Living With WILDFIRE in Riverside County

This publication provided to you by

Mountain Communities Fire Safe Council
The Mountain Communities Fire Safe Council (MCFSC) stands ready to help families with their abatement concerns, including dead or dying tree removal, and to educate them about PRC 4291 (State of California fire abatement standards). We are a 501c3 nonprofit organization. We have paid members; an Executive Director, Office Assistant, Project Manager, and Field Inspectors. Our seven-member Board of Directors is all-volunteer, as is our 21-member working group, the Woodies.

**TOGETHER We Can Make A DIFFERENCE!**

The Fire Safe Council programs are primarily funded through grants from the CALFIRE California Climate Investments program, the Cooperative Fire Program of the U.S. Forest Service through the California Fire Safe Council, Southern California Edison, other nonprofit grants, and donations from the public and civic groups. The grant programs generally require the property owner to pay a cost-share that typically runs from 25% to 35% of the total cost. Some specialty grants may have more or less of a cost-share depending on the source and purpose of the funding. One hundred percent of the grant monies go to contractors who do the actual abatement and tree removal work. The percentage that the homeowner pays and public donations go to public education (quarterly newsletter, public functions, other educational campaigns) and the operating costs of the fire safe council.

On behalf of the Mountain Communities Fire Safe Council Board of Directors and Staff, thank you to all those who have taken advantage of the opportunities to make our mountain communities safer through hazardous fuels reduction programs.

We also want to acknowledge our collaborating fire agencies, contractors, the California Fire Safe Council, SoCal Edison, and the Riverside County Waste Management Agency for their contributions to a very complex and multi-faceted fire-safe program.

— Norm Walker, Mountain Communities Fire Safe Council Board President

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... and YOU!
An Evening of Wildfire Education and Disaster Preparedness
August 7th, 2021

J. BRITNEY MUNOZ
CFSC Southern California Regional Coordinator

I am pleased to have this opportunity to introduce myself as the new Southern California Regional Coordinator for local Fire Safe Councils. As a Central Valley rancher, I learned early on the importance of air quality, water quality, soil health and of the projected impacts carbon emissions on our climate. My drive to understand how to protect and share the importance of conservation of our natural resources accelerated at California State University, Fresno, earning a Bachelor of Science in Agriculture Sciences and Broadcast Journalism.

My passion for conservation work led me to work for the Natural Resources Conservation Service [NRCS] in CA, OR and WA. Rounding out my career path, I became the Fire Safe Council Coordinator for Resource Conservation District of Greater San Diego County (RCDCDC). Residing in San Diego County has driven me to work tirelessly to ensure the safety of my community, especially through an always-active wildfire season as fires worsen in intensity and frequency.

I understand that Mountain Communities Fire Safe Council is dedicated to enhancing the survivability of their community and I share the vision of the groundbreaking projects implemented in your community. It is with great pride that I get to support your fire safety efforts and serve as your partner in this mission. As your boots on the ground partner, I greatly look forward to working alongside the Mountain Communities Fire Safe Council. Together, we are the our best defense against wildfire devastation.

- J. Britney Munoz

Scan the barcode to access our website, social media channels, and the first edition of our quarterly newsletter "Mitigation Messenger"
You are Our Mission

Mark LeMont, Idyllwild Fire Protection District, Fire Chief

Since 1946 your local fire department has been answering your calls for Fire, Medical, Ambulance Transportation and Emergency Service needs. Each day your Idyllwild Fire Protection District personnel are honored to carry on this 75-year tradition of excellence by providing service that is certain to exceed your expectations.

In 1946 the Idyllwild Fire Protection District answered 46 emergency incident calls for service. Fast forward to 1956 when the IFPD answered 73 emergency calls for service. Today, after 75 years of continuous service, the Idyllwild Fire Protection District answers more than 1200 calls for service annually.

The Idyllwild community is certainly no stranger to wildfire. In 1996 the community was threatened and evacuated during the July “B” Canyon Fire, then in 2013 the community was evacuated once again during the July Mountain Fire, and in 2018 the threat of the fast-moving Cranston Fire caused the evacuation of the Idyllwild, Pine Cove and Mountain Center communities. Our mountain communities are truly blessed. Years of steadfast dedication, collaboration, education, prevention measures and overall land management efforts have contributed to a zero loss of life during any of these wildland fires.

As we look ahead, your fire service agencies will simply not be able to manage these fires without your contribution. Your efforts in responsible land management through ongoing abatement efforts and the hardening of your homes will be crucial to any future success.

What an incredibly beautiful and scenic place we live in.

If you live here in Idyllwild, you are blessed with the spectacular views and vistas surrounding our wonderful community. It is certainly understandable why so many of us have chosen to build our homes here and have taken the opportunity to live adjacent to our beautiful forests, wilderness, and wide-open spaces.

Our intermingling of road systems and houses within these beautifully undeveloped wildlands, is known as the Wildland-Urban Interface or “WUI” for short. As WUI residents, we must remain diligent and aware of our heightened vulnerability and responsibility to reduce the overall risk and prepare our properties and homes against the threat of wildfire.

Idyllwild, California is a beautiful place to call home. However, there is a tradeoff to living in the WUI, and as we all know much too well, “it’s not a matter of if a wildfire may happen, but a matter of when.”

Fire will continue to be an integral part of California’s overall landscape. Our wildland landscapes need fire to remain healthy, reproduce, and ultimately survive. Our history has shown that there are many beneficial effects of fire on the landscape. Small, intentional burn projects and quality forest management is key to healthy forest landscapes. Overcrowding of vegetation can make trees less healthy and more vulnerable to insects and diseases.
A well-intended history of robust fire suppression activity throughout California since the early 1930s has altered the natural cycle of fire on our state’s landscape, thereby altering the overall landscape and ultimately allowing a greater accumulation of dense vegetation and dead fuels throughout our forests. These large amounts of combustible materials are known as high fuel loads, which increase the likelihood that wildfires will burn at a greater intensity and destroy larger footprints. Couple these fuel loads with extremely high temperatures and fast rates of fire spread, and wildfires are more likely to destroy larger areas of our forests and threaten communities like ours which are situated within the Wildland Urban Interface (WUI).

Idyllwild is located within the San Bernardino National Forest and has historic roots in logging and land management practices, as well as the insertion of suburban development. Our beautiful forest surroundings contribute to our increased threat of wildfire, which in turn, increase our responsibility as responsible property owners and land managers. In recent years, we have witnessed an increasing number of enormous and catastrophic wildfires. A shift in the overall climate seems to have brought us either too little or too much precipitation, and extreme temperature fluctuations. Our recent drought conditions have ushered us into some of the largest and most damaging wildfires in history. Excessive rains (such as our Valentine’s Day rainstorm of 2019) generally lead to larger grass crops and other growth of light and flashy fuels which can carry fire along the landscape and burn much more quickly. These types of rains followed by high temps and long drying periods set the stage for catastrophic fire seasons.

With these extremes, it is now more than ever extremely important for us as residents and property owners to ensure that our homes and properties are ready for the inevitability of wildfire.

There is much we can do to prepare. Hardening our homes and providing defensible space will offer us a greater chance of success and survival during a wildfire.

As your neighbor and Fire Chief, I am blessed with the opportunity to live in such a beautiful place. I am honored at the opportunity of serving you alongside the incredibly dedicated, hardworking, and professional team here at the Idyllwild Fire Protection District. On your behalf, we will continue to maintain our proficiencies while building on our knowledge, experience and skill sets to ensure that we will meet and exceed your service needs.

Together, with your help, we will persevere through each of the challenges and opportunities we encounter in the future. With a compassionate and cooperative spirit, placing value on all of those we serve as well as those providing these critical services, we will endure, and we will be successful. Dedication. Compassion and Consistency in all aspects of our service is our team’s promise to you and your family.

Please call or visit our website for information on fire safe landscapes, property abatement, hardening your home, fireplace safety, fire sprinklers and many other helpful fire safe topics.

Thank you for the opportunity to serve.
Know Before You Go!

Fire restrictions on Forest Service lands change with the seasons. Check them before you head out and enjoy your visit!

During emergency situations...

Fires, Snowstorms, Floods...

Please... follow directions from Caltrans District 8 first responders! We are here to help you and your loved ones get to your destination safely.

District 8
Serving Riverside & San Bernardino County

Caltrans
Fire Behavior

Fire is essentially the combustion of fuel. In a wildland vegetation fire the fuel is the vegetation and the combustion releases heat energy that can cause fire to spread through a landscape. Heat can transfer to adjacent wildland vegetation by:
- Radiation
- Convection
- Conduction

Radiation is heat spreading like light waves in straight lines all directions from the heat source.

Convection is bubbles of heated gasses that can warm adjacent vegetation and bring it to its ignition point.

Conduction is the least effective heat transfer method, it is the movement of heat through solid fuels and wood being a poor conductor of heat, is not an efficient transfer method.

When firefighters speak of “fire behavior” we are talking about the actions and interactions of three environmental factors:
- Fuel
- Weather or Air Mass
- Terrain or Topography

By fuel we are referring to the living and dead vegetation that is on the landscape. We are most concerned with fuels that are “available” for combustion, given the other factors above. If the vegetation has a low moisture content due to drought, if it is fine in structure or is surrounded by fine fuels, is in full sunlight and/or has been exposed to high temperatures and low atmospheric relative humidity for many hours it is said to be available for combustion. Southern California has a typical summer “drought” due to our Mediterranean climate. We often receive little rainfall from May to October except for brief thunderstorms in July through September. By August fuels are almost universally available for combustion, except for wet or high elevation areas. Certain types of vegetation also send embers into the wind when on fire. These embers can move downwind and ignite “new fires” away from the main fire. These spot fires often interact with the main fire in dangerous and unpredictable ways.

Weather referred to above is the state of the atmosphere and consists of wind, atmospheric moisture or humidity and air temperature. Precipitation in the past is also important. All of these factors have an effect on fuels availability as described above. Wind is especially important because once the fire is ignited, the fire is propagated by radiant and convected heat. Wind increases the efficiency of heat transfer by convection and radiation. Wind accomplishes this by moving hot gasses of combustion downwind where they preheat vegetation and bring it to the ignition point, and by physically bending flames over so they are closer to the fuels, thus increasing radiant heat energy. Wind also lifts and transports embers to distant areas starting new fires.

Terrain or topography is the shape of the land. Fires typically move either with the wind or uphill, or a combination of both. Fire can funnel through the terrain in the opposite manner of water. In other words, areas where water channels and falls downhill.
The Wildfire Equation

Fire continues to be a part of our ecosystem. Fires start every day and your local firefighting resources quickly respond to control them.

People are living in this fire environment. Many homes have been built and landscaped with no thought of wildfire. And they’re often on narrow roads.

With more people and homes, fires are more likely to happen—with devastating results.

Today’s wildfires can burn fast...and seasonal hot, dry winds drive fires even faster, making them impossible to control.

Disaster
• deaths and serious injuries
• natural resources & wildlife destroyed
• homes and treasures within lost
• neighborhoods devastated

Now you have a little idea of how complex the movement of fire is on the landscape. It takes many fire seasons to get a feel for what a fire will do next, and even then, we are occasionally surprised. An ignition source is all that is needed to initiate combustion. With all these factors working in conjunction to affect the fire, one must consider what it takes to protect or “harden” your home from fire. The main ways to protect your home are:

• Prevent new ignitions by being very careful with hot objects outdoors
• Maximizing the distance from available fuels and your home to reduce radiant heat
• Reducing any surface or opening where embers can land and ignite hidden fires that spread on or inside your home. Reduce any objects that could ignite if embers land upon them (furniture, firewood, refuse cans.)
Environmental Quality Incentives Program

What is the Environmental Quality Incentives Program?
The Environmental Quality Incentives Program (EQIP) assists farm, ranch, and forest production and improves and protects environmental quality. The Farm Bill program offers financial and technical assistance to help agricultural producers voluntarily implement conservation practices that keep lands healthy and productive.

EQIP applications are accepted throughout the year. Cutoff dates are scheduled to allow for current year ranking and selection of applications for funding. State and local ranking criteria are developed considering annual stakeholder advice.

Visit the website below to review current EQIP cutoff dates, eligibility information, and special initiative opportunities.

Something for Everyone
EQIP offers assistance for all types of agriculture, including:
- Conventional and specialty crops
- Forestry and wildlife
- Historically underserved farmers*
- Livestock operations

*Special payment rates available for farmers who qualify under beginning, economically and socially disadvantaged criteria. Special provisions apply to qualifying veterans.

Some of the Eligible Practices
- Buffer strips
- Contour strip cropping
- Cover crops
- Critical area plantings
- Erosion control
- Grassed waterways
- Grazing management
- Livestock water systems

- Manure management systems including storage structures and barnyard runoff protection
- Nutrient management
- Pollinator and wildlife habitat
- Stream exclusion

For more information about EQIP, visit: www.nrcs.usda.gov/eqip

The Plan
The Natural Resources Conservation Service (NRCS) assists applicants with developing conservation plans for EQIP enrollment. Plans include conservation practices that meet NRCS’s standards and the applicant’s objectives.

Applications are ranked based on the level of conservation benefits that will be achieved in meeting those objectives.

The Professionals
NRCS offers expert analysis and recommendations to help you plan and design conservation improvements for your farm.

Our technical assistance is one-on-one, personalized advice and support — and is offered free of charge.

Eligibility
Farmers, ranchers, and forest landowners who own or rent agricultural land are eligible. EQIP offers payments for over 100 conservation practices to help all types of farmers and landowners.

How to Apply
Landowners or agricultural producers may apply by contacting their local USDA service center in the county in which the land is located.

Natural Resources Conservation Service

USDA is an equal opportunity provider, employer and lender. EQIP Factsheet • October 2018
nrcs.usda.gov/
Helping You Recover and Prepare for Wildfires

"Countless Californians are putting in sweat equity to protect their homes and properties and spending the money necessary to harden against the threat of ember-driven wildfire spread. Making homes and communities safer from wildfires is critical to protecting a competitive insurance market for all consumers."

– Insurance Commissioner Ricardo Lara

The Department of Insurance is a partner with our local communities in wildfire recovery and readiness efforts.

As the state’s top consumer protection agency, the Department of Insurance assists homeowners in filing claims and maximizing their insurance benefits following a disaster. The Department provides in-person help to wildfire survivors at Local Assistance Centers and virtual assistance via our hotline and online chat. We also host informational virtual events for local communities throughout the state.

And we are working alongside our first responders and local communities for safer homes – so we can have a competitive insurance market for all Californians.

Call us at 800-927-4357 or visit our website to find resources for wildfire survivors and tips for residents in finding insurance.

insurance.ca.gov
How Fast Is WILDFIRE?

The speed of spread and flame length would increase greatly during seasonal dry winds like "Santa Anas."

Firebrands / Embers

Firebrands are burning embers produced by wildfire which are lifted high into the air and carried beyond the fire front. Firebrands are one of the major causes of homes burned due to wildfire.

Typical firebrand materials include pieces of burning vegetation, and, if houses are involved, wood shakes and shingles. Depending on wind speed and size of materials, firebrands can be carried more than 1 mile ahead of the fire front.

A shower of thousands of firebrands can be produced during a major wildfire event. If these firebrands land in areas with easily ignited fuels—including wood roofs—numerous spot fires can start. Homes located blocks away from the main fire front can be threatened.

Is there anything we can do? YES!
The keys to surviving wildfire are:
1. DEFENSIBLE Space
2. Fire-hardened HOMES
3. EVACUATION Planning

The Devil Winds

- **Santa Anas, Chirrocks and Northerns**
  - **Chirrocks**—A warm dry wind blowing from the east that can rapidly raise temperatures as much as 60°F. The wind Chirrock was first used in Algeria, describing a westerly wind blowing of the Atlantic from Algeria.
  - **Northerns**—A cold, strong wind that blows from the Southern portion of the United States and the Gulf of Mexico. It can start as hurricanes in California and on the west coast of Mexico. The winds can rapidly drop the temperature as much as 20 to 30 degrees. Tepoz and Condensed Pressurization

Where Santa Anas come from

- **SANTA ANA**—South winds that blow from the mountains to the coastline.
- **CHIRROCKS**—East winds that blow from the mountains to the coastline.
- **NORTHERNS**—Cold winds that blow from the mountains to the coastline.

What causes Santa Ana winds

Santa Anas are a product of a high-pressure system over the Great Basin—Wyoming, Utah, New Mexico, and other parts of the Northern Great Plains. When this high-pressure system moves east over the West Coast, it pushes cooler air down along the coastline. The resulting temperature drop can be as much as 20°F in less than an hour. When this happens, the air becomes unstable, and Santa Ana winds can start to blow. These winds can raise dust and smoke, making visibility difficult.

Grass Fire

- **Speed**: 4 miles per hour
- **Area**: 2.5 acres per minute = (6 football fields per minute)
- **Fire size in 6 minutes**: 27 acres
- **Flame length**: 8 feet

Grass & Brush Fire

- **Speed**: 1.7 miles per hour
- **Area**: 4/5 acre per minute = (1.1 football fields per minute)
- **Fire size in 6 minutes**: 3 acres
- **Flame length**: 12 feet

Tall Chaparral Fire

- **Speed**: 8.3 miles per hour
- **Area**: 6 acres per minute = (8 football fields per minute)
- **Fire size in 6 minutes**: 36 acres
- **Flame length**: 47 feet
Assisting California
Forest & Woodland Owners

Concerned with:
Too many trees and shrubs causing a wildfire hazard? Numerous dead and dying trees around your property? Damage to your property from bark beetles or wildfire? The USDA Natural Resources Conservation Service can help!

Healthy Forests, Wildfire & Pest Hazard Reduction
Healthy forests have vigorous trees and shrubs and are resilient to drought, wildfire, and bark beetle impacts.

Unfortunately, many of California's forest have excessive amounts of vegetation that fuel large wildfires and bark beetle attacks. This can result in destruction of forests, loss of human property, poor air quality from smoke, accelerated erosion, and degradation to other environmental and social values.

To restore forest health and improve fire safety to your lands, the key is to reduce the number of trees and shrubs, remove excess woody debris left by wildfire and bark beetle damage, and replant trees in deforested beetle areas. NRCS can help you plan actions to improve forest health and wildfire safety on your property and provide financial assistance to get the work done.

Getting Started...
Go to the Office
We have 54 offices across the state. NRCS will work with you to develop a conservation plan tailored to help you improve forest conditions on your property. This voluntary plan will be based on your priorities and solid science. The plan may also be the basis to apply for financial assistance.

Financial Assistance
The Environmental Quality Incentives Program (EQIP) is a voluntary program that has been widely used by private forest landowners in California. EQIP shares with landowners the cost of conservation practices (see sidebar on back) to improve forest health and mitigate associated conservation concerns.

Apply
Any time during the year. Eligible projects will be evaluated, prioritized and selected for funding as budget allocations permit.
Special Funding Programs for Forestry
- Sierra Nevada 10-County Bark Beetle Wildfire Tree Mortality Recovery (CARCD RCPP) includes financial assistance to remove dead and dying trees within 100 feet of homes.
- Joint Chiefs’ Landscape Partnership for Forest Health and Wildfire Hazard Reduction in Yreka and Trinity County.

Without effective management, opportunistic understory plants compete with trees for water, nutrients and light (top). Unmanaged forest are susceptible to pest and wildfire damage (bottom).

About NRCS, FSA and RMA
In more than 80 years of helping farmers, ranchers and private forestland owners, NRCS has assembled technical standards (like those in the sidebar at right) to address natural resource concerns. The USDA’s Farm Services Agency (FSA) and Risk Management Agency (RMA) provide other critical resources such as farm loans, crop insurance and disaster assistance.

For more information on NRCS Farm Bill conservation programs visit www.nrcs.usda.gov/wps/portal/nrcs/main/ca/programs/

Typical NRCS Conservation Forestry Activities

FOREST MANAGEMENT PLAN
A site-specific plan that is developed based on the landowner’s management objectives and the professional expertise of a skilled forester to achieve long-term forest management goals.

FOREST STAND IMPROVEMENT
Treating areas made to improve the composition, structure, condition, health, and growth of even- or uneven-aged stands. Smaller trees in an immature stand may be removed to provide adequate growing space, accelerate diameter growth, and improve the form of the remaining trees.

SLASH DISPOSAL
Treating woody plant residues created during forestry activities to reduce hazardous fuels, the risk of harmful insects and disease while maintaining air quality, improving access to forage for grazing and browsing animals, and improving soil organic matter.

SITE PREPARATION
Treating areas to improve the site conditions for the successful establishment of trees.

TREE PLANTING
Establishing trees by planting seedlings or cuttings, direct seeding, or natural regeneration.

CONTROL COMPETING VEGETATION
Reducing the number of shrubs in the understory to an acceptable level to reduce the competition between trees and shrubs. As competition increases, soil moisture decreases; plants slow in growth, become weakened, and can prematurely die.

EROSION CONTROL FOR ROADS AND TRAILS
Treating legacy erosion problems with long term erosion control features to reduce soil loss and sediment into creeks.

Updated December 2019
The Wildfire Environment

Weather
Dry, hot and windy weather increases the likelihood of a major wildfire. These conditions:
• make ignition easier
• help fuels burn more rapidly
• increase fire intensity
High windspeeds, in particular, can transform a small, easily controlled fire into a catastrophic event.

Fuel
Fuel is required for any fire to burn. In a wildfire, fuels are usually living vegetation (trees, shrubs, brush, grass) and dead plant materials (dead trees, dried grass, fallen branches, etc.) Homes, when in the path of wildfire, can become fuel. The quantity, size, moisture content, arrangement and other fuel characteristics influence the ease of ignition, rate of fire spread, length of flames and other fire behavior.

Terrain
Of the topographic features, steepness of slope is among the most influential on fire behavior. Heat and gases created by a fire rise, drying out and heating up fuels further up slope. The steeper the slope, the faster a fire will spread. Other important factors are:
• “aspect” - (the direction a slope faces): south and southwest slopes are typically hotter and drier, increasing the likelihood of fire on these aspects
• “chimneys” - steep, narrow drainage

Endangered Species
Federal and state regulations have been established to protect rare and endangered plants and animals. Whenever there is any doubt about clearing or thinning brush, the US Fish and Wildlife Service and California Department of Fish and Wildlife should be consulted.

Human Environment
As people move into wildfire country, the human-built environment becomes important in predicting loss of life and property.
• Combustible construction, especially roofs
• Narrow roads, limited access
• Lack of fire-smart landscaping
• Inadequate water supply
• Poorly planned subdivisions
... are examples of increased risk to people living with the threat of wildfire.
Invasive Species Management and Reducing the Risk of Wildfire

Worldwide and in California, forests are increasingly affected by non-native insects, invasive plants, and diseases, some of which cause substantial tree mortality. Invasive species can be plants, animals, and other living organisms (e.g., microbes, fungi). An invasive species is defined as a non-native (or alien) species to the ecosystem and whose introduction causes or is likely to cause economic or environmental harm.

The introduction and spread of invasive species are often the results of human activity. Human activity can facilitate the movement of the species by transporting and relocating individuals or seeds from one location to another. Invasive species are commonly transported by vehicles, clothes, firewood, pallets, and commercial shipping operations. As a result, the number of invasive insects detected in the state increases annually. In combination with most invasive insects arriving without their native component of parasites and predators, the mild weather in California creates the potential for rapid invasion and successful establishment in forest systems. Once non-native pest species establish, many remain undetected until they cause plant injury and mortality. Some insects and diseases are insignificant; others can wreak havoc, causing tree mortality at landscape levels. This increased mortality can create hazardous fuel conditions and leave forests ripe for a catastrophic wildfire.

Invasive species can impact ecosystems in a variety of ways. Forest insect pests and diseases can result in the advanced killing of native trees and plants, resulting in increased fuel continuity. Invasive plants can out-compete native species and prohibit regeneration, replacing them with more flammable fuels. They can require more water than native vegetation creating an artificially dry environment and low live fuel moisture. Early detection of invasive insects, combined with a prompt and coordinated containment and eradication response, can reduce environmental and economic impacts. In conclusion, invasive forest species exacerbate already high fire risk conditions in the state by creating increased mortality and fuel. However, everyday citizens can help stop or slow the spread of the species by limiting firewood transport and washing clothes and vehicles after recreating outdoors to remove seeds.

Integrated Pest Management

Integrated pest management (IPM) is the process of managing a forest with all available tools so that potentially destructive organisms, such as insects and diseases, are maintained at a level that is below an economic or damage threshold. These tools are used in conjunction with forest management practices that are designed to meet the overall goals of a healthy forest. The tools of IPM include pest thresholds (economic or damage), preventive cultural practices, monitoring, mechanical controls, biological controls and chemical controls (including the use of pheromones). As a rule-of-thumb, forest management practices that encourage good growth and vigor produce pest resistant forest stands. Typically, pest problems arise in stands that are under stress from overcrowding, drought, and climate change. Many stress factors, but not all, are caused by poor or lack of management practices that can be alleviated by thinning, fuel reduction, and prescribed fire.
Steps to Defensible SPACE

The Three “R’s” of Defensible Space

REMOVAL
Eliminate entire plants, particularly trees and shrubs from the zone. Examples: cutting down a dead tree or cutting out a flammable shrub.

REDUCTION
Remove plant parts such as branches or leaves. Examples: pruning dead wood from a shrub, removing low branches and mowing dried grass.

REPLACEMENT
Substitute more hazardous vegetation with less flammable plants. Examples: removal of a dense stand of flammable shrubs and planting an irrigated, well-maintained flower bed.

Mountain Communities Fire Safe Council (MCFSC) recommends homeowners utilize the “Home Ignition Zone” concept to make up the required 100 feet of defensible space.

Three zones make up the required 100 feet of defensible space:

- **Zone Zero** extends zero to five feet from structures, including the building itself, and should be completely free of combustibles.
- **Zone 1** begins five feet from your house and extends 30 feet away. The most aggressive clearance is required closest to the structure.
- **Zone 2** lies beyond the home defense zone, extending at least 100 feet from the house or to your property line. Greater defense zone widths may be necessary if your home is on a steep slope or in a windswept exposure.

The Access Zone, Zone 3, is adjacent to roads and driveways, fourteen feet overhead and ten feet from the edge of the roadway. Specific recommendations for each zone are described below.

**Zone 0 or “Zone Zero”**

*Zero to Five Feet*

Zone 0, sometimes referred to as the “Immediate Zone” is the area nearest your house, 0 to 5 feet, including the surfaces of the structure itself. There should be ZERO combustibles in this zone! Take steps to harden your home with fire and ignition-resistant materials and design!

This zone extends 0 to 5 feet from your house. It’s the area closest to your house, including plants, decks, outdoor furniture, and the outside walls and coverings. This area is most vulnerable and should be more aggressively maintained for fire resistance.

- Remove combustible outdoor furniture. Replace with metal or non-combustible varieties.
- Replace jute or natural fiber doormats with heavy rubber or metal grates.
- Remove or relocate all combustible materials including garbage and recycling containers, lumber, trash, and patio accessories.
- Clean all fallen leaves and needles.
- No vegetation is recommended within 5’ of any structure.
- Remove tree limbs that extend into this zone. Fire-prone tree varieties should be removed if they extend into this zone.
- Do not store firewood, lumber, or combustibles here, even (especially) under decks or overhangs. Move stored combustibles inside or at least 30’ from any structure.
- Use only inorganic, non-combustible mulches such as stone or gravel.
- Hardscaping is strongly recommended around the base of structures.

**Zone 1**

*Five to Thirty Feet*

Zone 1, sometimes referred to as the “Home Ignition Zone” extends from your house’s exterior walls to a distance of 30 feet (the “Lean, Clean, and Green” zone).

This extends 0’-30’ out from buildings, structures, decks, etc., and overlaps the Home Ignition Zone described above.

- Remove all dead grasses, weeds, plants, & foliage.
- Remove all fallen leaves, needles, twigs, bark, cones, and small branches.

Firefighters can control about 97% of all wildfires that start. 3% overwhelm even the best-equipped, well-staffed agencies. That’s where your advanced preparation REALLY counts.
- Remove “Gorilla Hair” or shredded bark mulch.
- Use only compost or heavy bark mulch to maintain soil moisture, or for erosion control.
- Choose only fire-smart plants, and keep them healthy and well irrigated.
- Remove fire-hazardous plants.
- Provide spacing between shrubs, at least 2 times the height of the mature plant.
  Add space on steeper slopes.
- Trim trees to remove limbs 6’ to 10’ from the ground.
- Remove branches that overhang your roof or within 10’ of chimneys.
- Move firewood & lumber out of Zone 1, or cover in a fire-resistant enclosure.
- Remove combustibles around and under decks and awnings.
- Clear vegetation around fences, sheds, outdoor furniture, play structures.
- Outbuildings and liquid propane storage tanks should have at least 10’ of clearance.
- Maintain regularly, focusing on the areas closest to structures.

**Zone 2**

30 to 100 Feet

Zone 2 extends from 30’ to at least 100’—more defensible space may be required based on topography, vegetation, or building construction (for example, if you live on a hill, in a drainage, or an area surrounded by unusually dense or flammable vegetation, or have a wood shake roof, as much as 150’ may be required). California and local laws do not require you to create defensible space on property you don’t own. Work with your neighbor to gain permission to clear defensible space on their property if it will help protect your home!

Extending from 30’-100’ or to your property line at a minimum (you may be required to provide more clearance due to steep slopes, nearby vegetation conditions, and/or other conditions identified by the fire department). This zone should include at a minimum:
- Cut or mow annual grass down to a maximum height of 4 inches.
- Create horizontal spacing between shrubs and trees. (See diagram)
- Create vertical spacing between grass, shrubs, and trees. (See diagram)
- Remove fallen leaves, needles, twigs, bark, cones, and small branches. However, they may be permitted to a depth of 3 inches if erosion control is an issue.
- Remove all piles of dead vegetation.

**Zone 3 or “Access Zone”**

Zero to 10 Feet Horizontally and 14 Feet Vertically From Roads and Driveways

Zone 3, the “access zone,” extends from 3’ to at least 10’ horizontally from the edge of roads and driveways, and 14’ overhead.

Property owners are responsible for vegetation adjacent to roads and driveways. Access roads are critical for evacuation and first responder access. Maintenance is required year-round.

- Property owners are responsible for vegetation adjacent to roads and driveways.

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**Plant and Tree Spacing**

The spacing between grass, shrubs, and trees is crucial to reduce the spread of wildfires. The spacing needed is determined by the type and size of brush and trees, as well as the slope of the land. For example, a property on a steep slope with larger vegetation requires greater spacing between trees and shrubs than a level property that has small, sparse vegetation.

**Vertical Spacing**

Remove all tree branches at least 6 feet from the ground. Allow extra vertical space between shrubs and trees. Lack of vertical space can allow a fire to move from the ground to the brush to the treetops like a ladder. This leads to more intense fire closer to your home. To determine the proper vertical spacing between shrubs and the lowest branches of trees, use the formula below.

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**Horizontal Spacing**

Horizontal spacing depends on the slope of the land and the height of the shrubs or trees. Check the chart below to determine spacing distance.
NEW ASSEMBLY BILLS

New Assembly Bills- AB3074 and AB38- What Changes?

Two new assembly bills that affect property owners in high fire risk areas were recently passed. These areas, also known as “High or Very High Fire Hazard Severity Zones,” have been designated as such due to factors increasing the fire risk, including fuels, terrain, and weather hazards. The new bills were drafted after the devastating wildfires of 2017 and 2018. The Camp Fire of 2018 burned 153,336 acres, destroyed 18,804 structures, and claimed 85 lives. Coupled with successive years of drought and the accumulation of dry and dead vegetation, more than Twenty-five million acres within California or one in four structures are now defined or found to be within these zones. These new bills aim to reduce the risk to these areas.

Assembly Bill 38 established new documentation requirements during real estate transactions within these zones. A seller must now provide the new buyer with documentation that states the property is in compliance with defensible space requirements. This also helps establish a foundation for a new property owner who may or may not know what it means to live within a Wildland Urban Interface (WUI). Having this inserted into the escrow process is educational and provides a first view of PRC4291 and guidelines to a new owner.

Assembly Bill 3074 was approved in 2020 but does not go fully into effect until January 1, 2023. This bill updates the current law as it pertains to PRC4291. It will require “more intense fuel reduction” within the first 30 feet of a structure and create an ember-resistant zone within 5 feet of the structure. This new zone will be called “Zone 0”; this will allow the already existing zones to retain the same names. Recent studies have shown that the first 5 feet are the most critical in reducing the risk of ignition by embers. Embers can travel great distances and become seated in anything flammable. Even when the main fire is a distance away, an ember can find opportunity and cause the destruction of a home. Zone 0 will require increased fuels reduction to reduce the likelihood of ember-caused destruction and will also take into account the “flammability of the structure” through factors such as building materials, fuel types, and the location of the structure. Provisions of this bill also address the benefits of retrofitting structures with cost-effective home hardening options. Home hardening is a process of making the home itself more resilient to fire and includes making low-cost changes such as installing screening over vents and openings, caulking gaps, and installing metal gutter guards. Higher cost retrofits include replacing wooden decks and siding with noncombustible/ignition resistant material, as well as replacing a roof with a fire-resistant Class A roofing material.

Living in the WUI is both a privilege and a great responsibility. Combined, these new bills strive to make changes that reduce the risk and make it safer to live in the mountain community that we call “home.”

Steps to Defensible Space continued

- Clear vegetation 14’ overhead and 10’ from sides of roads and driveways in the same manner as Defensible Space Zone 1.
- Maintain 12’ of unobstructed pavement for passage of vehicles.
- Within this zone, plantings shall be fire resistant and must not extend into the roadway.
- 14’ of clearance is required above the roadway for emergency vehicle access.
- Address numbers must be clearly visible from the road, with at least 4” numbers on a contrasting background. Reflective or lighted numbers are best.
- Create vertical spacing between shrubs, and lower tree limbs. Cut all grasses.

Zone 4 or “Community” 100 to 200 Feet+

Many homes do not have 100’ of space between structures and parcel lines. Property owners are required to maintain defensible space to their property line. Work with neighbors to help provide defensible space for their homes, and ask neighbors for help if their property threatens yours. In most cases, the most effective solution is a cooperative approach between neighbors.

Remember that the most important zone is closest to your structures—from 0’-5’. If you’ve taken all of the steps outlined here and worked to harden your home, neighboring properties typically present only a minimal risk. Work with neighbors or land managers to reduce fuel on nearby properties or create fuel breaks to help reduce the risk to your community. Contact your local fire department for help organizing your neighbors to create a Firewise USA® site. Mountain Communities Fire Safe Council (MCFSC) will help, too!
The San Bernardino National Forest is planning to conduct broadcast prescribed burning throughout the forest, including large areas in the San Jacinto Mountains.

Pile burning, which is done for fuels clearance around Forest Service facilities or before areas can be treated with a broadcast approach, will also occur throughout the Forest.

The San Jacinto Ranger District is currently implementing prescribed fire around the area, including on Thomas Mountain near Garner Valley, on the western edges of Idyllwild-Pine Cove and along Highway 74.

These projects will create defensible space to allow firefighting resources to go direct in an offensive operation, rather than defensively when and if the time comes for a major wildfire approaching communities.

Additional projects are in the planning and implementation phase to aid wildland fire suppression, combined community defense and forest health, and reforestation to help stabilize the soil for minimizing impact of debris flows after wildfires.

**Why conduct prescribed burns?**

In addition to helping firefighters protect communities and infrastructure, prescribed burning is an active forest management activity that helps restore ecological functions to ecosystems. Fire has a natural role in coniferous regions of the San Bernardino National Forest. Caused naturally by lightning, fire has long maintained the health of forests, clearing brush on the forest floor and releasing seeds from pine cones, among other natural processes.

Drought, fuel buildups and fire exclusion—all compounded by climate change and homes spreading into fire-prone landscapes over the past century—have increased the severity of wildfires and allowed fuels to unnaturally build up. That build up results in an overabundance of flammable brush, which can enable wildfire to quickly spread into the canopy and toward communities and infrastructure. To address this, the forest conducts fuel treatments that include thinning, prescribed burning and mechanical understory treatments such as mastication, pruning and mowing. Land managers carefully select treatments to help reduce and rearrange the amount and continuity of fuel within a forest stand and across the landscape.

**Why now?**

We only burn when conditions make it safer to do so. The “burn boss,” the person in charge of a prescribed burn, assesses numerous factors each morning before ignitions can begin. These factors include wind, humidity, air quality, fuel moisture and availability of fire crew personnel. If the criteria are met, creating a so-called “burn window,” crews may move forward with burning.

**What about all the smoke?**

Fire planners make every effort to reduce the impact of smoke to communities when identifying potential burn windows. Forecasted wind patterns are taken into consideration, as well as consulting the local air quality management district. Overall, we are looking to reduce the impacts, including smoke, from major wildfires during peak fire season.
Defensible Space Project Work
Grant Funds on the Ground

By Katherine Garver, MCFSC Field Supervisor

Here are examples of project work conducted by the MCFSC. Grant Funds were utilized to assist a property owners to remove hazardous fuels surrounding the home. The removal of these dense fuels creates the necessary defensible space as required by PRC 4291.
Mountain Communities Fire Safe Council may have Grant Funds to Help You Prepare Your Property for Fire Season

We have been assisting residents living in the San Jacinto Mountain WUI for 20 years. We may be able to help you with your hazardous fuels abatement and dead or dying tree removal.

For more information on free abatement consultation, call 951-659-6208!
San Jacinto Mountains Fire History 1950-2021

San Jacinto Mountains Fire History 1970-2021

Decades

1970s 1980s 1990s 2000s 2010s

Photo Courtesy of Ivany Kichner
Are You A Licensed Timber Operator?

MCFSC is looking to add contractors to our bid list! Contractors must meet or exceed licensing, insurance, staffing and reporting requirements. Please visit our website at mcfsc.org/contractors for more information.

What to Include in Your Outage Preparedness Kit

- First Aid Kit
  - Remember to include prescription medications and check the expiration dates
- Bottled Water
  - At least a gallon per person per day
- Flashlights
  - Store them where you can easily find them
- External Rechargeable Battery Pack
  - These can be used to charge cell phones and other electronic devices
- Battery-Operated or Hand-Crank Radio
  - Radios can be used to access news reports during an emergency event
- Fresh Batteries
  - Have extra batteries for all battery-powered equipment
- Non-perishable Food
  - Choose items that don’t require cooking or heating, and have a manual can opener
- Special-Needs Items
  - This includes items for infants, the elderly, the disabled, or pets
- Coolers or Ice Chests
  - Have a few to store ice in case of a lengthy outage

Home Preparation Checklist

- Create a safety preparedness plan for your family, including how you’ll address special needs
- Familiarize yourself with your home’s utility boxes and how to turn them off
- Keep important phone numbers (hospital, doctor, relatives, etc.) by the phone
- Install surge protectors to help safeguard electronic equipment
- Learn how to manually open your automatic garage doors or gates
- Before you use a generator, consult a licensed electrician to determine the proper equipment and safely set up for your residence

For more safety tips, visit on.sce.com/preparedness
First-year performance statistics prove SCE-funded helitankers’ unprecedented, round-the-clock capabilities to stop wildfires in their tracks.

As Kyle Gordon drives past downtown Santa Barbara along a beautiful stretch of Highway 101, the Pacific Ocean beckons. Barely two months into his new job as a fire manager for Southern California Edison, he has been on the road for 36 days hopscotching a state peppered with hundreds of fires.

Gordon approaches Gaviota State Park and is amazed by the difference between the ocean view to his left and the Alisal Fire on his right.

“We have several critical power lines that are up near those mountains, and if the fire takes them out, it could mean power loss for many on the north coast of our service area, including Santa Barbara and Ventura,” said Gordon, who was an SCE production specialist for two years before shifting to fire management. “The firefighters had to jump on this fire quickly, or it was going to get out of hand.”

SCE contributed $18 million last year to lease the firefighting equipment in a partnership with the Orange County Fire Authority, Los Angeles County Fire Department and Ventura County Fire Department.

Before Gordon could reach the Ventura County Fire Department incident command post, he heard a now-familiar sound: the rhythmic thumping and atmospheric reverberations of the Quick Reaction Force. The airborne firefighting fleet consists of two Coulson-Unical CH-47 helitankers that can each carry up to 3,000 gallons of water or retardant; a Sikorsky-61 with a 1,000-gallon capacity; a Sikorsky-76 intelligence and recon helicopter, as well as a mobile retardant base - Opens in new window that can actively mix up to 18,000 gallons of retardant per hour.

SCE contributed $18 million last year to lease the firefighting equipment in a partnership with the Orange County Fire Authority, Los Angeles County Fire Department and Ventura County Fire Department.

Newly released statistics show how prolific and valuable the helitankers were last year:

- A total of 1,836 drops on more than 50 separate fire incidents;
- 2,607,496 gallons of water (equal to 4½ Olympic-sized pools), 28% dropped at night;
- and 123,455 gallons of fire retardant, 19% dropped at night.

The nighttime performance is what stands out.

“The combination of night-flying capabilities — night hovering, night-time filling of retardant and dropping — is what is remarkable and unique,” said Troy Whitman, Gordon’s colleague at SCE and a 29-year veteran of fire management. “Taking the full extent of aerial firefighting and going nocturnal is unprecedented anywhere in the world.”

The Alisal Fire burned more than 16,000 acres but came to a relatively early end thanks partly to the work of the Quick Reaction Force’s graveyard shift.

“They were flying nonstop at night, working around the clock,” said Gordon. “They pretty much sealed the deal for that fire. It was like you were in a fight with a schoolyard bully, and your big brother just came in and knocked it out.”
Reports from the firefighters who fought the Alisal Fire concur.

“We found the QRF to be highly effective and a large contributor to the ground resources working the fire line at night,” wrote Chad Cook, assistant fire chief for Ventura County Fire Department and operations section chief of California Incident Management Team One, in a post-event report for the Alisal Fire. “Our operational ground resources felt the support of fire suppression activities yielded higher production rates.”

The French, Route, Tuna and Tumbleweed fires are all events that now stand out primarily for their interesting names, not widespread destruction, as a result of the helitanker team’s efforts.

The Coulson-Unical CH-47 helitanker used by OCFA can drop 3,000 gallons of water in a single pass.

“Climate change continues to affect the wildland fire environment in ways never before experienced,” said Orange County Fire Authority Chief Brian Fennessy, an early and consistent supporter of the utility-fire agency partnership. “Speed and force are key to successfully suppressing wildfires while small and before becoming mega fires. The QRF is the first of its kind 24/7 aerial task force and has changed the way fires are fought from the air.”

SCE’s 2022 Wildfire Mitigation Plan update calls for the continued support of regional fire agencies. Gordon and Whitman are thrilled that this partnership will continue.

“In years past, sometimes you felt helpless watching our brave wildland firefighters working so hard to push back and fight the destruction of wildfires,” said Whitman. “It’s so gratifying to be a part of new suppression capabilities that support and amplify the work they do on the ground.”

Gordon added, “I’m fortunate enough not to know my job without the QRF. It does not diminish the appreciation I have for the sound of heavy rotors cutting through the smoky air of a wildfire.”

For more information on SCE’s wildfire safety efforts, visit edison.com/wildfire-safety.

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Troy Whitman, SCE Senior Advisor.
Evacuation Planning

Evacuations can be extremely stressful. Planning in advance for evacuations and knowing what to expect will help reduce stress.

An important step in your preparedness begins with enrolling your phones and address in Alert RivCo. This is one of the systems that Riverside County public safety agencies use to alert the public in the event of an emergency. For more information or to enroll, go to www.RivCoReady.org/AlertRivCo.

Evacuation Terminology

Riverside County public safety agencies have adopted standardized terminology for evacuations, based on recommendations from the State. If you receive an evacuation message, it will use terms below. It's important to know what the terms mean before an emergency. As always, we recommend you plan and prepare for emergencies and evacuations now, before they happen.

Evacuation Order:
Immediate threat to life. This is a lawful order to leave now. The area is lawfully closed to public access.

Evacuation Warning:
Potential threat to life and/or property. Those who require additional time to evacuate, and those with pets and livestock should leave now.

Shelter in Place:
Go indoors. Shut and lock doors and windows. Prepare to self-sustain until further notice and/or contacted by emergency personnel for additional direction.

This section contains helpful resources and checklists you can download to help you before and during evacuations.

Evacuations terms. What's it all mean?

RiverCo public safety agencies have adopted standardized terminology for evacuations, based on recommendations from the State. If you receive an evacuation message, it will use terms below. It's important to know what the terms mean before an emergency. As always, we recommend you plan and prepare for emergencies and evacuations now, before they happen.

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Go indoors. Shut and lock doors and windows. Prepare to self-sustain until further notice and/or contacted by emergency personnel for additional direction.
WHAT HAPPENS WHEN YOU DRONE DURING A FIRE

"There's a drone in the area," a voice on the radio said. "All aircraft, hold your position outside the area." We all look up, squinting our eyes at a bright blue sky from the Cajon Pass. "There it is," said the battalion chief, pointing to an area above a hill. A quadcopter, with its four arms spread, hovered above the so-called Devore Fire. It was May 2021 and we all thought that the public knew that this was not allowed. How wrong we were.

That’s why each year, the public relations arms of wildland fire agencies put out educational messaging about flying drones during incidents. "If you fly, we can't!" the posters say. But it's still happening.

There were 21 documented reports of drone incursions in 2020, including during the 33,000-acre Apple Fire just across Interstate 10. And it happened on the San Bernardino National Forest before that, too: The 2016 Blue Cut Fire and 2015 Lake Fire, for example.

TFRs, or Temporary Flight Restrictions, are often put into place during major incidents to, in part, prohibit recreational drone usage. Even when no TFR is in effect, it is not allowed to interfere with the work of suppressing a fire. That follows Federal Aviation Administration policy and best practices to avoid mid-air collisions with firefighting aircraft, risks to on-the-ground firefighters and hampering the effectiveness of wildfire suppression operations.

Aerial firefighting aircraft, including air tankers, lead planes and helicopters, fly at very low altitudes, just hundreds of feet above the ground, and in the same airspace as drones. This creates the potential for mid-air collisions and pilot distraction that may result is a serious or fatal accident.

When a drone is spotted in the area of a wildfire, fire managers may have to ground all aerial firefighting aircraft until they can confirm that the drone has left the area and they feel confident that the airspace is safe again. This can cause wildfires to become larger, more costly and to unduly threaten lives, property, and natural and cultural resources.

Individuals who have been determined to have endangered manned aircraft or people on the ground with a UAS and/or interfered with wildfire suppression may be subject to civil penalties, including fines of up to $25,000, and potentially criminal prosecution.

So if you have a drone, let’s keep it on the ground when that smoke starts rising. Leave the airspace to our brave pilots and air crew.

Zach Behrens is the Public Affairs Officer for the San Bernardino National Forest.
Off-highway vehicle (OHV) use continues to be a popular recreational activity. It includes family-oriented trips, recreational trail riding, competitive dirt bike racing, and the use of vehicles to gain access to remote locations. Fires are often caused by recreational activity.

For a vast majority of users, part of the enjoyable experience is being in the outdoors while operating an OHV. Because this activity commonly takes place in areas that are in close proximity to fuel sources, spark arresters are required on OHVs where fire is a threat.

The term “passenger vehicle” can encompass a wide range of motor vehicles. Most State vehicle codes differentiate between vehicles used for transportation and those used for recreation purposes. Dune buggies, motorcycles, and all-terrain vehicles (ATVs) are required to meet spark arrester regulations because they are not considered passenger vehicles.

The following are some of the most commonly used OHVs that require spark arresters.

**ATVs:** They are usually less than 54-in wide and weigh less than 650 lb. They have three or more flotation tires, are steered with handlebars, and are operated in a straddled riding position. All ATVs sold in the United States have spark arresters as part of the original factory equipment.

**Motocross Bikes:** These are designed for closed course competition. Generally, they come equipped with a muffler/silencer, which is not a spark arrester. They do not have a headlight or a taillight. Clues to defining a motocross bike are numbered plates, radiators on later models, two-stroke engines, and travel in the suspension that causes them to sit high.

It should be noted that motocross motorcycles are very popular among competitors and serious trail riders. This is an acceptable bike on many public jurisdictions providing it is equipped with an approved spark arrester and silencer/muffler.

**Enduro Motorcycles:** These motorcycles come factory equipped with a spark arrester. They are legal for use on public lands and are easier to inspect than motocross motorcycles. Enduro motorcycles are designed for OHV routes, desert riding, trail riding, and general off-road use. Most come equipped with approved spark arresters and small headlights and taillights.

**Dual-Purpose Motorcycles:** These are designed for on- and off-highway use, but must also meet all requirements for public highways. Headlights, taillights, brake lights, and turn signals are required.
**Volkswagen (VW) Dune Buggies:** The VWs are required to have a qualified spark arrester for off-highway use. Some dune buggies are street legal, have a license plate, and usually have a muffler. Mufflers are legal for street use, but do not qualify as a spark arrester for off-road use.

**Dune Buggies:** Dune buggies are built for off-road use only. While some are equipped with spark arresters, many can be identified by a straight exhaust that is very noisy and lacks a spark arrester.

**How Spark Arresters Work**
Spark arresters work on the principle of trapping or pulverizing carbon particles with a diameter greater than 0.023 in. The centrifugal trap-type arrester is by far the most common design used by OHV enthusiasts. In addition to the requirement of certain efficiency levels, a trap unit must have a clean-out device.

Various methods are used to clean accumulated carbon particles out of a spark arrester. Some include a cleanout plug, end cap, cleanout plate, inserts, snap rings, cleanout bands, and Allen bolts. The spark arrester must be serviceable without removing the complete exhaust system.

The cleanout requirement is one of the most critical elements of the trap arrester. It is also one of the most often ignored. During inspections, owners must be reminded that this type of arrester requires regular and timely maintenance, a critical element of spark arrester effectiveness.

Some models of spark arresters/mufflers require fiberglass packing. This packing should be replaced every 30 hours. Evidence of exhausted packing includes oil dripping from the exhaust tail pipe and/or excessive noise. Fiberglass is the only approved qualified packing.

**Qualifications for OHV Spark Arresters**
The qualification standard requires spark arresters to be permanently marked with the model number and manufacturer’s name or trademark. Whenever contact is made with an OHV, regardless of what type of machine is used, a spark arrester inspection should be made.

Many people think that a muffler/silencer is also a spark arrester. Mufflers and silencers are only designed for noise control. Only an inspection can determine whether this is a spark arrester or a muffler/silencer.

If the OHV has been operating, beware of very hot metal in and around the exhaust system. The arrester will be a chamber-like device located somewhere along the exhaust discharge. Find the manufacturer’s name or logo and the model number located on the spark arrester. It may be necessary to clean a portion of the arrester to reveal that information. It can usually be found on an attached metal plate. The words “USDA Forest Service Qualified,” “Spark Arrester,” or “Qualified” stamped on a piece of equipment does not guarantee that it is a tested and qualified arrester.
Spark Arrester Inspection
Check to see if the entire exhaust system is sound and the arrester has been maintained. Also make sure that the spark arrester is mounted securely in the qualified position. In OHV use, this is usually the horizontal position. Proceed with a thorough inspection of the entire exhaust system.

With the engine off, and using a penlight, look into the spark arrester to visually ensure that the interior has not been removed or altered. You may be able to see the interior section that deflects the exhaust. Use a narrow rod, such as a 8-in wooden dowel, to gently feel for the internal parts of the arrester. Check how far you are able to insert the wooden dowel internally and cross check this measurement with the outside of the spark arrester/muffler. This will indicate whether you are able to pass the dowel the length of the arrester/muffler. If you are able to pass the dowel the total length, it is not a qualified arrester.

All trap spark arresters have internal fins or louvers that deflect the exhaust. If you suspect that an arrester may be altered, have the owner take the arrester apart for further inspection. Although the arrester/muffler may have the approved model number and the manufacturer information stamped on the shell, the inside components of the spark arrester mechanism may have been removed. Only through a thorough inspection can this type of modification be noted.

Arresters can be modified to avoid routine maintenance or to give the false perception of improved engine performance. Some modifications that have been detected include complete or partial removal of the spark arrester component parts, perforation of an arrester part, and installation of foreign objects into a muffler silencer, “mocking” spark arrester parts when a wooden dowel probe is used. Examples of these foreign objects are washers, bottle caps, and steel wool.

Exhaust System Maintenance
The next step is to check the exhaust system for maintenance. The exhaust system must be without holes, gaps, loose connections, or any areas that exhaust can escape without passing through the spark arrester. If the integrity of the whole system is not complete, the piece of equipment cannot pass the inspection regardless of whether it has a qualified arrester or not.

Owners must be aware that spark arrester laws include the term “in effective working order.” Spark arresters need to be periodically cleaned to eliminate the trapped particles of carbon. The same conditions that cause spark plugs to foul can also cause a spark arrester to become inefficient. If it is not maintained, then its performance is hampered and it is not considered a legal spark arrester.
Summary
As you become more informed about spark arrester inspections, you will look forward to educating OHV enthusiasts about the proper use and maintenance of spark arresters. The use and maintenance of spark arresters can contribute to the effort of preventing unwanted wildland fires.

Spark Arrester Guide
The Spark Arrester Guide is the only authoritative industry source for information on qualified spark arresters for use on internal combustion engines. Use the guide when identifying qualified spark arresters. If the spark arrester number appears in the guide, SDTDC has evaluated the arrester.

There are two volumes of the guide: General Purpose and Locomotive, Volume 1, and Multiposition Small Engine, Volume 2. A revision of the guide is published every year. Therefore, each volume is published every 2 years. An online guide, updated every quarter, is available on the USDA Forest Service Intranet at http://www.fsweb.sdtlp.wm.fo.fs.fed.us. It is a searchable database that allows the user to make powerful searches.

Additional Information
This Tech Tip offers a broad introduction on OHV spark arresters. There are four other Tech Tips in the series. For more information on spark arresters, or to receive copies of other related Tech Tips, contact:

USDA Forest Service
San Dimas Technology and Development Center
444 East Bonita Ave.
San Dimas, CA 91773
Thankfully (and somewhat quixotically), the American spirit rarely shines as brightly as it does after tragedy. We come together and house our neighbors who had to flee disaster, often with just the clothes on their backs. Even on an enormous scale of devastation where thousands or more might be displaced, people will come together, and communities will get rebuilt. It’s not quite so straightforward or indeed possible to do the same with our wildlands. Wildfire will cleanse the land of life more thoroughly anything imaginable, destroying habitat, resources such as food and minerals, and most lifeforms in its wake. And yet humans are not the only clever creatures around, many animals have been factoring humans and our communities into their survival for centuries. Even timid and shy creatures can display steely resolve and tolerate close-proximity to humans when survival dictates it. If your home is near the wake of wildfire’s destruction you might have a few ‘visitors’ passing through your property looking for a new home. Show these living organisms the same compassion and empathy you do for the humans that live in your community.

Here are some helpful tips to give those creatures the best chance to rebuild their lives as well. First and foremost, bring your pets in for as long as you can after the flames subside. Air quality will be poor anyway, but this is the safest thing to do for your pets and for fleeing wildlife. If you see unusual wildlife activity, try not to disturb them. Let them rest and take shelter in a safe place away from the flames, they will likely move on soon enough. Your bushes, wood piles, gazebos, and trees will make great temporary shelter while they catch their breath.

While some would bristle at the suggestion that any sort of food be put out for fleeing wildlife, few argue against providing wildlife with fresh water sources especially in wildfire areas. If you have water features such as ponds or bird baths, feel free to fill them up with fresh water. If you maintain bird feeders, you can similarly make sure they’re well-stocked and remain so. Similarly, consider putting out nesting materials or a nest box specific for a favorite local bird species. Birds have different preferences for nesting boxes, but a quick search in your go-to search engine can let you know exactly what dimensions your target bird species would be drawn to.
No time would be better to consider going native with your landscaping then when the area experienced wildfire destruction. While it’ll take some growth cycles before established vegetation replaces fire follower species, it’ll be important to maintain populations of local pollinators so that their species has an established footing to expand from when the burned forest turns green again.

If you encounter hurt wildlife, be sure to reach out to permitted wildlife rehabbers. Don’t offer up wild animals to the first person that wants to take them off your hands from a facebook post. Here in SoCal, The Coachella Valley Wild Bird Center (760) 397-7004 is a tremendous resource and rehab center for birds – big and small. Sunshine Haven Wildlife Rehabilitation Center (951) 588-8811 is similarly respected and experienced in the care of almost anything you might find in the wild. Please keep in mind that animal rehab centers are staffed by volunteers and not on-call 24/7. They are knowledgeable professionals with finite resources and you should remain courteous and mindful, even if you get an answer you did not want to hear. Should you place an animal in their care, consider also leaving them a donation to help keep them going. It might also make the difference in that animal’s future care. Veterinary care, medicine, and animal food are not free after all.

Should you need to capture an injured animal, your safety should always come first. Be sure to wear gloves, long sleeves, pants, and closed toe shoes. Have a blanket and appropriately sized box with airholes handy. If possible, limit the animal’s field of vision and guide it to a corner or confined space. Be quick and firm (but not overly so) and use the blanket to contain and capture the animal and place gently into your box. Birds of prey have shockingly powerful talon grasp, and any animal can bite and scratch so be mindful of those body parts whenever attempting to handle wild animals. In an open field, multiple people might be needed to capture an injured animal. In the case of large mammals or any animal you are not comfortable securing in this way, contact the above listed rehab facilities, or RivCo Animal Services (951) 358-7387 for assistance.
Wildland Fire Safety for Your Livestock and Pets

You’ve taken steps to keep your family and home fire safe. Don’t forget your pets and livestock. With some advance planning you can increase their chances of surviving a wildland fire.

Livestock

- Clear defensible space around your barns, pastures and property just as you do your home. PRC 4291 requires clearance around all structures on your property.
- Plan ahead, know where you would evacuate the animals. Contact your local fairgrounds, stockyards, equestrian centers, friends etc. about their policies and ability to take livestock temporarily in an emergency. Have several evacuation routes in mind. If you don’t have your own truck and trailer, make arrangements with local companies or neighbors before disaster strikes. Make sure your neighbors have your contact numbers (cell phone, work, home, etc.).
- Have vaccination/ medical records, registration papers and photographs of your animals (proof of ownership) and your Disaster Preparedness Kit.
- If you must leave your animals, leave them in a preselected, cleared area. Leave enough hay for 48 to 72 hours. Do not rely on automatic watering systems. Power may be lost.
- Do not wait until the last minute to start evacuating!

Livestock Disaster Preparedness Kit

- Hay, feed and water for three days
- Non-nylon leads and halters
- First aid items
- Wire cutters and a sharp knife
- Hoof pick
- Leg wraps
- Shovel
- Water buckets
- Plastic trash barrel with a lid
- Portable radio and extra batteries
- Flashlights

During a wildland fire, local animal rescue organizations work with law enforcement and fire departments to rescue as many animals as they can. In battling a wildfire, firefighters will do what they can but they are not responsible for evacuating your livestock. Firefighters may cut fences or open gates to free trapped animals.
Pets

- Plan ahead. Know where you will take or leave your pets. In case you are not home when disaster strikes, arrange in advance for a neighbor to check on or transport your pets. Make sure your neighbors have your contact numbers (cell phone, work, home, etc.). In the event of evacuation pets may not be allowed inside human emergency shelters - have an alternate prearranged location to take your animals.
- Make sure your pets are always wearing properly fitted collars with personal identification, rabies and license tags.
- Each animal should have its own pet carrier. Birds, rodents and reptiles should be transported in cages. Cover cages with a light sheet or cloth to minimize their fear.
- Store vaccination/medical records, veterinary contact information, proof of ownership, a current photo, and a Disaster Preparedness Kit in one location.

Pet Disaster Preparedness Kit

- Pet carrier for each pet
- Two week supply of food and water
- Non-spill food and water bowls
- Pet first-aid kit
- Medications and dosing instructions
- Cat litter box and litter
- Plastic bags for waste disposal
- Paper towels
- Disinfectants
- Leashes/collars/harnesses
- Blankets
- Toys and treats
- Newspaper

If You Must Leave Your Pet

- If you must leave your pets, bring them indoors.
  **Never leave pets chained outdoors!**
- Use a room with no windows and adequate ventilation, such as a utility room, garage, bathroom, or other area that can be easily cleaned.
  **Do not tie pets up!**
- Leave only dry foods and fresh water in non-spill containers. If possible open a faucet to let water drip into a large container or partially fill a bathtub with water.

www.fire.ca.gov
There are several very important practices that, when followed, tell you that you are working with a tree service you can trust with your trees — and your wallet

There are good tree services and there are bad tree services. Many know and care about what they are doing, some do it only for a "quick buck." Some are honest, others aren’t. Some keep worker safety in mind, others don’t.

Here are some pointers to help you:

Certified Arborist. A tree service that deserves your business has a Certified Arborist on staff to ensure that the proper work is done, and that the work is done properly.

Safety. Tree work is very dangerous for the climber, the workers on the ground, and even for pedestrians nearby. A good tree service ensures a safe environment for everyone who is in or around the tree. At a minimum, every worker on the job follows these three safety rules:

• Wear personal protective equipment (PPE), including a helmet (in the tree and on the ground), ear protection, and other gear when appropriate. If the workers aren’t wearing helmets on your job, ask them to stop the work until they put helmets on.

• If there are power lines near the tree which pose a danger, the tree service will have the power company drop the lines before their work is started.

• Make sure that cones or tape block off the area from pedestrians.

Insurance and being licensed or bonded. A reputable tree service carries two kinds of insurance: liability and workers’ compensation, and is happy to show you their certificate of insurance upon request. When you look at the certificate, check the expiration date to make sure it is current.

Ordinances and Permits. A good tree service obeys local laws and ordinances, such as those that require a permit for removing a tree. In some cities you and the tree service can be slapped with a hefty fine if a tree is removed without a permit.

Protecting Your Trees. You can always tell if a tree service cares about trees by the way they get up into them. If they are wearing leg spikes during a pruning operation, they obviously don’t care about the tree. Leg spikes are bad for trees.

Protecting Your Yard. A good tree service puts down plywood or uses another method to protect your driveway, lawn, and landscaping from damage by equipment or falling branches or logs. Ask ahead of time what kind of damage is expected. You may get different answers from different companies.

Property damage. A reputable tree service will take responsibility and fix or pay for damages that happened while they were working on your property.

Clean-up. A good tree service cleans up thoroughly when the job is done. You should not have to clean up behind them.

Payment. No reputable tree service would ask you for a deposit or to pay for a job ahead of time. Don’t pay for tree work until you are satisfied that the job is complete!

Lastly, remember to always...

• Get the best care for your trees
• Pay a price which is fair
• Hire a company which is reliable and trustworthy
• Use a company that follows time-proven safety rules for workers

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MCFSC has a nationally recognized crew of over 20 volunteers, the Woodies, who donate thousands of hours in labor each year. We are a diverse group of men and women who are retired and active firefighters, nurses, school teachers and administrators, social workers, law enforcement, hairdressers, authors, art historians, and illustrators.

Brush clearing, weed whacking, raking, and hauling debris is essential in keeping our communities fire-resistant and Woodies are up to the challenge! Low-income, disabled, and/or over 75 years of age residents may apply for services to help with the daunting task of fuels reduction at no cost. We average 1 to 2 abatement jobs a month during the spring, early summer, and even into autumn. In 2021 alone, Woodies performed abatements on 9 homes, ground, and ladder fuels reduction on a 1-acre lot resulting in a total of 150 cubic yards (210 tons) of biomass being removed.

Collaboration with other agencies is essential in communities, large and small. At least once a year, Woodies team up with Team Rubicon, an international group of service-oriented volunteers, for a week-long project of abatements and other fire mitigation exercises. Local tree service companies and educational camps donate logs that would otherwise end up in a landfill. Woodies then cut and split the wood for distribution to an average of 1200 low-income families in the community annually.

Woodies have been active for over 20 years and are always looking for new volunteers to join our team. Please contact MCFSC for more information.
Be Prepared If A Wildfire Occurs.

By preparing ahead, your house has a better chance of surviving a wildfire. When a wildfire is immediately threatening your area, take the following steps to protect your home.

First, if you see a fire approaching your home, report it immediately by dialing 911. Stay on the phone to answer additional questions the emergency dispatcher may ask.

Next, dress properly to prevent burns and lifelong scars. Wear long pants and cotton or wool long-sleeve shirts or jackets. Gloves provide added protection. Do not wear short sleeve shirts.

If You Cannot Evacuate Your Home When A Fire Approaches

- Stay inside your house, away from outside walls.
- Close all doors, but leave them unlocked.
- Keep your entire family together and remain calm.
- Remember: If it gets hot in the house, it is many times hotter and more dangerous outside.

After the Fire Passes

- Check the roof immediately, extinguishing all sparks and embers. If you must climb onto the roof, use caution, especially if it is wet.
- Check your yard for burning woodpiles, trees, fence posts or other materials.
- Keep the doors and windows closed.
- Continue rechecking your home and yard for burning embers for at least 12 hours.
Emergency Wildfire Survival Checklist

Preparing to Evacuate
- Park your car in the garage, heading out with windows closed and keys in the ignition.
- Close the garage door but leave it unlocked; disconnect the automatic garage door opener in case of power failure.
- Place valuable documents, family mementos and pets inside the car in the garage for quick departure, if necessary.
- If you do evacuate, use your pre-planned route, away from the approaching fire front.
- Keep a flashlight, cell phone and portable radio with you at all times.
- If you are trapped by fire while evacuating in your car, park in an area clear of vegetation, close all vehicle windows and vents, cover yourself with a blanket or jacket and lie on the floor.
- If you are trapped by fire while evacuating on foot, select an area clear of vegetation along a road.
- Cover any exposed skin with a jacket or blanket. Avoid canyons that can concentrate and channel fire.

Outside Your Home
- Move combustible yard furniture away from the house or store it in the garage; if it catches fire while outside, the added heat could ignite your house.
- Cover windows, attic openings, eave vents, and sub-floor vents with fire resistant material such as 1/2 inch or thicker plywood. This eliminates the possibility of sparks blowing into hidden areas within the house. Close window shutters if they are fire resistant.
- Attach garden hoses to spigots and place them so they can reach any area of your house.
- Fill trash cans and buckets with water and locate them where firefighters can find them.
- If you have an emergency generator or a portable gasoline-powered pump that will supply water from a swimming pool, pond, well, or tank, clearly mark its location and make sure it is ready to operate.
- Place a ladder against the house on the side opposite the approaching fire to help firefighters to rapidly get onto your roof.
- Place a lawn sprinkler on flammable roofs, but don’t turn it on unless the fire is an immediate threat. You do not want to reduce the supply of water for the firefighters.

Inside Your Home
- Close all windows and doors to prevent sparks from blowing inside.
- Close all doors inside the house to slow down the spread of fire from room to room.
- Turn on a light in each room of your house, on the porch, and in the yard. This will make the house more visible in heavy smoke or darkness.
- Fill sinks, bathtubs, and buckets with water. These can be important extra water reservoirs.
- Shut off liquefied petroleum gas (LPG) or natural gas valves.
- Move furniture away from windows and sliding glass doors to keep it from igniting from the heat of fire radiating through windows.
- Remove your curtains and drapes. If you have metal blinds or special fire resistant window coverings, close them to block heat radiation.

This is a wildfire prevention message from the Coronado National Forest. For more information visit www.fs.fed.us/r3/coronado/ or contact your local fire department.
USDA Forest Service is an equal opportunity provider and employer.
CREATE A WILDFIRE ACTION PLAN

Your Wildfire Action Plan must be prepared, and familiar to all members of your household well in advance of a wildfire. Use the checklist below to help create your plan. Each family’s plan will be different, depending on a variety of issues, needs, and situations.

Ensure you plan with COVID-19 in mind. Ask friends or relatives outside your area if you would be able to stay with them, should the need arise. If you do need to evacuate and plan to stay with friends or relatives, ask first if they have symptoms of COVID-19 or have people in their home at higher risk for serious illness. If that is the case, make other arrangements. Check with hotels, motels and campgrounds to learn if they are open. Also get set by learning about your community’s response plan for each disaster and determine if these plans have been adapted because of COVID-19.

Your Wildfire Action Plan Checklist

Create an evacuation plan that includes:

- A designated emergency meeting location outside the fire or hazard area. This is critical to determine who has safely evacuated from the affected area.
- Several different escape routes from your home and community. Practice these often so everyone in your family is familiar in case of emergency.
- Have an evacuation plan for pets and large animals such as horses and other livestock.
- A Family Communication Plan that designates an out-of-area friend or relative as a point of contact to act as a single source of communication among family members in case of separation. (It is easier to call or message one person and let them contact others than to try and call everyone when phone, cell, and internet systems can be overloaded or limited during a disaster.)

Be Prepared:

- Have fire extinguishers on hand and train your family how to use them (check expiration dates regularly).
- Ensure that your family knows where your gas, electric, and water main shut-off controls are located and how to safely shut them down in an emergency.
- Assemble an Emergency Supply Kit for each person, as recommended by the American Red Cross. (See next section for details.)
- Maintain a list of emergency contact numbers posted near your phone and in your emergency supply kit.
- Keep an extra Emergency Supply Kit in your car in case you cannot get to your home because of fire or other emergency.
- Have a portable radio or scanner so you can stay updated on the fire.
- Tell your neighbors about Ready, Set, Go! and your Wildfire Action Plan.

Source: CAL FIRE
PRE-EVACUATION PREPARATION STEPS

When an evacuation is anticipated, follow these checklists (if time allows) to give your home the best chance of surviving a wildfire.

Home Evacuation Checklist – How to Prepare for Evacuation:

Inside the House

- Have your Emergency Supply Kit/Evacuation Bag ready to go
- Ensure a Wildfire Action Plan is prepared ahead of time
- Make sure you know your community’s emergency response plan and have a plan on where to go when it is time to evacuate, and best routes for leaving your location.
- Shut all windows and doors, leaving them unlocked.
- Remove flammable window shades, curtains and close metal shutters.
- Remove lightweight curtains.
- Move flammable furniture to the center of the room, away from windows and doors.
- Shut off gas at the meter; turn off pilot lights.
- Leave your lights on so firefighters can see your house under smoky conditions.
- Shut off the air conditioning.

Outside

- Gather up flammable items from the exterior of the house and bring them inside (patio furniture, children’s toys, door mats, trash cans, etc.) or place them in your pool.
- Turn off propane tanks.
- Move propane BBQ appliances away from structures.
- Connect garden hoses to outside water valves or spigots for use by firefighters. Fill water buckets and place them around the house.
- Don’t leave sprinklers on or water running, they can affect critical water pressure.
- Leave exterior lights on so your home is visible to firefighters in the smoke or darkness of night.
- Put your Emergency Supply Kit in your vehicle.
- Back your car into the driveway with vehicle loaded and all doors and windows closed. Carry your car keys with you.
- Have a ladder available and place it at the corner of the house for firefighters to quickly access your roof.
- Seal attic and ground vents with pre-cut plywood or commercial seals.
- Patrol your property and monitor the fire situation. Don’t wait for an evacuation order if you feel threatened.
- Check on neighbors and make sure they are preparing to leave.

Animals

- Locate your pets and keep them nearby.
- Prepare farm animals for transport and think about moving them to a safe location early.

Source: CAL FIRE
Riverside County is a popular destination - full of outdoor activities in its beautiful and vast terrain. The goal of this publication is to inform and educate residents and visitors so that they may help preserve its rich history and natural resources for years to come. Fire prevention is everyone’s responsibility - I invite you to not only absorb, but apply the great content in this publication and dedicate it to your daily lives so that you and your loved ones are prepared in the event of a wildland fire.

Bill Weiser, CAL FIRE Unit Chief and Riverside County Fire Chief

Year-round fire season is a way of life for all in Southern California. The importance of networking with your neighbors, looking into online publications, and creating an emergency plan is great way to protect lives and property.

Kevin McNally, CAL FIRE Battalion Chief, Mountain Battalion

Collaborating with fire safe councils in developing comprehensive Community Wildfire Protection Plans in engineering strategies to build fire adaptive communities is the Cleveland National Forest’s priority.

Michael Nobles, Fire Chief - Cleveland National Forest
If you’ve recently moved to our beautiful Mountain Community, I would like to personally welcome you. I would like to ask you to join your Fire Department, our cooperators, and neighbors in our joint effort of Fire Prevention and Safety. Owning property in this incredible place requires our commitment and diligence as we work together to ensure success in the Wildland Urban Interface (WUI) environment in which you now reside.

Mark LaMont, Fire Chief
Idyllwild Fire Protection District

Properly abated homes are safer for firefighters to defend and more likely to survive in a wildland fire.

Norm Walker, SSD Division Chief, Big Bear Fire Authority
MAKE A DONATION

Your generous contribution to the Mountain Communities Fire Safe Council will allow us to keep our educational outreach and fire prevention programs going. All donations, large or small, are deeply appreciated. The Mountain Communities Fire Safe Council is a 501c3 nonprofit; all donations are tax-deductible as allowable by law.

Your tax-deductible donations to the Mountain Communities Fire Safe Council (MCFSC) can be made by:
• Scanning the Paypal QR code.
• Mailing a check to Mountain Communities Fire Safe Council, PO Box 507, Idyllwild California, 92549.

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