

CALIFORNIA FOREST STEWARDSHIP PROGRAM

Forestland Steward

SPRING 2018

Using Prescribed Fire for Better Forest Health

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Northern California forestland owners learn to use prescribed fire at UC Berkeley's Blodgett Forest



Forestland Steward

Forestland Steward is a joint project of the California Department of Forestry and Fire Protection, Placer County Resource Conservation District, University of California Cooperative Extension and USDA Forest Service to provide information on the stewardship of private forestlands in California.

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Rethinking forest landscapes with changing conditions in mind

New research from the USDA Forest Service suggests California forestland owners and managers need to rethink how they approach reforestation and revitalization of native landscapes in the Sierra Nevada, as well as other forested parts of the state, including oak woodlands and coastal ecosystems.

The unprecedented tree die-off in recent years has occurred because of forest overcrowding and competition from decades of fire suppression, which left trees vulnerable. In addition, drought, pest infestation, climate change and human development have played a role.

Chris Fettig, a research entomologist with the U.S. Forest Service's Pacific Southwest Research Station in Davis, said the large tree loss (in the Sierra Nevada) in 2016 from bark beetles and drought, highlights the indirect, "but profound effects" climate change can have on an ecosystem.

"Foresters and land managers cannot control the amount of rain that will fall in the future," Fettig said, "but they can take steps that will help forests emerge with a better chance of survival."

An unprecedented event

Calling the state's prolonged drought and intense bark beetle infestation, "an event we have not seen in recorded history," Fettig said, "in addition to the size of the area impacted, what makes this event unique is how fast it occurred, the size of the trees involved and the fact that large numbers of people live and recreate in these areas."

With today's better understanding about why such a large tree die-off occurred in the Sierra Nevada and across California, he said forestland owners and land managers are addressing challenges posed by changing climate conditions.

This active response helps ensure forests will continue to thrive into the future, he said.

Deciding which tree and plant species to replant in areas damaged by high mortality, or what trees to plant to survive in warmer conditions in coming decades will play a part

in the survival of some species and the level of resilience in forest ecosystems overall, Fettig said.

"But, the most immediate and effective way to help trees resist bark beetles in times of drought is to manage stand densities prior to drought," said Yana Valachovic, UC Cooperative Extension forest advisor and director for Humboldt and Del Norte counties.

"Actively managing forests through the use of mechanical thinning and prescribed burning can help reduce tree density and create a forest that is more resilient to bark beetle outbreaks," she said.

Research findings in the USDA Forest Service report include:

- Insufficient moisture compromises the trees' ability to produce resin and "pitch out" bark beetles.
- Meteorological forecasts point to the southern Sierras transitioning to a climate that will be drier, making it increasingly important to manage forests for drought and resistance to pests.
- The most effective way to help trees resist bark beetles in times of drought is to manage stand densities prior to drought to reduce competition for vital resources. Less dense stands better reflect the historical state of forests.
- Actively managing forests through the use of mechanical thinning and prescribed burning can help reduce tree density and create a forest that is more resilient to bark beetle outbreaks.

Fettig's research findings are online at: <https://bit.ly/2s28mvT>.

A new brochure from UCCE forestry experts offers quick tips for forestland reforestation after wildfire. It's free and available online at: <https://bit.ly/2sWXPCE>

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State budget adds funding for forest improvement and fire prevention



North-facing view from the 2013 American Fire burn scar in Tahoe National Forest. The site of the nearly 30,000-acre wildfire remains an active forest fire research location and living laboratory for reforestation.

An Executive Order to improve the health of the state's forests and help reduce the threat of wildfires was issued on May 10 by California Governor Jerry Brown.

The action is in response to the worst wildfires in state history, and Brown said measures included in the order will increase forest resilience, improve the ability of forests to capture carbon and systematically improve forest management.

Five of the state's 20 most destructive wildfires occurred in 2017. Last winter's Thomas Fire in Ventura and Santa Barbara counties was the largest in recorded history.

"Devastating forest fires are a profound challenge to California," said Brown. "I intend to mobilize the resources of the state to protect our forests and ensure they absorb carbon to the maximum degree."

Achieving climate goals

Current forest conditions hinder progress toward meeting California's climate goals.

Forests serve as the state's largest land-based carbon sink, drawing carbon from the atmosphere and storing it in trees, shrubs and forest soils.

Brown said in a statement outlining the need for action that even a single major wildfire can immediately cancel those forest benefits.

The state's 2018-19 budget signed in June includes a \$1.4 billion Cap and Trade Expenditure Plan to help reduce carbon pollution and support climate resiliency efforts, including \$210 million for forest improvement and fire

prevention projects.

A Forest Management Task Force convened in June to help implement the order and its accompanying Forest Carbon Plan, which was finalized after more than two years of development and public comment.

Addressing climate change

In May the California Environmental Protection Agency released new findings on the significant and growing impacts of climate change on California.

The Cal EPA indicators report is one of two major state research efforts looking at climate change impacts on the state.

The full indicators report and a 15-page summary are available at <https://bit.ly/2t3UeTB>.

Since 1950, CalEPA researchers found the area burned by wildfires each year has been increasing, as spring and summer temperatures have warmed and spring snowmelt has occurred earlier.

During the recent "hotter" drought, unusually warm temperatures intensified the effects of very low precipitation and snowpack and created conditions for extreme, high-severity wildfires that spread rapidly.

"As California works to both fight climate change and adapt to it, it's critical that we understand the dramatic impacts climate change is already having in our state," said California EPA Secretary Matthew Rodriquez.

The full text of the Governor's May forest health Executive Order is online at: <https://bit.ly/2wx5EDo>.

Key Elements of the Order

- Doubling within five years the total statewide rate of forest treatments, including prescribed fire and mechanical thinning, to at least 500,000 acres per year.
- Launching new training and certification programs to help promote forest health through prescribed fire.
- Developing pilot training programs in forest thinning and biomass processing in areas where there is inadequate labor available to support the work.
- Streamlining permitting for landowner-initiated projects that improve forest health and reduce forest-fire fuels on their properties.
- Supporting the use of innovative new forest products by the building industry.
- Expanding grants, training and other incentives to improve watersheds.

Forestland Conditions Snapshot

- California's forests cover 33% of the state's 100 million acres.
- About 10 million acres of the state's forestland are owned by individuals, with nearly 90% of these forest holdings totaling less than 50 acres.
- About two-thirds of Californians rely on water from the state's headwater forests.
- 129 million trees have died since 2010, creating an ongoing tree mortality crisis.
- Over the past 80 years, forests have been changing in response to fire suppression, climate change, an influx of invasive species and increasing development.

Sources: California's Comprehensive Climate Adaptation Strategy, Tree Mortality Task Force, CAL FIRE State and Private Forestry Fact Sheet.

Collaborative action is key to making large-scale forest health improvements

Calf brandings, barn raisings and farmers helping neighbors with harvest have long been part of life in rural California.

Today the concept of pooling resources to help each other continues. For forestland owners, however, the need to work together is becoming increasingly urgent.

That means greater willingness to find collaborative solutions that cross ownerships, as well as increased sharing of equipment and expertise; as well as staying involved in local forest-health solutions.

Forestry experts say this collaboration is essential if the state's nearly 33 million acres of forestland—about 10 million of those acres privately owned—is going to be returned to healthy, fire-resilient conditions.

Wildfire is an increasing threat across the nation, but last year CAL FIRE said California experienced more than 9,100 wildfires—a number of them intense and catastrophic—across 1.2 million acres.

Because the scope of decline in forest health is severe and wildfire hazards are increasing, cooperation is needed on a much larger scale than in past decades.

Treatments need to be implemented regardless of who owns the land—private owners or government entities.

"This approach helps promote grass roots, cooperative institutions, such as watershed councils," said Jonathan Kusel, Sierra Institute founder and executive director.

Kusel discussed cross-boundary solutions for improved forest health during the May meeting in Sacramento of the Sierra to California All-Lands Enhancement program (SCALE).

Collaborative forest improvement organizations like SCALE have sprung up across the state as the need for a larger framework to conduct landscape-scale forest health improvements has increased.

The Sierra Institute notes that given the variety of wildland and urban forest ecosystems, along with varied land ownership patterns, there's no single prescription that will restore forest health statewide. Plans need to be tailored to the landscape and local communities.

Yosemite Stanislaus Solutions (YSS) is a col-



Improving the vitality and function of California forestland is a top priority for landowners and the public. This healthy meadow and forest scene is near Ruth Lake in Trinity County. Source: Robert W. Coupe.

laborative formed in 2010 to increase the pace and scale of restoration to prevent large wildfires in the Stanislaus National Forest.

The collaborative was in its early stages of development in 2013 when the Rim Fire devastated the region and shifted the focus of YSS from a preventative approach to a reactive one.

Since then the group has implemented several habitat restoration projects with the help of a large volunteer base and has raised \$4.5 million for habitat restoration.

The YSS collaborative model is an approach that can be replicated in other forested areas. Information about YSS is online at: <https://bit.ly/2IQEYT9>.

The Northern California Prescribed Fire Council also uses a collaborative framework for private landowners, state and federal agencies, academic institutions, tribes and coalitions to expand responsible use of prescribed fire in Northern California. See story on page 6.

The council is online at <https://bit.ly/2KBEfIF>

The state's "Safeguarding California Plan" also provides a framework for action to improve forest health. The plan is online at: <https://bit.ly/2nrXhSB>.

Study confirms too many trees rob forest health—and water supplies

Too many trees in Sierra Nevada forests are depleting the state's water supplies, say University of California researchers and National Park Service experts.

In a joint study they conclude an aggressive program of forest thinning and prescribed burns can help recapture lost water supplies, which can help pay for the costs of doing the work.

By opening up the state's forests, billions of gallons of water can be restored to California's water supply each year—water that's now being lost to excessive evapotranspiration (ET).

"Forest wildfires are often considered disasters," said Richard Yuretich, director of the National Science Foundation's Critical Zone Observatories Program. "But in fact, fire is part of healthy forest ecosystems."

Not only do trees use lots of water to carry out basic biological tasks, researchers say trees also act like forest steam stacks, sucking up water stored in the ground and expelling it as vapor into the atmosphere, where it eventually falls back to earth as rain and snow.

Experts say excessive ET harms California's fragile water system, especially during prolonged droughts when forests use more water.

"Overcrowding and the decrease in fire-return intervals are a big part of this problem," said Len Nielson, CAL FIRE Southern Region Vegetation Management Program coordinator.

He said thinning overgrown forests is an important step for improving water supplies.

"The need for forest restoration is being driven largely by the need to lower risk of high-intensity wildfire," said Roger Bales,

director of UC Merced's Sierra Nevada Research Institute and study coauthor. "However, downstream users who benefit from increased water yield represent a potential revenue stream to help offset restoration costs."

Using data from U.S. Geological Survey satellites and the National Science Foundation's Southern Sierra measurement towers, researchers found that from 1990 to 2008, wildfire-thinned forests returned 3.7 billion gallons of water a year

to the Kings River Basin, and as much as 17 billion gallons of water a year in the wetter, warmer American River Basin—water that would otherwise have been lost through ET.

The effect of wildfire over a 20-year period suggests forest thinning could increase water flow from Sierra Nevada watersheds by as much as 10 percent.

The U.S. Forest Service says 6 million to 8 million acres of the total 21-million acres it manages in California are in need of immediate thinning and restoration. Another 58 million acres nationally also are critically overgrown and require treatment.

For California alone, forest restoration costs are estimated at \$5 to \$10 billion. But according to the study, thinning and restoration may help pay for some of the work.

The peer-reviewed article is published in the journal *Ecohydrology* and is online at: <https://bit.ly/2K1rpmL>.

"We have known for some time that managed forest fires are the only way to restore the majority of overstocked western forests and reduce the risk of catastrophic fire," said James Roche, a National Park Service hydrologist and lead author of the new study. "We can now add the benefit of potential for increased water yield from these watersheds." (Source: Jason Alvarez, UC Merced)

"Increased water yield can help offset some forest restoration costs."

*Roger Bales, UC Merced
Sierra Nevada Research
Institute*



CAL FIRE Tree Mortality Task Force equipment helps with a thinning and brush clearing project. Source: CAL FIRE

Protecting California's Water Supply

The American Forest Foundation highlights the role California's private forestland owners play in protecting Sierra Nevada watersheds in a new report.

Key Findings

- Sierra Nevada watersheds provide more than 60 percent of the state's water supply.
- More than 7 million acres of private and family-owned forestland across California are at wildfire risk.
- Government agencies, along with universities and conservation groups, have launched initiatives to connect private landowners with technical and financial assistance.

The full AFF report is online at: <https://bit.ly/2I5MtBM>

See page 10 for a list of experts familiar with a range of forest planning and assistance programs.

Prescribed Fire

Workshop outlines new options for landowner fuels-management projects to reduce fire risk



Forestland owners attending the Prescribed Fire Workshop at Blodgett Forest Research Station near Georgetown get a run down on equipment used to manage prescribed fire from CAL FIRE equipment experts with the Amador El Dorado Unit Training Bureau.

“We’re on the cusp of major change in forest management, particularly as it relates to the use of prescribed fire,” said Scott Stephens, professor of fire science at the University of California, Berkeley, during opening remarks at the May “Prescribed Fire on Private Lands” workshop.

The two-day event attended by California forestland owners and managers was held at the university’s Blodgett Forest Research Station near Georgetown. Similar workshops are being offered by University of California Cooperative Extension staff around the state. (See page 10 for a directory of local forestry experts who can discuss prescribed fire and advise on upcoming events related to this forest management tool in local areas.)

“I’m here because I’m looking for ways to lessen the fuel load on lands I manage,” said Tehachapi ranch manager Frank Brook. “We have about 2,500 acres of timber on the ranch, mostly pines, white fir and oaks. And, we’ve had four wildfires on the property in the past eight years.

“I’m looking for ways to reduce fuel loads and ensure there are emergency evacuation routes open through the ranch for surrounding neighbors. And I’m always looking for ways to keep our business viable,” he said.

Fire is a normal forest function

During the workshop’s opening session, Stephens discussed fire intervals in the Sierra Nevada, noting that at the Blodgett Forest fire regularly returned in four to five year intervals between 1750 and 1900. Then it stopped its natural occurrence when fire suppression was introduced, according to conclusions based on tree ring studies.

He said fire intervals vary depending on a variety of factors—length between fires, season, tree spacing, fire magni-

tude, vegetation types and location—but fires have occurred regularly in California forests across millennia.

“If our society doesn’t like the outcomes from recent fires and the extensive drought-induced tree mortality in Sierra forests, then we collectively need to move beyond the status quo of fire suppression,” said Stephens.

“It will take time to improve forest conditions, perhaps a generation.”

Prescribed fire advantages

Presenters throughout the event, which culminated in attendees participating in a carefully planned prescribed burn, explained aspects of using fire to reduce wildfire risk and improve forest health and resilience.

They explained the advantages of an overall system of forest management that mimics the regular return of fire, not merely how to set up a one-time prescribed burn.

Experts say prescribed fire is useful for a wide range of management objectives, including fuels reduction, habitat restoration, invasive species control, and more. It can be used on its own or in conjunction with other forest management practices like thinning.

Currently about 50,000 acres a year in California are treated with prescribed fire, with 90 percent of burns occurring on public land. But, that hasn’t always been the case.

Early records indicate Range Improvement Program burns were conducted by CAL FIRE as early as 1945. Historical records show acres burned during the period 1949 to 1953 averaged 141,400 acres per year, with controlled burns carried out in cooperation with cattle ranchers to improve rangeland.

Today the Vegetation Management Program, authorized by legislation passed in 1980, is a cost-share program that allows

public and private landowners to participate in wildland fuel reduction projects.

The program uses prescribed fire to enhance forest health, although in recent years CAL FIRE has also used mechanical vegetation treatment. Background on CAL FIRE's Vegetation Management Program and how to apply for a cost-share grant are online at <https://bit.ly/2rO6qXM>

In addition to the VMP program, University of California Cooperative Extension advisors Lenya Quinn-Davidson and Jeff Stackhouse outlined a number of other vegetation management options.

Quinn-Davidson said that although there are some obstacles to using prescribed fire, like burn windows and access to training, many of the most commonly cited issues are based on a lack of information.

"There are some commonly held myths about prescribed fire we need to address," said Quinn-Davidson. "People say liability and permits are too big a hurdle in California, but they feel differently once they get more detail and learn about options."

Planning for permits

Basically, there are only two permits needed for prescribed fire, she said, adding, "Many landowners don't know this and don't know how to apply."

A year-round air quality permit is required by local Air Quality Districts and a burn permit from CAL FIRE is required during declared fire season, which varies by year and area.

More complicated than acquiring the permits is the planning that goes into setting up a prescribed burn. Blodgett Forest manager Rob York described more than a year's work to set up burns on the research center's land, including the workshop's prescribed burn in May.

Planning included mapping burn areas, removing trees and heavy brush, disposing of biomass, masticating woody material, hand cutting perimeter lines for fire control and organizing equipment and tools, as well as frequently consulting detailed weather forecasts as the burn date got closer.

The workshop covered a lot of technical information about how to manage a prescribed burn and the associated risks and costs, El Dorado forestland owner Benjamin Sher said.

"But, clearing out brush and opening up the forest to create a park-like setting also preserves the aesthetic values for the area where my property is located," said Sher, whose property is in Apple Hill, an area known for its successful agritourism.

"As a landowner, it seems to me the longer you wait to reduce the fuel load the higher the risk," he said.

"Our land is our primary asset so naturally we want to take care of it. Without help to clear the growing fuel load, smaller landowners are highly challenged. Getting neighbors together to work on prescribed fire projects can be a big help in protecting all of us."

Presentations from the workshop are online at: <https://bit.ly/2kiCkaJ>.



Workshop attendees in safety gear get direction from Blodgett Forest manager Rob York, center.



Prescribed Fire Workshop participant uses a drip torch to start a slow moving burn.



Flames quickly died down during the carefully planned prescribed fire treatment.



Members of the holding crew coming off the prescribed fire's perimeter line.

Landowner options for reducing fuel loads

- Hire private contractors specializing in prescribed burns, such as Firestorm <https://bit.ly/2rQVNU5>. Check with experts on page 10 for local contractors.
- Join/create a Prescribed Burn Association with other landowners and local agencies. Check with Lenya Quinn-Davidson, Area Fire Advisor, (Humboldt, Trinity, Siskiyou, Mendocino), lquinndavidson@ucanr.edu for local associations.
- Use managed/targeted grazing, which means hiring livestock owners to strategically graze animals.
- Hire a certified "burn boss." California legislation to set up a certification program for burn managers (burn bosses) is currently under consideration. That may increase the number of qualified people available to help conduct prescribed fire.

Careers in forestry

Jobs held by college graduates with forestry and natural resources degrees are too numerous to list.

Many college graduates, however, follow traditional paths as foresters, park rangers, conservation biologists, scientists and technicians.

Some become managers for private industry, government agencies, consulting firms or schools/universities.

Others start their own businesses.

The salary ranges listed below are national averages, not adjusted for higher cost-of-living pay in California.

Starting Salaries

- Bachelors Degree
\$25k - \$60k
- Masters Degree
\$35k - \$80k
- Doctoral Degree
\$50k - \$90k

Entry-level pay varies depending on: level of education, area of specialty, where in the U.S. or the world graduates choose to work.

Source: <https://bit.ly/2MwTqhh>

The forest becomes a classroom for students interested in logging jobs



Students talk with plant and wildlife biologists about the role these professions play in logging operations.

The outlook for good paying forestry-related jobs in California has greatly improved compared to opportunities in past decades. That's the message Ponderosa High School students got while participating in a career-day event sponsored by the Sierra-Cascade Logging Conference.

During an introduction to the day's activities held in May at the University of California, Berkeley's Blodgett Research Forest near Georgetown, presenters said increased demand for forestry workers in Northern California is due in part to forest conditions—massive tree die-off, drought, invasive pests, wild fire and climate change.

Many entry-level logging jobs only require a high school diploma, with on-the-job training provided, they said.

They also cited a growing need for college educated, tech-savvy workers—whether performing scientific research in the laboratory or managing computer-controlled equipment.

While the students learned that many traditional jobs remain, the logging experts stressed that forestry and forest products career paths have expanded to include many new science-based occupations.

"This trip to the woods gave me a sense of the possibility of finding work here," said Grant Young, a junior at Ponderosa High

School. "One guy I talked to said to meet him at his truck after the forest tour if I wanted to fill out a job application. I was surprised by that. He had the applications with him."

At nearly every stop, students asked the working professionals the same question: "How much do you make?" They usually got candid answers.

But, the U.S. Labor Department reports that tree fallers make \$60,000 to \$80,000 a year in Northern California, while heavy equipment operators make about \$60,000 a year. Conservation scientists and foresters make about \$70,000 a year. Entry-level workers make about half of that.

The outlook for career advancement is strong the department said, with jobs for environmental scientists and forestry specialists projected to grow 11 percent from 2016 to 2026, faster than the average for all timber-related occupations.

The high school field day is among the many educational events the conference holds throughout the year to attract young people to the timber industry and create wider public understanding of logging and forest management.

Logging contractor Jeff Holland of CTL Forest Management in El Dorado County said, "We've got to get back to managing our forests and we need good workers and a public that understands what we're doing. That's why I'm here today."

Information about student field days and career orientation is available online at:

<https://bit.ly/2HOKEx7>

Wildfire recovery guide highlights restoring land with native plants

An easy-to-use booklet, created by the California Native Plant Society in response to the 2017 wildfires in Napa, Sonoma and Mendocino counties, aims to help local property owners in the wildland-urban interface.

The 64-page California Native Plant Society Fire Recovery Guide is designed to not only support revegetation of land in the North Bay, it also can benefit landowners in other fire-prone areas of the state.

The guide includes checklists for land care, erosion control and reforestation tips, especially in areas with oaks that have potential statewide application.

Noting that fire is a natural part of California's ecosystems, CNPS leaders said expanding development in wildland areas makes fire a complicated and daunting force to address.

"We hope this resource will encourage conversations about how we can live with fire in an increasingly fire-prone state, while also ensuring there is a place for the beautiful plants and incredible wildlife that make living in California so special," said CNPS Executive Director Dan Gluesenkamp.

Finding answers and solutions

He said the guide is a collaborative effort that incorporates information from some of the best fire experts in the state.

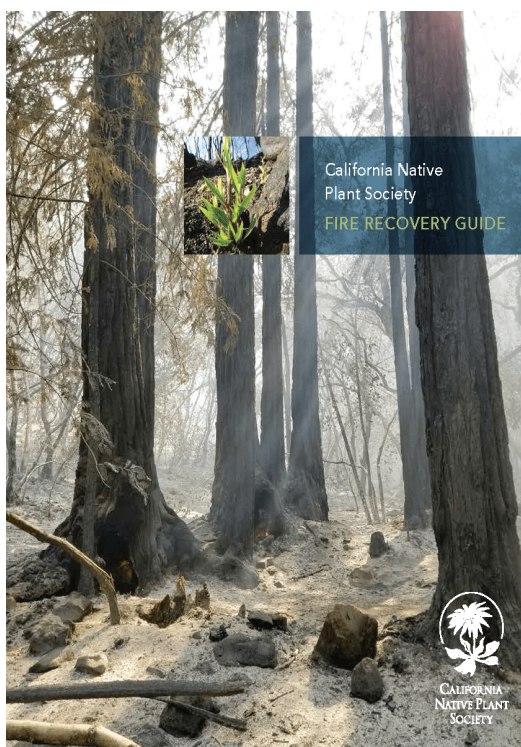
"Following devastating fires like these, people are faced with many questions including what to do on their land in the recovery process," said Julie Evens, a vegetation ecologist and director of the CNPS Vegetation Science Program.

"This guide is a compilation of science-based information to help people tackle issues like erosion and tree damage," she said. "It will help guide restoration and landscaping plans, and help prepare for future fires."

Sections cover land care and recovery, erosion control, fire preparedness, seeding and setting a process for decision-making to help keep projects on track.

A question that comes up a lot, she said, is how to determine if a burned tree is dead or at risk of failing.

Looks can be deceiving, the guide notes. Many native trees and large shrubs are adapted



To order a free copy of the guide or download the online version, go to: www.cnps.org/fire-recovery.

to fire and can recover over time, sometimes by re-sprouting at their branches and bases during the next spring.

However, if a compromised branch or tree poses a risk to people or property, experts recommend consulting a Registered Professional Forester or an arborist about removal.

Another common question is whether fire can damage soil fertility and whether ash can have a negative affect on future soil health.

In general, the experts say fire can actually have a positive impact on soil formation and fertility, removing thatch and litter while returning nutrients to the soil. But, the heat of the fire and its duration can limit how much fertility increases.

The non-profit plant society recently provided more than 17,000 free copies of the guide to property owners in last fall's Wine Country wildfires and Gluesenkamp said the group expects to distribute thousands more.

Wildfire recovery guides for working forestland

The free "Forest Stewardship Series" produced by University of California experts is a 25-part online publication that provides forestland owners with information they need to manage, enjoy and profit from their lands.

The information is designed to help formulate and implement strategies for achieving stewardship goals.

Find the complete series online at: <https://bit.ly/2JE4got>

Series Sections particularly helpful after a wildfire or major tree die-off include:

Section 7: Forest Regeneration <https://bit.ly/2HWZGwF>

Section 9: Recovering from Wildfire: A Guide for California's Forest Landowners <https://bit.ly/2sd9VXj>

Section 15: Wildfire and Fuel Management <https://bit.ly/2yKkpUw>

Financial options for Forest landowners

Sierra Nevada Conservancy offers a comprehensive guide to funding opportunities to support fuel reduction projects on public and private lands.

The listed grants, with links to more information on how to apply for funding, focuses on projects that remove excess trees and brush for forest health.

There also are grants that help promote wild-fire protection, water quality and stream flow enhancement.

Because of the currently unhealthy condition of Califor-

nia forests, there are a growing number of grants and cost-share opportunities available to private forestland owners.

The Sierra Nevada Conservancy funding guide is online at: <https://bit.ly/2s146wK>.

Grants focused on vegetation removal for meadow, riparian or other habitat restoration can be found in the 'Habitat Restoration and Enhancement' and 'Riparian, Wetland, and Aquatic Habitat' funding research memos on the conservancy's website.

Tax Advantages

Forest recovery and reforestation projects have tax implications.

And, since the federal tax code overhaul in December 2017, tax code changes may have implications for forestland owners in 2018.

Forestland owners who've suffered losses may wonder how these losses will be recognized in the future for tax purposes and for investment planning.

The USDA Forest Service Forest

Taxation and Estate Planning Program offers help to private forest landowners, foresters, loggers and timber businesses as they navigate the new tax rules.

Find the latest information on federal taxes and rules related to forestland owners online at: <https://bit.ly/2IT1sVL>.

The University of California Cooperative Extension also offers a free guide to "Taxation and Estate Planning," online at: <https://bit.ly/2x2vAXJ>



Good funding strategies can help open forests for better health.

Source: Robert W. Coupe.

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CAL FIRE Forestry Assistance Specialists (FAS)

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

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Calendar

September 15

10th Annual Great Sierra River Cleanup

Location: Throughout Sierra Nevada watersheds

Information: Contact Theresa Burgess by e-mail at: GSRCleanup@sierranevada.ca.gov

Note: Find information on previous year's Cleanups online at: <http://sierranevadaconservancy.ca.gov/our-work>

November 5-7

Continental Dialogue on Non-Native Forests Insects and Diseases

Location: Irvine, California at the Hotel Irvine, 17900 Jamboree Rd., Irvine CA 92614

Information: Partner event with Arbor Day, as part of Partners in Community Forestry. Program information is online at: <https://bit.ly/2IxHKID>

Note: Promotes collaborative action to abate the threat to North American forests from non-native insects and diseases.

CFIP offers project-support funding

CAL FIRE's California Forest Improvement Program (CFIP) provides cost-share funding to private forestland owners.

Funds support eligible forest improvement projects, including management plan development, site preparation, reforestation, fuels treatment and habitat rehabilitation.

Landowners with less than 20 acres are now eligible, if their land is zoned for Timber Production (TPZ). CFIP funds projects on private land up to a maximum of 5,000 acres.

The property must be able to support at least 10 percent native tree canopy. There's no cap on project funding. Also, updated cost-share rates increased in July 2018. Land owned under a conservation easement also is eligible.

The program includes the expertise of a Registered Professional Forester and CAL FIRE Forestry Assistance Specialists who will work with landowners to complete the work.

Full details are online at: <https://bit.ly/2yOrQd4>

Board of Forestry and Fire Protection 2017-18 Schedule

The California Board of Forestry and Fire Protection's mission is "to lead California in developing policies and programs that serve the public interest in environmentally, economically and socially sustainable management of forest and rangelands, and a fire protection system that protects and serves the people of the state." The Board meets almost every month to discuss forestry issues and make decisions. The public can attend the meetings. Find online information is at <http://bofdata.fire.ca.gov>.

August 21-22	Resources Building, Sacramento
September 25-27	Travel
October	No meeting
November 6-7	Resources Building, Sacramento
December 4-5	Resources Building, Sacramento

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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; e-mail: Stewart.McMorrow@fire.ca.gov. For address changes, send this box or contact Stewart McMorrow...be sure to reference *Forestland Steward* newsletter.

NOTE: For address updates or to make comments or suggestions about this newsletter, please contact Stewart.McMorrow@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 Stewart.McMorrow@fire.ca.gov or mail your request directly.

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Cal EPA offers tips for smoke management

Fire is a natural, valuable tool in forest management. Prescribed fires are used to clear logged areas for planting, reduce fire hazards, control disease and remove unwanted vegetation. It's an important forest management tool.

But open burning produces smoke. When not carefully managed, smoke can become a nuisance to neighbors and can impact public health. Smoke can also reduce visibility on roadways and cause accidents.

CAL/EPA offers a handbook on air quality regulations and tips for smoke management. The agency says the state's chief sources of air pollution in rural areas are fugitive dust, residential wood burning and open burning.

Prescribed fires, when properly conducted, are the most visible and obvious source of air pollution in rural areas, but not the primary source. The agency's "Forest Management Burning Handbook," spells out air quality regulations, permitting requirements, smoke management strategies and provides a burn check list.

The handbook is online at: <https://bit.ly/2rVQ7bC>.

