

CALIFORNIA FOREST STEWARDSHIP PROGRAM

Forestland Steward

SUMMER 2017

Restoring Forest Health

Inside

- 2 Planning for Change
- 4 Salvage Logging
- 5 Finding Funds
- 6 Forests of the Future
- 12 Waste Not . . .

*Tioga Pass, along Snow Creek Trail,
Gert Hochmuth Adobe Photo Stock*



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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Employing Art & Science in the Forest

What California's forests of the future will look like and how they will operate as ecosystems is a matter of great interest to scientists and policymakers. But no group has more at stake in the future than private forestland owners.

Experts say the forests around us are undergoing a rapid transition to a state as yet undetermined. They caution against trying to restore forests to conditions of the past.

Instead, they urge landowners to think about managing forward—recovering forest health and creating more resilient ecosystems.

And, while the majestic pine forests of the Sierra Nevada are in peril, experts also say forests in other parts of the state are experiencing higher tree mortality.

This unprecedented statewide event, most visible in the Sierra Nevada, has been attributed to historical land management practices, including fire suppression; and drought, climate change and insect outbreaks, to name a few.

In this issue

We make the case for regenerating forests after a disaster using the latest science and collaborating with a variety of experts (page 10).

There are professionals to help guide you through the recovery process and help find cost-share funds to make it more affordable (page 5).

Beyond removing dead trees and reducing fuel levels (page 4), there are decisions to be made, starting with your vision for your forest, all the way through translating that vision into decisions that define the species, spacing and other recovery steps on your land.

And the work doesn't end there. It's more than the trees. In the 21st century, concerns from outside our forestlands include climate change, shifting hydrologic patterns and the expectations of people seeking to enjoy thriving forestlands.

That means changing regulations and public policy. But, you don't have to navigate these things alone. Given the scope of the disaster, nobody expects every forestland owner to be an expert. Regenerating a forest ecosystem is complicated, technical and a long-term undertaking.

Registered Professional Foresters (RPFs) are jacks-of-all-trades, trained in many aspects of forest management. Your RPF knows a lot about the technical and practical aspects of rebuilding forest health, including site prep, how

to determine density, ordering, planting and the like

It's important to remember that you, the landowner, supply the vision and make the ultimate decisions. Your goals and objectives drive your regeneration project.

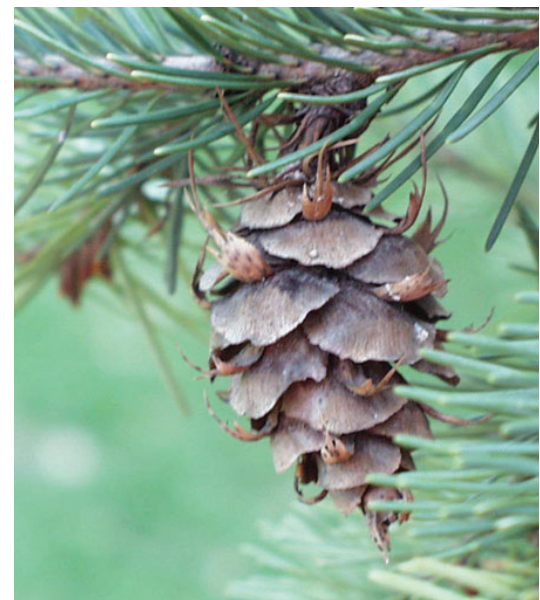
But, the longer you wait to do the work, the more competing vegetation will establish, often increasing the fire hazard. It can also make future reforestation more expensive, require more intensive treatments and decrease planting survival. The best time to plan replanting is now.

For background, look to [Forestland Steward](#). We've developed a robust library of information about forests, forest management and other forest-related topics during the past 20 years.

Speaking of change

After 20 years of dedication to the interests of California's private forestland owners, *Forestland Steward* Founding Editor Laurie Litman is retiring. The archive of user-friendly information she has compiled during two decades of research and writing is a storehouse of knowledge created specifically for her readers. We gratefully thank Laurie for her service.

Environmental writer, editor and photographer Kate Campbell, who most recently served as an assistant editor for California Farm Bureau Federation's news weekly *Ag Alert*, will take on editing duties for future issues of the *Forestland Steward*.



Aerial survey detects increased tree mortality

Prolonged drought, overstocked forests and higher-than-average temperatures in California are responsible for escalating tree mortality on forestland, experts say.

Pest infestations continue to play a major role in tree loss on private and public lands. That's the conclusion of the 2016 "California Forest Pest Conditions Report," released in June.

Researchers found about 62 million dead trees across 4.3 million acres in 2016, compared to 2015 when about 29 million dead trees were found over 2.8 million acres.

Overall, the annual aerial survey conducted by the U.S. Forest Service found an estimated 102 million trees have died in the Sierra Nevada since 2010, when California's dry conditions began.

More than 50 percent of the dead trees mapped in 2016 were on the Sequoia, Stanislaus and Sierra national forests.

Statewide, 5,762 fires consumed 147,373 acres of forestland last year, killing millions of trees and leaving millions more weakened and susceptible to insects and diseases, the report said.

Bark beetles continued to attack millions of drought-stricken trees, particularly in the central and southern Sierra Nevada range, as well as coastal areas and in parts of Southern California.

The survey found mortality was most intense in low-elevation pine and mixed conifer forests along the southern Sierra Nevada range. But in 2016, extensive mortality also was found much further north and at higher elevations.

The aerial assessment included all national forests and forested national parks, along with other federal, state, and private lands. Findings of worsening pest infestations include:

- Over 4 million acres with elevated levels of tree mortality due to bark beetles or wood borers, up from 2.5 million acres in 2015 and 820,000 acres in 2014.
 - Fir engraver beetle-related mortality increased to 2.65 million acres, up from 1.21 million acres in 2015 and 460,000 acres in 2014.
 - Western pine beetle-related damage to ponderosa pine tripled tree species mortality to more than 2 million acres.
 - Mountain pine beetle-related mortality increased dramatically—from 600,000 acres to 10.9 million acres.
 - Acres with Jeffrey pine mortality jumped from 774,000 acres to almost 8.2 million acres.
- Areas where pest infestations improved include:



Crew clears dead trees in Toulumne County, one of the hardest hit tree mortality areas of the Sierra Nevada. Source: Mi Wuk Area News

- Ips beetle-related pinyon pine mortality decreased from 238,000 to 30,000 acres due to a lack of viable hosts in areas with previous intense mortality.

- Drought-related gray pine mortality decreased from 40,000 acres to 6,700 acres.
- Coulter pine mortality caused by western pine beetle and Ips decreased substantially from 41,000 acres to 18,000, due primarily to lack of viable hosts in many of these isolated stands.

Researchers noted that mortality of incense cedar, sugar pine and other conifer species profoundly affected by the drought are likely underrepresented in the aerial survey results because they're typically minor components of mixed-conifer stands.

The annual California Forest Pest Conditions Report for 2016 is online at:

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd537991.pdf

The Forest Pest Database makes searching for pests, hosts and detections easier for land managers and the public. Information on how to access the database is online at:

<https://www.fs.fed.us/foresthealth/technology/>

Salvage-logging study finds little long-term harm to forest plants



A crew chips slash during removal of dead trees in Sierra National Forest. Source: USFS

Forest regeneration is a long-term commitment requiring years of oversight.

Whether logged or unlogged, researchers find there's not much difference in forest plant regeneration after a wildfire.

Although vegetation regrowth after salvage logging has long been discussed by forest owners and managers, U.S. Forest Service scientists report there doesn't appear to be much impact.

The finding results from more than a decade of studying plant regeneration in the wake of California's 2002 Cone Fire, which burned through the agency's Blacks Mountain Experimental Forest. The event allowed scientists to conduct large-scale research on regrowth after burned trees were salvaged.

They found new vegetation in forested areas severely burned by the fire and later logged were relatively similar in their recovery to areas burned, but untouched by logging equipment.

The findings shed light on how vegetation responds to severe wildfire and whether disturbances from salvage logging in the aftermath of wildfire affect regrowth.

Salvage logging refers to the practice of harvesting fire-killed trees ("salvage") to extract economic value from them before the wood decays.

The study notes a modest difference between logged and unlogged areas for some shrubs that researchers attribute to timing of logging.

Forest experts suggest the differences observed within the shrub communities could stem from the plants' reproduction cycle and timing of the logging operations.

"The three native shrub species that declined in abundance with logging (prostrate ceanothus, snowbrush ceanothus and greenleaf manzanita) have seeds triggered to germinate by heat or char from fire," said Eric Knapp, a research ecologist with the Forest Service and study co-author.

Logging occurred more than a year after the fire, which would have coincided with the seedling stage of the new shrubs, making them vulnerable to surface disturbances, he said.

"It's possible the effect on shrubs might have been avoided if logging had been done soon after the fire, prior to seeds germinating," Knapp said.

Nearly a decade after being logged, researchers say vegetation in forested areas severely burned by the 2002 Cone Fire is relatively similar to areas untouched by logging equipment.

"Longer-term research is finding that understory vegetation might not be as substantially impacted by post-fire logging as originally feared," said Martin Ritchie, Forest Service research forester and study co-author, "especially when care is taken to minimize soil impacts."

Researchers suggest these findings may help settle debates about pros and cons of post-fire management and allow them to turn to topics such as snag habitat and woody fuel levels that are clearly impacted by salvage harvest.

The study, "Response of understory vegetation to salvage logging following a high-severity wildfire," is online at www.fs.fed.us/psw/publications/knapp/psw_2016_knapp004.pdf.

Plan ahead to tap program funding and support next year's forest health projects

Private forestland owners are encouraged to “keep their conservation-planning hats on” as they continue to address tree mortality on their land. There are several state and federal grant programs that may help private landowners with reforestation efforts.

For example, the California Forest Improvement Program provides funds to forest landowners for management plans, professional services, site preparation, tree planting, thinning, pruning, land conservation, and fish and wildlife habitat improvement.

Apply year round

California Natural Resources Conservation Service public affairs director Anita Brown said, “We encourage private forestland owners to take a year-around approach to conservation planning and work with advisors and funding agencies well in advance of starting projects.”

In fiscal year 2017, she said California NRCS is investing more than \$14 million to address tree die-off and catastrophic wildfire. In 2016, the final investment was nearly \$13 million and in 2015 the total was \$11.3 million.

For comparison the state's NRCS invested \$8 million to \$10 million in the previous five years. Federal funding, however, has not yet been finalized for NRCS grants for next year.

Funding has been available through the NRCS Environmental Quality Incentives Program. Note that an approved NRCS Forest Management Plan for tree mortality does not include tree removal on lands within 100 feet of homes.

Information about the EQIP program is online at: www.nrcs.usda.gov/wps/portal/nrcs/detail/ca/programs/financial/eqip/?cid=nrcseprd440606

Landowners with dead trees on non-industrial, private conifer lands in Amador, Calaveras, El Dorado, Fresno, Kern, Lake, Los Angeles, Madera, Mariposa, Nevada, Placer, Riverside, San Bernardino, San Diego, Tulare and Tuolumne counties may be eligible for future financial assistance.

Program managers advise landowners to familiarize themselves with programs and watch

for updates on funding status.

Plan ahead

The federal Emergency Forest Restoration Program helps owners of non-industrial private forests restore forest health damaged during natural disasters. EFRP does this by authorizing payments to owners of private forests to restore disaster damaged lands.

Local U.S. Department of Agriculture Farm Services Agency offices implement EFRP for all disasters, with the exceptions of drought and

insect infestations. In the case of drought or an insect infestation, the national FSA office authorizes EFRP implementation.

A recent webinar for Forest Stewardship program managers outlines how the program works. Find it online at: <https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/emergency-forest-restoration/index>

[programs-and-services/disaster-assistance-program/emergency-forest-restoration/index](https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/emergency-forest-restoration/index)

Two major cost-share programs serve California forestland owners: CFIP (California Forest Improvement Program) and EQIP (Environmental Quality Improvement Program)



Blue Canyon from Dinkey Road, near Shaver Lake. Dead trees spread across the canyon on private and USFS land. Source: California Society of American Foresters

Resources and contacts

2017 CFIP User's Guide

http://calfire.ca.gov/resource_mgt/downloads/CFIP/CFIP%20User's%20Guide%202017.pdf

Contact your local NRCS office

<http://offices.sc.egov.usda.gov/locator/app?state=ca>

California Cooperative Forest Management Plan

(good for CFIP or EQIP) http://calfire.ca.gov/resource_mgt/downloads/CFIP/Rev_CaliforniaCooperativeForestManagement_070512_SGS.pdf

Contact a FAS

(Forestry Assistance Specialist)

http://calfire.ca.gov/resource_mgt/downloads/ForestAdvisorList.pdf

Neighbors working together on larger projects also are eligible for funding assistance, if the projects benefit the watershed as a whole. Contact local RCDs or NRCS representatives to join local landowner projects.



Forests of the Future

Rethinking a rapidly changing landscape

After nearly a decade of low precipitation and severe drought, massive wildfires, pest attacks and climate change, California's forests are in crisis. Forestry experts say the major ecological disruption currently taking place in the state's woodlands means they will look and operate differently into the next century.

This consensus was presented by researchers and scientists during a day-long symposium in Sacramento. The event, sponsored by federal and state natural resources agencies, reviewed lessons learned from extreme drought and ongoing tree mortality in the Sierra Nevada.

"Managing forests going forward won't be about restoring them," said Cynthia West of the U.S. Forest Service Office of Sustainability and Climate. "It will be about recovery and transition of the natural environment into new ecological systems."

The scientific event in July was attended by more than 200 scientists and forest management experts, as well as representatives of state agencies, environmental groups and the public. A focus of discussions was how past events are informing forestry management practices in California going forward.

"We need to talk about the impacts of these changes and find solutions for ecosystems that are shifting and we will all have to lean in to rethink how we manage our forests," West said.

California forestland owners will be coping with continued and hotter droughts, greater pressure on water resources needed for forests, but also managing for downstream agriculture and urban environments, experts said. In the process, they will need to contend with profound changes to forests and rangelands, including species extinctions.

With about a third of the state covered in forests, experts noted the rapid ecosystem changes taking place will require "more than a village to address the problems." They say managing a landscape change of this magnitude will require statewide effort and involve a high degree of collaboration among stakeholders.

In some cases the current tree mortality crisis in California is tearing apart the fabric of forest communities that have been strained by heat waves, mega fires, pest infestations and now major storm damage, said Jeff Marsolais, U.S. Forest Service forest supervisor for the Lake Tahoe Basin Management Unit.

"Whole tracts of land have been damaged," Marsolais said. "We're experiencing one of the most ecologically significant events in the past hundreds of years. The causes are complicated, but it represents an opportunity to learn and share how we want forests to look down the road and into the future."

Of the nearly 33 million acres of forest in California, about 40 percent are owned by families, Native American tribes, or companies. Industrial timber companies own about 5 million acres, but about 9 million acres are in the hands of individuals. Nearly 90 percent of these holdings include less than 50 acres of forestland, with private ownership interspersing public lands.

During the symposium, forestry experts and researchers repeatedly noted the role private forestland owners play in addressing the current tree mortality crisis and the role they will play in developing the forests of the future. What's needed, they said, is private and public land owners working in collaboration to build a path forward to forest health.

U.S. Forest Service ecologist Marc Meyer said among the reasons for the current tree mortality crisis is a "loss of forest system integrity due to increased stand density, loss of species diversity, hotter droughts and exploding bark beetle populations." He also noted the detrimental effects of past logging practices and fire exclusion.

But, researchers stressed that while forests are transforming in response to major ecological disturbances, they will continue to exist in the future. But, how they will look and operate as landscapes will depend on how they adapt to change and how they are managed.

"Forests of the future will have to adapt to a warmer, drier climate," said Helge Eng, CAL FIRE deputy director for resource management. "We are revisiting management practices to better predict future changes, and perhaps we should be looking at more robust management strategies, in the sense of hedging our bets."

He suggested that to achieve "resilience" in forests, land owners may need to rethink what resilience means: treatment strategies, fuels reduction, thinning." And, he added, "There's a

place for selling logs to pay for this work.

“There’s not enough funding available to make an appreciable difference at the landscape level,” he said. “We need more funding.”

The Sierra Nevada Conservancy’s Bob Kingman said in the future “we need to increase the pace and scale of response” to ecological changes to forest landscapes. He said his agency is focused on collaborations that pull stakeholders together to take action to more cohesively address forest health threats.

In a rapidly changing environment, experts stressed the need for more research. They said adapting current forest management practices to climate change will require better science and new tools to help identify areas of potential opportunity for addressing forest threats.

Becky Estes, USFS Central Sierra ecologist, said helping forest managers understand how to best support particular vegetation types based on ecological conditions will also help guide post-fire and die-off recovery efforts.

Planned Adaptation also will help over the long-term to promote improved forest structure, function and composition through application of

targeted treatments, such as prescribed fire and mechanical thinning.

As tree mortality moves north along the Sierra Nevada range, she said the most urgent research needs to focus on better understanding of which tree density and spatial arrangements foster greater forest resilience to drought and fire.

Prescribed burning continues to be seen as a valuable silvicultural tool to increase resilience, experts said, but when to use it and how to control it needs further understanding.

“Fire is one of the main tools of forest management,” said Kim Carr of the National Forest Foundation. “We need to streamline regulations for private, working forests to do this work and find a way to synchronize efforts with public land managers.”

The problem, Carr said, is that “our landscape is changing faster than our institutions. We need to learn how to be nimble.”

Power point presentations from the event are online at: <https://www.climatehubs.oce.usda.gov/content/california-drought-and-tree-mortality-symposium>

Forests and families at risk

- **11.3 million people live in wildland-urban interface areas, about double the combined populations of Fresno, Los Angeles, San Francisco and San Jose.**

- **California has the nation’s largest population within or adjacent to wildland areas.**

- **During the past five years, California has seen an average of 94,000 more acres burn yearly in large wildfires than was typical in the 1970s.**

- **Wildfire season is now an average of 75 days longer in the Sierra Nevada than in the 1970s.**

- **About 20 million acres of forestland in the state with high wildfire threat would benefit from fuels reduction.**

(Source: Tree Mortality Task Force Recommendations, April 2017)



Quick Notes

- ***Trees in the driest, densest stands are most vulnerable to dying during extreme drought.***
- ***Effects of extreme drought on forests can take years to surface.***
- ***High tree mortality rates are likely to continue as drought effects linger.***

Unprecedented tree die-off will continue

Why do some trees die in a drought and others don't? And how can we predict where trees are most likely to die in future droughts?

Scientists from the University of California, Davis, examined these questions in a study published in the journal "Ecology Letters."

Using climate data and aerial tree mortality surveys conducted by the U.S. Forest Service during four years (2012-2015) of extreme drought in California, they found that when a drought hits a region, trees growing in areas that are already dry are most susceptible.

The research also showed that the effects of drought on forests can take years to surface, suggesting that such effects may linger even after the drought has ended.

The study said trees in the driest and densest forests are the most at risk of dying in an extreme drought. In California, that makes crowded stands of trees in the Southern Sierra Nevada the most vulnerable in the state.

Experts said the concept is simple: Trees in dense forests are like multiple straws competing

for the same glass of water. In wet climate conditions, that competition goes largely unnoticed. But when it's dry, few are able to quench their thirst, setting the stage for mass mortality.

"Our analysis found out how much drought a tree can take," said UC Davis researcher Derek Young. "If forest managers want to get the biggest bang for their buck in reducing forest vulnerability to drought, this study suggests they should focus on the densest stands in the driest areas. And when we reestablish forests burned by severe wildfire in these areas, we should plant at lower densities from the beginning."

Young said tree mortality can take several years to respond to drought. Such a delayed response is often observed in studies of drought stress, and said, "The existence of this delayed response hints that we are likely to observe high (tree) mortality well into 2017 and beyond, especially in Southern California."

Find the full report online at: <http://onlinelibrary.wiley.com/doi/10.1111/ele.12711/full>



Tree die-off, Sierra National Forest, 2016 U.S. Forest Service Region 5 aerial image.

Landowners cope with tree mortality crisis



Following salvage logging, Dale Mitchell's property is littered with log decks. Photo courtesy: Dale Mitchell

Nearly 20 years ago, Dale Mitchell and his wife Julie bought about 70 acres of forestland near Shaver Lake in Fresno County.

It was zoned for timber production (TPZ) and had a dense stand of ponderosa pine (60 percent), incense cedar (25 percent) and scattered sugar pine, with some live oaks, Mitchell said.

The site had not been managed for over 50 years and the couple found an impenetrable understory of manzanita—up to 15 feet high in some places.

The Mitchells were moving ahead with their rehabilitation efforts when, in 2013, they noticed patches of dying ponderosa pines.

"We contacted a Registered Professional Forester, who guided our recovery efforts," he said.

They got a Timber Harvest Exemption from CAL FIRE and spent about \$30,000 to contract with a Licensed Timber Operator to clear the dead-standing timber.

They'd just finished removing the initial 200,000 board-feet of dead trees, when it became obvious the rest of the stand was infested, too.

Within a couple of weeks, they lost 95 percent of their ponderosa pines—about 1,800 mature trees. Since then, the loss of overstory shade has caused many incense cedars to die.

Because decades of timber harvest restrictions led to mill closures in the Central Sierra, he said there's now only one mill in the area. It's located 2.5 hours away at Terra Bella, in Tulare County.

"Salvage timber isn't worth much," he said. "The cost of hauling it that distance doesn't make financial sense."

The Mitchells are not alone. Dead and dying trees, mostly pine species, are now concentrated in six counties across 760,000 acres in the southern Sierra Nevada. Statewide there are more than 200,000 non-industrial private forestland owners, many coping with unusual tree die-off.

And, like the Mitchells, many are turning to RPFs for help.

"Our TMP is the basis for us applying for a California Forest Improvement Program grant to cover the costs of dead-tree removal," Mitchell explained. (see page 5)

The CFIP grant helps, he said, but there's still no place to take the dead trees.

Now he's awaiting fall and higher air humidity to safely begin mastication, piling and burning slash to complete his CFIP contract.

He added CFIP grants do not allow wood products created under the state's contracts to be sold for profit by the landowner.

"So, our short-term strategy is continue to clear dead timber and try to find a disposal method, while protecting the forest from fire and reopening the land to active silviculture."

The couple's long-term strategy, he said, is laid out in their Timber Management Plan with CAL FIRE.

Mitchell has this advice for forestland owners facing tree die-off: "If you haven't already done so, get professional guidance to restore your property. Otherwise, it's hard to know where to start to clean up this mess."

Spotting tree attacks

- *Identify the species of insect attacking a tree.*
- *Identify the tree species – some trees only have a few species that attack them.*
- *Determine the location of insect attack on the stem.*
- *Note: On large pines, engraver beetles attack near the top, red turpentine beetles attack the bottom of the trunk, others attack the middle of the stem.*
- *Identify the pattern of galleries under bark, which is individual to each bark beetle species*

Source: UC IPM bark beetle pest note

Need to replant? It pays to plan ahead



Now is the time to start planning reforestation of your land. It takes more than a year in advance for tree-growing nurseries to produce seedlings and supply them when needed.

Landowners wishing to start a reforestation project should contact a private nursery who will grow bare-root and container seedlings to support special projects, including reforestation and a variety of resource protection activities.

To place a seedling

order, landowners need to identify species, seed zone, elevation, quantities and date needed.

The seed bank at CAL FIRE's L.A. Moran Reforestation Center in Davis provides seed-zone specific seeds to private nurseries under contract.

Be aware many seed zones don't have seed available. Check availability before going into a contract with funding agencies and nurseries.

Be prepared to pay a deposit to the nursery. Under contract,

landowners will be eligible for cost-share reimbursement only after they've paid for the seedlings and planted according to specifications.

In most cases, landowners can order seedlings directly through private nurseries that then work with the CAL FIRE seed bank. The seed cost is usually passed on to the landowner in the cost of their seedlings.

Handy Links

California forest seed zones:
<http://ucanr.edu/sites/forestry/files/179250.pdf>

Guide to Reforestation and Obtaining Seedlings: http://calfire.ca.gov/Grants/downloads/USFS_Seedling_Protocol.pdf

Free PDF booklet: Recovering from Wildfire: A Guide for California's Forest Landowners
<http://anrcatalog.ucanr.edu/Details.aspx?itemNo=8386>

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 kcamp300@yahoo.com and specify whether you wish to receive either the electronic or paper version, or get both.

California Stewardship Helpline

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

California Dept of Forestry & Fire Protection

Deputy Director of Forestry Assistance
 Stewart McMorrow, Stewart.McMorrow@fire.ca.gov

CAL FIRE Forestry Assistance Specialists (FAS)

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

Guy Anderson/Topher Henderson (Fresno, Imperial, Inyo, Kern, Kings, Los Angeles, Madera, Mariposa, Merced, Mono, Monterey, Orange, Riverside, San Benito, San Bernardino, San Diego, San Joaquin, San Luis Obispo, Santa Barbara, Tulare, Tuolumne, Ventura) 559-243-4109

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Calendar

October 24-27

California Invasive Plant Council Symposium

Location: Riviera Hotel, Palm Springs

Information: <http://cal-ipc.org/symposia/register.php>

Note: This is the first Cal-IPC symposium to be held in the desert. California Department of Pesticide Regulation continuing education credits offered.

October 25-26

California Nevada Hawaii Forest Fire Council Fall Workshop

Location: Red Lion Hotel, 1830 Hilltop Drive Redding, CA 96002

Information: <http://www.cafiresci.org/events-webinars-source/cnh2017redding>

November 3

Forest Landowners of California Annual Meeting

Location: Granzella's Inn, 391 6th St, Williams, CA 95987

Contact: Deidre Bryant, Executive Director (877) 326-3778.

Note: Members who want to attend the meeting should RSVP at least one week prior to the meeting.

November 15-16

California Forest Pest Council Annual Meeting

Location: UC Davis Campus, Student Community Center Multipurpose Room, Davis, CA 95616

Information: <http://caforestpestcouncil.org>

Coming Soon!

Reforestation workshops are being planned for bark beetle mortality areas. Contact Stewart McMorrow for details: Stewart.Mcmorrow@fire.ca.gov.

Board of Forestry and Fire Protection 2017 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. Lots of information at <http://bofdata.fire.ca.gov>.

September 26-28	TBA
October	No Meeting
November 7-8	Resources Building, Sacramento
December 5-6	Resources Building, Sacramento

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What can be done with excess forest waste?

Disposing of woody material after hazardous fuels reduction projects, pre-commercial thinning, forest restoration activities, or post-fire or bark beetle salvage can be challenging. An important first step for landowners to solve the problem is talking with a Registered Professional Forester (RPF) and a Licensed Timber Operator (LTO) to create a plan for material disposal and restoration.

Depending on available markets, disposal options can have a major impact on how projects are designed and implemented, particularly if the goal is to recover some commercial value to help defray removal costs. An RPF will also know what financial assistance programs may exist to help landowners pay for planning and other activities.

There are times—after a fire or pest outbreak like the current bark-beetle infestation in the southern Sierra Nevada—when landowners need to play an active role in finding markets for wood and slash removed from their property.

If markets are over-supplied or unavailable, landowners should first focus on processing as much wood as possible on-site. That could entail grinding or chipping slash for mulch to help protect exposed soils from erosion or reduce highly flammable invasive weeds or grass from growing.

Another option is to contact a firewood business to see if they might be interested in buying woody material.

Lastly, a landowner and neighbors might need rough-sawn, green lumber. A portable mill can be brought on-site. Local Fire Safe Councils may have programs to assist with these activities or equipment can be rented in some areas.

Even without knowing intended buyers, the value and probability of moving excess woody material off-site is increased by following a few traditional logging practices.

Here are some steps to start preparing for removal:

- Ensure logs are bucked (cut) to commercial sizes. Check with a local RPF or LTO for the most desirable lengths.
- Deck (stack) logs by size and species, such as all incense cedar logs over 10 feet stacked by small-end diameter, all cedar less than 10 feet by small-end diameter.
- Ensure log decks are accessible without having to build new roads.
- Deck logs close to a paved road, if possible, to allow easier retrieval during the wet season.

In addition to checking traditional markets like sawmills, landowners should consider contacting nearby wood storage sites or biomass power plants, especially if the plant has a new “BioRAM” or “BioMAT” contract.

CAL FIRE provides a list of biomass storage sites and BioRAM bioenergy plants on the Tree Mortality Task Force website: <http://bit.ly/2em0PRv>. And: <http://bit.ly/2glFdF9>

Meanwhile, the current surge of leftover woody biomass has drawn the attention of businesses and policy makers in the state and across U.S. borders. Products such as biochar, cross-laminated timber, activated carbon (from biochar), larger scale mulch and soil amendment products may be suitable for domestic markets and exporting.

Blue-stain lumber for a variety of uses is being considered and invested in. Exploring these options helps prepare for long-term management due to climate change, wildfires, and insect/disease outbreaks. Look for discussion of new disposal and product options for woody material in coming *Forestland Steward* issues.

~ Angie Lottes, Biomass Program Director
The Watershed Research and Training Center