attracted by smoke and fire, may fly in to set up camp while the trees are still smoldering. These beetles bore holes in the dead or dying trees to lay their eggs. The larvae hatch and create galleries under the bark as they feed. These juicy beetle morsels, in turn, attract birds that follow the beetles to the burned areas.

Foremost among these is the black-backed woodpecker, an uncommon bird with unusual three-toed feet. The black-backed woodpeckers' preferred habitat is large burned tracts of forest with abundant wood-boring insects. Each bird can eat over 13,000 beetle larvae a year.

Black-backed woodpeckers also help break

down the forest. They forage on snags, flaking off the bark in search of their insect prey. They drill their nests in snags as well. These cavities later provide nesting sites for other birds and mammals.

Over time, as new growth develops, more types of insects and small mammals come to forage, which attracts birds of prey, other species of birds, and mammals such as deer, bats, and bears.

Burned habitat is ephemeral. After a few years the woodpeckers must move on to find a new burned or insect-infested forest.

This process is part of the rich cycle of renewal after wildfire.



Black-backed Woodpecker
Photo © Lyann Comrack

Resources Where to go for info after a fire

Landowner Videos

How do you like to learn? If you are a visual learner, this is the place to start. These short videos will give you an overview of good forest stewardship for your family forest. They begin with developing a management plan, then cover working with a forester, protecting your land against wildfire, cost-share programs, and more. ucanr.edu/sites/forestryonline/Forest_Landowner_Videos_Available/

Recovering from Wildfire: A Guide for California's Forest Landowners

This excellent booklet covers all the basics: assessing damage, soil erosion and control measures, road protection, salvage timber harvest, regeneration, and more. anrcatalog.ucanr.edu/pdf/8386.pdf

Recovering from Wildfire in Southern CA

Another great publication, similar to the one above but focused on southern California. cemendocino.ucanr.edu/files/17268.pdf

After Fire Resources from Amador RCD

A list of resources for those affected by the Butte Fire, including hazards from mudslides, erosion control, financial assistance, and recommended plants for reseeding. amadorrcd.org/?p=2146

Fuel Reduction Guide for Sierra Nevada Forest Landowners

Publication discusses the many aspects of fuel treatments; how to create fire resistant forests. cecentralsierra.ucanr.edu/files/88262.pdf

Handbook for Forest, Ranch, and Rural Roads.

This is the latest expanded update of the 1994 classic by Weaver and Hagans that covers everything you need to know about roads, their construction and maintenance. Goes into great technical detail but is very readable with many photos and illustrations. Highly recommended. www.pacificwatershed.com/sites/default/files/RoadsEnglishBOOKApril2015b.pdf

Also in Spanish: Manual de Caminos Forestales y Rurales, http://www.pacificwatershed.com/sites/default/files/manual_de_caminos_forestales_y_rurales_-_version_web_8222014.pdf

Forestland Steward newsletter. Look through past issues for fire-related stories. Start with: Summer 2015—Fire Behavior: What's Going On? Spring 2015—Restoration: A Gift to the Future Summer 2014—Another Year of Drought Winter/Spring 2014—Forestry Assistance Winter 2013—State Nursery and Regeneration Winter 2012—Management Plans Fall 2008—After the fire calfire.ca.gov/foreststeward/newsletter

Technical Assistance

Many agencies are available to provide technical assistance, referrals, information, education, land management plan assistance, and advice.

California Stewardship Helpline

1-800-738-TREE; ncsaf@mcn.org

California Dept of Forestry & Fire Protection

Stewardship Forester
Stewart McMorrow, Stewart.McMorrow@fire.ca.gov

CAL FIRE Forestry Assistance Specialists

(find the FAS for your county at http://calfire.ca.gov/resource_mgt/downloads/ForestAdvisorList.pdf)

Guy Anderson 559-243-4109
Glenn Barley 909-881-6955
Gregg Bratcher 951-659-3335
Scott Bullock 831-335-6741
Jason Butcher 707-726-1258
Jill Butler 707-576-2935
Brook Darley 530-224-2438
Damon Denman 530-842-3516
Dave Derby 530-872-6334
Adam Frese 209-532-7424
Henry Herrera 909-881-6905
Ivan Houser 530-257-8503
Mary Huggins 916-718-6258
Eric Just 619-590-3103
Al Klem 530-283-1792
Jonathan Pangburn 831-333-2600
Alan Peters 805-543-4244
Dawn Peterson 530-528-5199
Ed Orre 408-206-3704
Jim Robbins 707-726-1251

Don Schroeder 530-294-5110

David Shy 559-732-5954

Edwin Simpson 559-493-4307

California Association of RCDs

916 457-7904; staff@carcd.org

Natural Resources Conservation Service (NRCS)

State Forester; 530-792-5655

UC Cooperative Extension Forest Advisors

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707-445-7351; yvala@ucdavis.edu

USDA Forest Service

Jason Ko, Forest Legacy & Stewardship
707-562-8875; jmko@fs.fed.us

Calendar

February 14–March 4

Register for CA Fire Safe Council’s 2016 Grant Application Training (*all trainings are in March*)
Website: <http://www.cafiresafecouncil.org/events/register-for-cfscs-2016-grant-application-training/>

February 19

Webinar: Post-fire associations of butterfly behavior, occupancy, and abundance with environmental variables and nectar sources in the Sierra Nevada, California
Location: Resources Building, Sacramento
Website: <http://www.cafiresci.org/events-webinars-source/category/post-fire-butterflies>

March 1–2

Board of Forestry Meeting
Location: Resources Building, Sacramento
Website: bofdata.fire.ca.gov/

March 3

Webinar: Changing Risk in 3 Differing SoCal Communities: a GIS-based Approach
Sponsor: California Fire Science Consortium
Website & Registration: <http://www.cafiresci.org/events-webinars-source/category/wui-webinars-2016>

March 4–5

CLFA Spring Workshop/Annual Conference: The Responsible RPF
Location: Lion’s Gate Hotel, McClellan, CA
Contact: Kathleen Burr, 661-789-7683
Website: <http://www.clfa.org/wp-content/uploads/2016/01/Spring-Workshop-Annual-Conference-Brochure-2016.pdf>

March 24–25

Northern CA Prescribed Fire Council Spring 2016 Meeting
Location: Middletown, CA
Website: <http://www.norcalrxfirecouncil.org>

March 24–26

Central Oregon Fire Science Symposium: Living on the Edge of Change—Exploring the Dimensions of Restoring Fire Resilient Landscapes, Culture, & Economies on the Cascade Range’s Eastside
Website: <http://centraloregonfiresymposium.org>

April 5–6

Board of Forestry Meeting
Location: Resources Building, Sacramento
Website: bofdata.fire.ca.gov/

May 10–12

Board of Forestry Meeting
Location: TBA (travel)
Website: bofdata.fire.ca.gov/

USFS “Shared Service” staff available to assist landowners

Mariposa and Southern Sierra

Plant Pathologist: Martin MacKenzie, 209-532-3671 x242, mmackenzie@fs.fed.us
Entomologist: Beverly Bulaon, 209-532-3671 x323, bbulaon@fs.fed.us

Northern CA

Plant Pathologist: Pete Angwin, 530-226-2436, pangwin@fs.fed.us
Entomologist: Cynthia Snyder, 530-226-2437, clsnyder@fs.fed.us

Northeastern CA

Plant Pathologist: Bill Woodruff, 530-252-6680, wwoodruff@fs.fed.us
Entomologist: Danny Cluck, 530-252-6431, dcluck@fs.fed.us

Southern CA

Plant Pathologist: Melody Lardner, 909-382-2725, mlardner@fs.fed.us
Entomologist: contact Melody (above) for contact

You Choose: E-version (with links), hard copy (real paper!), or BOTH??

Learn tips and tricks to become a confident and proficient forest steward and keep current on the latest information, funding, and events. Send a note to litman@pacbell.net and specify whether you wish to receive either the electronic or paper version, or get both.

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Fill out this box and send it to CAL FIRE, Forestry Assistance, P.O. Box 944246, Sacramento, CA 94244-2460. Fax: (916) 653-8957; email: Jeff.Calvert@fire.ca.gov. For address changes, please send this box or contact Jeff Calvert via email, standard mail, or fax...be sure to reference Forestland Steward newsletter.

NOTE: For address updates or to make comments or suggestions about this newsletter, please contact Jeff.Calvert@fire.ca.gov. A limited number of extra printed copies may be available. Please send your shipping information and the number of copies you would like to Jeff.Calvert@fire.ca.gov or mail your request directly.

Governor Brown declares state of emergency in response to dying trees in California forests

After 4 years of drought, California forest trees are dying. An estimated 29 million trees have already died with the potential for continued mortality. The scale of this die-off is unprecedented in modern history. To address the threats from this situation—wildfire, hazardous trees, erosion, increased greenhouse gas emissions—Governor Brown has declared a state of emergency.

In a letter to US Agriculture Secretary Tom Vilsack, Governor Brown states, “California is facing the worst epidemic of tree mortality in its modern history. A crisis of this magnitude demands action on all fronts.”

The Proclamation of a State of Emergency loosens some of the statutes and regulations that would “prevent, hinder, or delay the mitigation of the effects of the drought” and includes the following:

- State agencies, including CAL FIRE, will immediately identify areas that represent high hazard zones for wildfire and falling trees.
- State agencies, utilities, and local governments will remove dead or dying trees in the identified high hazard zones.
- California Air Resources Board and CAL FIRE will work together to expand the practice of prescribed burns and increase the number of allowable days to burn tree waste.
- California Public Utilities Commission will extend contracts on existing forest bioenergy facilities that receive feedstocks from high hazard zones.

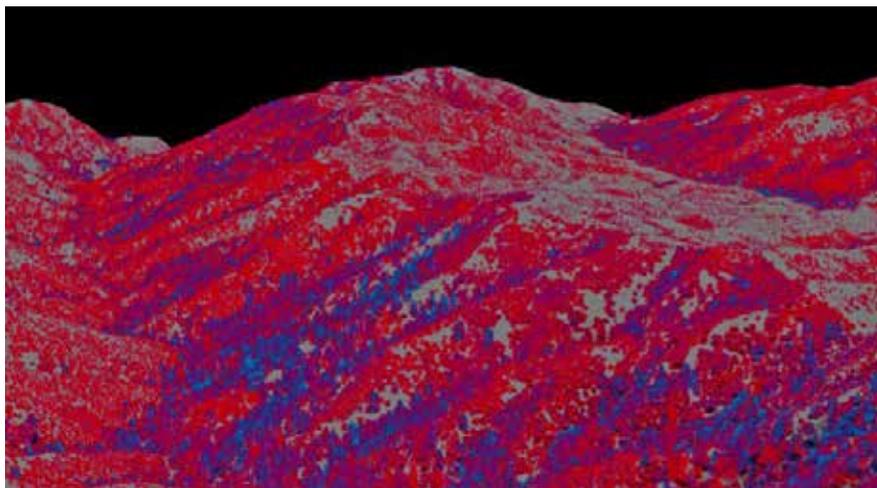


Photo: Carnegie Institution of Science

A topographic image of Pinnacles National Park shows the healthy trees as blue and the most vulnerable trees as red.

- California Energy Commission will prioritize grant funding for woody biomass-to-energy technology development and deployment.
- CAL FIRE and other agencies will estimate biomass feedstock availability, storage locations, and volumes.
- California Department of Resources Recycling and Recovery and CAL FIRE will determine the feasibility for expanded wood products markets in California.
- State agencies will actively monitor tree removal efforts to assess their effectiveness in protecting forest health and strengthening forest resilience.

Read the proclamation at www.gov.ca.gov/docs/10.30.15_Tree_Mortality_State_of_Emergency.pdf