# A Road Map to Fire Safety

## How to Create Defensible Space in the Santa Monica Mountains

Presented by the Santa Monica Mountains Fire Safe Alliance | April 2010 | www.fire.lacounty.gov/Forestry/RoadMaptoFireSafety.pdf

# mission

## our mission

The mission of the Santa Monica Mountains Fire Safe Alliance, a collaboration of related public agencies, departments, and communities, is to find solutions and resources for property owners and land managers to improve stewardship in the wildland urban interface. Integration of best management practices will create defensible space while protecting wildland. The Alliance will help create safer communities and protect natural areas by involving and educating stakeholders, sharing information, and locating and providing beneficial resources.

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# Alliance Members and Contact Information

LA County Third District Office.....818-880-9416

State Senate District 23 Office.....310-314-5214

State Assembly District 41 Office.....818-596-4141

California Coastal Commission.....805-858-1800

California Department of Fish and Game...916-653-7664

California Department
of Parks and Recreation.....818-880-0363

California Fire Safe Council.....626-335-7426

City of Calabasas.....818-224-1600

City of Malibu .....310-456-2489

County of Los Angeles Fire Department
Brush Clearance Unit .....626-969-2375
Fuel Modification Unit .....626-969-5205
Fire Plan Unit .....818-890-5783
Malibu Forestry Unit.....818-222-1108

FAIR Plan (Fire Insurance).....800-339-4099

Agricultural Commissioner
County of Los Angeles Weed
Abatement Division.....626-575-4393

Mountains Recreation and
Conservation Authority and Santa
Monica Mountains Conservancy..... 818-871-9645 ext 34

Mountains Restoration Trust..... 818-591-1701 ext 203

National Park Service
Santa Monica Mountains
National Recreation Area.....805-370-2300

Resource Conservation District
of the Santa Monica Mountains.....818-597-8627

Southern California Edison.....310-315-3201

UC Cooperative Extension—Los Angeles
County Sustainable and Fire Safe
Landscapes Program ..... http://ucanr.org/safelandscapes

USDA—Natural Resources
Conservation Service .....805-386-4489

**Q:** Can I protect the natural environment and still create a fire-resistant zone to protect my home, family, and neighborhood?

**A:** Yes! This road map to creating defensible space is both a guide to where you can start with your own property to make it more fire-safe and a guide for how to work with your surrounding neighbors to create a fire-safe community.

# how the Alliance works for me

Complying with defensible space, brush clearance, and fuel modification regulations in the Santa Monica Mountains can raise issues of property ownership, regulatory jurisdiction, environmental preservation, and watershed management. Managing wildfire safety involves a myriad of stakeholders in the Santa Monica Mountains and requires a collaborative effort to protect private and public property. The Santa Monica Mountains Fire Safe Alliance is committed to creating solutions to this challenging situation.

When a property owner or community group raises a concern or question impacting multiple jurisdictions with any member of the Alliance, it can be brought to the Fire Safe Alliance where all affected agencies can be informed and involved in coordinating a solution.

"Alone, we can do so little; together, we can do so much." | Helen Keller

# Fire Hazard Reduction for Different Property Types

**A. Private improved lot adjacent to private improved lot:**
Each parcel owner performs work up to 200' from structures.

**B. Private improved adjacent to private vacant (unimproved) lots:**
Each parcel owner performs work on their own property up to 200' from structures. Fire hazards should be reduced on vacant lots by the parcel owner, or the Weed Abatement Division (WAD) of the Los Angeles County Department of Agriculture may perform the work.

**C. Private improved lot adjacent to public land:**
Public land agencies follow their vegetation management policies. Owner of private lot allowed to perform work on public land only with permission of the public agency.

# challenges in the Santa Monica Mountains

## California FAIR Plan Insurance

The FAIR Plan is a private syndicated association that provides basic fire insurance for residential or commercial properties in urban and brush/wildfire areas across the state. All insurance companies licensed to write property/casualty business in California are members of the FAIR Plan based on their market share of written business in the state. The FAIR Plan is considered the market of last resort and should only be utilized after making a diligent search for coverage in the voluntary insurance marketplace.

The frequency of wildfires in recent years, along with improved technology, has led the property insurance industry to take a broader view of risk assessment than in prior years; additional factors beyond vegetation and home construction are taken into consideration. Some of these factors include types of combustibles (trees/ornamental plants) in proximity to insurable structures, location/topography, wind conditions, and infrastructure—e.g., water supply, road access/egress, etc.

California FAIR Plan PROPERTY INSURANCE

Underwriting guidelines vary among all insurers. The risk assessment process includes other potential forms of loss, such as wind storm or liability perils, besides the obvious concern for frequency and severity of losses from wildfire catastrophes. Therefore, insurers' concerns and requirements may not always be the same as fuel modification concerns articulated by fire service agencies.

If your property does not meet an individual insurer's underwriting requirements, you may be referred to the California FAIR Plan to obtain property insurance for your structure and contents.

The FAIR Plan inspects its properties, issues quotations and policies, and adjusts claims like any other insurer. Currently, in brush/wildfire areas, properties may be subject to a brush/wildfire surcharge over the base policy premium if they cannot comply with 200' of clearance around all structures at risk.

**Refer to the FAIR Plan's Web site at www.cfpnet.com** for more information on brush/wildfire clearance.

# Fire Access Roads

Providing adequate access to structures is an important component of fire hazard reduction and the Fire Code. It allows Fire Department personnel and equipment to enter and exit properties not only during wildfires, but also for everyday emergency medical service calls.

These roads are also crucial evacuation routes for residents during an emergency. All roads leading to structures, including driveways and road easements, must be cleared of flammable material within 10' of each side of the road. On private parcels, the owner is the responsible party, even if there is a road easement granted to Public Works. Owners must ensure that all fire access roads conform to Fire Department requirements prior to annual inspections.

# challenges in the Santa Monica Mountains

## Environmental Considerations for Planting and Clearance

**Erosion:** Excessive clearing can lead to erosion, causing slope destabilization. Please consult Malibu Forestry Unit or Brush Clearance Unit prior to starting work.

**Endangered/Threatened Species and Migratory Birds:** Restrictions exist that may impact when and where you may remove vegetation. Consult jurisdictional agencies, which may include National Park Service, State Parks, Mountains Recreation and Conservation Authority, California Department of Fish and Game, U.S. Fish and Wildlife Service.

**Fire-Safe Planting:** Use low fuel volume, fire-safe plants. See Appendix B list, and consult the Fuel Modification, Brush Clearance Unit or Malibu Forestry Unit of the L.A. County Fire Department.

**Invasive Species:** As part of their vegetation management activities, owners should avoid planting invasives, and consider removing those that occur. For more information about invasive species, see Appendix D list, and consult the Malibu Forestry Unit with questions.

**Oak tree pruning or removal:** Subject to restrictions and ordinances. Consult the Environmental Review Unit or Malibu Forestry Unit for questions or permits.

**Streams:** Restrictions impact activities near the bed, bank, and channel of a waterway. Consult the California Department of Fish and Game for streambed alteration agreements at www.dfg.ca.gov.

Invasive | Tree of Heaven

Invasive | Ivy

Invasive | Castor Bean

# Native Vegetation—Critical Ecosystems

Chaparral and coastal sage scrub are the predominant vegetation types in the Santa Monica Mountains. Together with the climate they grow in, they can produce extreme fire behavior, yet these plant communities are among the most ecologically significant in southern California. They possess exceptional watershed values, including soil stabilization and groundwater recharge. The valuable viewscapes they create make the region a popular place to live and visit. They also provide crucial habitat to many declining species of wildlife.

These two vegetation types have been reduced and fragmented as a result of frequent and intense human-caused disturbance. Contributing factors include development, excessive vegetation clearance, and wildfires, all of which may result in invasion of nonnative weeds that produce lighter, more flammable fuels. As pristine habitat is lost, the numbers of rare, threatened, and endangered species rise. These species contribute to biodiversity and serve extremely important roles in natural ecosystems. One hundred forty-nine plant and animal species that are rare, threatened, or endangered have the potential to occur in the Santa Monica Mountains.

Dominant chaparral species include small-leaved shrubs like chamise (*Adenostoma fasciculatum*) and ceanothus (*Ceanothus spp*). This plant community is found in foothill areas and requires twenty years after being severely disturbed to establish and produce sufficient seed for successful reproduction.

Coastal sage scrub includes soft, small shrubs under 3' tall that grow below 2,500' elevation. They include semi-woody aromatic evergreen plants such as California sagebrush (*Artemisia californica)*, California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), and white sage (*Salvia apiana*). This plant community is found on alluvial fans, bluffs, open range, and plains. Most wildlife species dependent on sage scrub require a minimum of 50 percent plant cover. Coastal sage scrub takes up to 2 to 3 years to regrow after a fire and a minimum of 10 years to recover following severe disturbance, such as complete removal.

**One of the greatest threats** to these native plant communities is invasion by nonnative plants. For more on invasive plants and how you can avoid introducing them, see Appendix C and D.



Next: Hazard Reduction

the starting point

Section 2

## Structure First

Embers from wildland fires can enter your house through many different routes, but exterior vegetation is not the only fuel providing those embers. Wildland fires can also be spread from structure to structure or from a structure to wildland vegetation. The most important place to begin preparing defensible space is with your home. Fortifying or retrofitting your home can be your best defense against ember intrusion.

**Your neighbors' home** is only as safe as yours!

## Fire Prevention Tips

1. Use ignition-resistant construction materials.
2. Retrofit suggestions and options:
   a. Install approved baffled attic vents.
   b. Box in eaves and bird-stop tile roofs.
   c. Convert from single-paned to double-paned windows.
   d. Install noncombustible siding.
   e. Install Class-A roofing materials.
   f. Use ignition-resistant deck materials.
   g. Add a cistern to collect rainwater with connections for Fire Department use.
   h. Add 2½-inch Fire Department drafting connections to existing pools.
   i. Consider using nonflammable paints.
3. Use noncombustible fencing materials.
4. Store firewood at least 30' from the structure.
5. Use ignition-resistant outdoor furniture.
6. Seal openings to the outside, like garage and dog doors.
7. Remove combustible materials adjacent to structures.
8. Consider purchasing retardant foams or gels.
9. Maintain chimneys and spark arresters.

first stop

# Creating Defensible Space by Addressing Vegetation

The goal of fire hazard reduction is to ensure defensible space while protecting natural resources. Brush clearance and fuel modification are complementary strategies with the same goal. Don't let the terms confuse their intent: both accomplish their purpose by modifying native and ornamental vegetation to change fire behavior. By altering the arrangement and orientation of vegetation, including breaks in vertical and horizontal continuity, the possibility of catastrophic fire behavior can be reduced. At the same time, tree and shrub canopies can be left intact to shade the ground, retain soil moisture, provide habitat, reduce soil erosion and weed growth, and decrease ongoing maintenance costs.

NPS property | Before

NPS property | After

## Fire Hazard Reduction

Address Vegetation Around Structures to Prevent Direct Flame Impingement and Reduce Ember Production:

1. Follow brush clearance guidelines.
2. Separate vegetative fuels from structures.
3. Remove all vines or climbing plants (e.g., bougainvillea).
4. Remove Italian cypress from under eaves.
5. Remove or replace eucalyptus and pines with less flammable trees, such as oak or sycamore.
6. Remove palms (especially *Washingtonia or Phoenix*) and pampas grass as they are heavy ember producers.
7. Refer to the restricted plant list in Appendix C.
8. Isolated specimens may remain with Fire Department approval.
9. Consult with the Fire Department if unsure of requirements, either the Brush Clearance Unit at 626-969-2375 or your local fire station.

**Insurance Tip:** Work with your insurance agent to determine the current replacement cost and resulting insurance limit to your home.

# Brush Clearance Guidelines and Timeframes

Although brush clearance inspections occur once a year, remember that maintenance is a year-round responsibility. The Los Angeles County Fire Code requires all structure owners to comply with brush clearance (fire hazard reduction) requirements in an area up to 200' from structures. In essence, these requirements are as follows:

- Cut all cured grasses to 3" within 200' of structures.
- Maintain all plants free of deadwood.
- Maintain roof and rain gutters clear of accumulated dead material.
- Limb up trees and shrubs to 6' or a third of their height.
- Space native shrubs and/or groups 5 to 15' apart, depending on their size.
- Shrubs can be in groups of three 12' plants or five 3' plants.
- Keep trees a minimum of 10' from chimney outlets and generally at least 5' from the structure.
- Remove flammable materials within 3' of fire hydrants and 10' of propane tanks.
- Remove flammable vegetation within 10' of fire access roads.
- Provide overhead clearance to a minimum of 16' (13'-6" for oaks) on fire access roads.
- Cut material can be chipped and remain on-site up to 6" in depth.
- Balance brush clearance requirements with erosion concerns on steep slopes (greater than 25 percent).

This house would be cited for a brush clearance violation.

## Brush Clearance Violation

### What To Do If You Receive a Brush Clearance Violation Notice (410B)

The Fire Department is committed to working with property owners who show an effort to ensure defensible space around their structures. Should you receive a 410B Violation Notice and you are unsure of the requirements, please call the local station immediately for clarification. The phone number should be written on the bottom of the notice. Station personnel are ready to guide homeowners in developing defensible space, especially on large projects, which may take up to three years to complete. These projects typically involve the removal of dead or dying trees, or require pruning or removal of target species, such as pine and eucalyptus. Routine maintenance, such as weed whipping or deadwooding of trees and shrubs, is expected annually and shows the property owner's commitment to creating and maintaining defensible space. This commitment gives the fire inspector flexibility in developing a plan that works for the property owner.

**The deadline for brush clearance is:** May 1 for inland areas | June 1 for coastal areas

go the extra mile

# Incorporating Fuel Modification Concepts

Fuel modification applies only to new structures and remodeling projects (greater than 50 percent of the original structure) permitted after January 1, 1996, and may add stricter requirements and/or protect sensitive habitat and endangered species. Owners of older structures are not subject to fuel modification requirements; however, this does not prevent them from using these best management practices.

## Fuel Modification Tips

- Seek free advice from the Fuel Modification Unit or Malibu Forestry Unit prior to planting.
- Don't plant highly flammable species of plants, e.g., pine or eucalyptus; see Appendix C.
- Remove existing highly flammable ornamentals, e.g., pampas grass, Canary Island date palm, or bougainvillea.
- Add an irrigated zone within 50' of a structure to increase fuel moisture.
- Add cinderblock walls when no other alternative exists (acquire permits prior to construction).
- Use gravel mulches in place of turf or high water use plants.

Rock Mulch, Weed Barrier, Drip Irrigation

Organic Mulch, Artificial Turf

**L.A. County Fire Station 65** received an award from the LVMWD for water conservation.

Photos by Ron Durbin

what to **look** for

# Community Vegetation Management and Fire Hazard Reduction

In this photo, additional work is necessary to provide defensible space for all structures.

Each owner is responsible for clearing brush to 200' from all structures, but only on their property. When an adjacent structure is within 200' of your property line, you may be required to provide brush clearance on your property to ensure defensible space of the adjacent structure. (County of L.A. Fire Code 317.2.2 and 317.2.3)

All homeowners are responsible for meeting these requirements. Neighborhood cooperation is imperative to ensure defensible space for all structures.

Photo and Illustration by Ron Durbin

# fire hazard Reduction by Topography and Vegetation #1

## Structure at Top of Slope

Photos and Illustration by Ron Durbin

# fire hazard Reduction by Topography and Vegetation #2

Neighborhood cooperation is imperative to ensure defensible space for all structures.

## Mild Slope with Native Brush

Photo and Illustration by Ron Durbin

# fire hazard Reduction by Topography and Vegetation #3

## Structure at Mid-Slope

Photos and Illustration by Ron Durbin

# notes and sketches

## Sketch Your Existing Plan Here

## Sketch Your New Plan Here



Next: Getting Organized

getting
# organized

Section 3

## Fire Safe Councils

A Fire Safe Council is a group of people who share a common concern about wildfire hazards and organize for the purpose of taking action. Councils range in size and complexity from small neighborhood groups working together to improve fire safety in their individual communities to the state-level California Fire Safe Council, which administers millions of dollars in grants each year.

The California Fire Safe Council formed in 1993 to address the fire problems associated with the growing population near California's wildlands. Since then, nearly 200 local councils have formed across the state.

Typical leadership includes a president, vice-president, secretary, and treasurer, who serve a term of office determined by the group. Partners include representatives from other organizations such as land management agencies, fire departments, local government, real estate companies, insurance companies, and utility companies. Once organized, groups can begin to identify and prioritize projects. If they choose, they may apply for funding.

Fire Safe Councils can incorporate to attain nonprofit status and may apply for grants to fund projects, such as vegetation removal, in their communities. Alternatively, they may affiliate themselves with other incorporated businesses, nonprofit organizations, or government agencies that can act as fiscal sponsors for their grant applications. Not all Fire Safe Councils apply for grants.

The California Fire Safe Council Grants Clearinghouse is one of the main sources of grants that Fire Safe Councils can apply to, but there are other sources as well.

**For more information** on creating a local Fire Safe Council, visit **www.firesafecouncil.org**, or call 626-335-7426.

the ultimate **destination**

# Implementation of a Community Wildfire Protection Plan

**Development of a Community Wildfire Protection Plan (CWPP)**
Wildfire has widespread effects on a community; thus, communities will best be served by organizing Fire Safe Councils and developing Community Wildfire Protection Plans (CWPPs). A CWPP allows a community to take advantage of the Healthy Forests Restoration Act (HFRA), which provides planning assistance and support in development and implementation of hazardous fuels reduction projects.

The three main elements of a CWPP are collaboration, prioritized fuel reduction, and treatment of structural ignitability. A CWPP will define and prioritize hazards and mitigation measures needed for protection of life and property. In conjunction with national legislation (HFRA), there is federal funding available to help communities complete their CWPP projects. The Santa Monica Mountains Fire Safe Alliance will help ensure that all the required elements are included in a CWPP; it is fully committed to helping all Santa Monica Mountains communities that wish to become more fire-safe develop a plan.

Horizon Hills Community Leaders

**If you want to be involved** in developing a CWPP for your community, contact the L.A. County Fire Department's Fire Plan Unit at 818-890-5783 or **www.cafirealliance.org/cwpp/**.

# Horizon Hills

Three longtime residents of Horizon Hills, each in his eighties, launched the Horizon Hills Fire Safety Project in 2005. The trio of seniors originally met over coffee, and soon realized that they'd fought on opposing sides during WW II. Ernie had been an American paratrooper, Wolfgang a German air force private, and Herb a survivor of Auschwitz. The three men agreed on the need to make their neighborhood more fire safe.

Each man was motivated in part by prior bouts with Malibu wildfires. Dr. Ernie Masler lost an earlier home he'd owned in another Malibu neighborhood in the 1993 Topanga fire. Herb Kolischer and Wolfgang Knauer were able to save their Horizon Hills homes in the 1978 Kanan fire that swept through Horizon Hills.

Horizon Hills is a 40-home hillside community surrounded on the west, north and east by the Santa Monica Mountain National Recreation Area. The national parklands is densely grown with chaparral and renders Horizon Hills extremely vulnerable to wildfires that can sweep southward when the dry Santa Ana winds blow down the canyons. The winds arrive in violent bursts and burning wildfires can shoot intense blasts of embers hundreds of yards downwind, endangering trees, brush and homes.

The neighborhood is no stranger to big fires. The 1956 Newton Fire and the 1978 Kanan Fire swept directly across Horizon Hills, burning all vegetation in their paths. Few houses had been built in those days, and so there was little property damage in Horizon Hills. But the Kanan Fire continued to the beach below, where it destroyed some 30 homes on Broad Beach Road.

To get their fire safety work under way, the trio incorporated as the "Horizon Hills Fire Safe Council" and applied for a federal grant through the California Fire Safe Council, a clearinghouse for state and federal grants for fire safety work on private land. In 2006 they were awarded a National Parks Service grant for $52,000. They allocated much of the money to the most urgent task, removal of hazardous trees and shrubs near dwellings. The Forestry Division of the Los Angeles County Fire Department provided essential help by selecting the most dangerous trees and by convincing owners to let those trees go. Kolischer, Knauer and Masler kept detailed records, and had homeowners sign agreements specifying which trees and shrubs could be cut.

As the project progressed the trio realized that a more comprehensive approach to wildfire protection was in order. They found it helpful to divide the hillside into zones: Near-zones involving trees and shrubs around individual dwellings, and outer weed and brush zones, common to entire neighborhoods. To take on the outer weed and brush zones, they asked for and received a second federal grant of $52,000 in 2008 and again with a match from Los Angeles County Fire Department. They hired crews to cut chaparral and trees, and even a herd of goats to trim grass on steep hillsides that crews with weed whackers couldn't reach.

Work on the second project was finished in spring 2009, and together the two grants have led to the removal of over 100 mostly large trees, the thinning of an equal number, the clearing of weeds on some 10 acres, and the removal of brush on more than four acres. Overall, this fuel reduction provides significant additional defensible space against approaching wildfires. And the benefits go well beyond Horizon Hills, extending to several adjacent communities, including Malibu Park, Broad Beach Road, and Malibu West.

Before

After

**Co-founder Wolfgang Knauer said it best**

"Most retired people wish to remain active - and useful to society. The three of us saw an unfilled need in community wildfire protection, and we decided to act. The result was very uplifting for us: first we learned new skills—founding a corporation, getting funding, running a business, soliciting clients, and then we experienced the rewards—visibly lower fire dangers for the community."

Before

After

# West Hillside

Nine families living at the base of West Hillside Drive in Topanga established the West Hillside Firesafe Council in the summer of 2008 with the mission to create defensible space and protect their homes against wildfire. Their agenda: to remove dangerous pine and eucalyptus trees as part of a carefully crafted plan to make their neighborhood more fire-safe.

The Los Angeles County Fire Department's Forestry Division and the National Park Service (NPS) worked with the West Hillside Firesafe Council to analyze their neighborhood and assess projects that would improve their safety during wildfires and set the example for wider neighborhood participation in Topanga. The group wrote its Community Wildfire Protection Plan (CWPP) and received $40,000 from the NPS to implement the first phase of the plan. L.A. County Fire Department's J. Lopez and Ron Durbin assessed each home, explaining what needed to be done to safeguard it and maintain the escape route out of the neighborhood. Then the residents, with property spanning 20 acres from the bottom of Hillside and Stonewall Trail to a quarter-mile up the hill, began to remove the most dangerous trees. Their objective was to remove nonnative, highly flammable trees within the first 30' of homes and along their escape route throughout the neighborhood. By doing that, they would also help protect approximately 150 people who live above them and who could be trapped during a fire. "Forty-nine houses will be directly impacted by what we do," explained one of the organizers, Joyce Wisdom. More than 30 trees were removed in January 2009 by Gold Coast Tree Service. Wisdom said they don't miss the trees. "These trees were planted in the '20s. They were very sick and dying. We have so many oaks here that we thought, 'When we take those trees out, others will start up.' It's a natural oak grove."

West Hillside then applied for a California Fire Safe Council grant. After months of effort, they were selected, among 143 projects statewide, by the California Fire Safe Council (through the Fire Safe California Grants Clearinghouse) to receive $65,250 to continue to implement their CWPP. The NPS, one of four federal land management agencies that contribute funds to the Grants Clearinghouse under the Community Assistance program of the National Fire Plan, was instrumental in the approval of the additional funding. Wisdom was gratified. "It gets the rest of the really big, bad trees. We'll be a little more than halfway through."

"It's been very exciting," said Lynne Haigh, another resident and local activist. "We were focused on the common good. I have such respect for everyone in this group and the way we pulled together. We were all in agreement. People work together if they like each other." The effort was originally Ken Wheeland's idea. "I was looking up at the eucalyptus trees and thought, 'Wouldn't it be nice to get rid of these trees? They're fire hazards and nonnatives.'" He went to Lopez and Susan Nissman, Senior Field Deputy to the Los Angeles County Board of Supervisors, for advice. They suggested the NPS come to speak to the families. Joyce made the call to Kathryn Kirkpatrick. Kirkpatrick remarked that she was glad to help, because "it's great to see homeowners taking responsibility for protecting their own homes. When people realize how much they can do to improve their fire safety, they are empowered."

continued below

The West Hillside group members are sensitive to the environment not just because they want to be good stewards, but also because they are mandated by the plan they created. For instance, a red-tailed hawk has nested in a dead pine tree nearby for the past nine years. For the time being, that tree will be spared. In general, work will be done out of nesting season. Then birds adapt and return to other trees to roost. Also, for every tree they cut down, the Fire Department gives the group a tree to plant. “We definitely don’t want to look like the moon,” Wheeland insisted.

Wheeland added, “It’s not just about cutting down trees. It’s about making your house fire-safe with double-paned windows, fireproof materials, trimming trees, clearing brush, and replacing vents.” Fire science has proved that this strategy of working from the house out results in a major reduction in damage from flying embers. It means making the structure itself fire-resistant and then removing other hazardous fuel in the area immediately surrounding it.

Getting the grant was not a slam dunk. The neighbors met many times to develop the plan, taking minutes and keeping track of their hours, because “in-kind” hours can substitute for the matching funds required for some grants. “Ultimately, it’s the idea that it’s a partnership, that the community is also contributing,” says NPS spokesperson Jennifer Chapman. When West Hillside received the first $40,000, they got three bids for the work, hired a contractor, and chose the trees that were to go first. “It was all up to us—our choice which trees to cut. We were educated by J. and Kathryn,” Wisdom explained.

**With excerpts from an article in The Topanga Messenger** by Michele Johnson, 5/21–6/3/2009. Reprinted with permission from The Topanga Messenger. All rights reserved ©.



Next: Assistance

roadside assistance

Section 4

# Appendix A: Links to Additional Information

**LA County Red Flag Warning Hotline: (310) 456-5783**

**Public Agency Web Sites and Applicable Laws:**

L.A. County Fire Department: www.fire.lacounty.gov

City of Calabasas: www.cityofcalabasas.com

California Coastal Commission: www.coastal.ca.gov

Mountains Recreation and Conservation Authority/Santa Monica Mountains Conservancy: www.smmc.ca.gov and www.mrca.ca.gov

L.A. County Fire Code: http://municipalcodes.lexisnexis.com/codes/lacounty

Building Code Chapter 7A and other Wildfire Protection Information from the Office of the State Fire Marshal: http://osfm.fire.ca.gov

**Information About Public Land in the Santa Monica Mountains:**

Santa Monica Mountains National Recreation Area: www.nps.gov/samo

California State Parks (Malibu Creek, Topanga, Leo Carillo, Point Dume, Will Rogers): www.parks.ca.gov

Santa Monica Mountains Conservancy/Mountains Restoration and Conservation Authority: www.lamountains.com

**Other Local Stakeholders:**

Resource Conservation District of the Santa Monica Mountains: www.rcdsmm.org

Mountains Restoration Trust: www.mountainstrust.org

Topanga Coalition for Emergency Preparedness (T-CEP): www.t-cep.org

**Information on Plants:**

California Native Plant Society: www.cnps.org

California Invasive Plant Council: www.cal-ipc.org

Native plants: www.ci.malibu.ca.us/index.cfm/fuseaction/detail/navid/409/cid/9314

Invasive plants: www.lasmmcnps.org/invasive.html

**Other Resources for Property Owners:**

California Fire Safe Council's Grants Clearinghouse: www.firesafecouncil.org

Home Inventory Checklist: www.iinc.org/pdf/inventory.pdf

University of California Homeowner's Wildfire Assessment and Homeowners Wildfire Mitigation Guide can be accessed through http://firecenter.berkeley.edu

UCCE Sustainable and Fire-Safe Landscapes Program: http://ucanr.org/safelandscapes

Controlling Nature's Wrath video: http://hazardmitigation.calema.ca.gov/video_list

L.A. County Department of Public Works' homeowner's guide for flood, debris, and erosion control: www.ladpw.org/wmd/homeowners/index.cfm

USDA-NRCS post-fire restoration: www.ca.nrcs.usda.gov/programs/ewp/

The Topanga Disaster Survival Guide: www.topangasurvival.org

Jack Cohen structure ignition study: www.firewise.org/resources/files/WUI_HIR/Wildlandfirethreat.pdf

**For information on current fires:** On federal land: **www.inciweb.org**; On state or private land in California: **www.fire.ca.gov/index_incidents_info.php**

# Appendix B: Emergency Oak Tree Permits (EOTPs)

A permit is required for any activity affecting the health of an oak tree, when the tree is 25" or more in circumference, or 8" in diameter at 4.5' above mean natural grade. Multiple-trunk trees are ordinance size if at least two trunks, when combined, total 12" in diameter. Dead limbs may be removed at any time as well as live limbs up to 2" in diameter. Removing limbs within 10' of a chimney is allowed to maintain fire clearances. Except for the above, all other pruning activity in live wood over 2" in diameter requires a permit. If requested to prune oak trees by a County of Los Angeles Fire Department Official Inspection Report, please contact one of the two offices below to have an inspection by the County Forester, who can issue the EOTP. There is no fee to obtain an EOTP.

**An EOTP may be requested from:**

L.A. County Fire Department | Environmental Review Unit | 12605 Osborne St., Pacoima, CA 91331-2129 | 818-890-5719

L.A. County Fire Department | Malibu Forestry Unit | 942 N. Las Virgenes Rd., Calabasas, CA 91302-2137 | 818-222-1108

# Appendix C: Fire-resistant Plants/Restricted Plant List/Plants to Avoid

These California natives are good options for a fire-safe landscape. Drought-tolerant nonnative species can also be good choices if they don't self-sow or naturalize; but consult the "Plants to Avoid" list on the next page before selecting any nonnatives. A good rule of thumb is to use plants with high fire resistance closer to your house and those with lower resistance farther away.

Restricted plants, mostly nonnative, are highly flammable and should not be planted near your house. If they are already growing on your property, you might want to consider phasing them out and replacing them with more fire-resistant species.

## Fire-resistant Plants

| SCIENTIFIC NAME | COMMON NAME | FIRE RESISTANCE | HEIGHT | SPREAD | EXPOSURE | FLOWER COLOR |
|---|---|---|---|---|---|---|
| Succulents: | | | | | | |
| *Agave* species | Agave | high | 1–6' | 1–10' | sun | yellow-green |
| *Dudleya* species | Bluff lettuce | high | <1.5' | varies | sun/part shade | yellow |
| *Sedum* species | Stonecrop | high | <1' | varies | sun/part shade | many |
| Low-Growing Ground-Cover Plants: | | | | | | |
| *Arctostaphylos uva-ursi* | Compact manzanita | low | 1' | 6' | sun/part shade | white-pink |
| *Baccharis pilularis* | 'Twin Peaks' dwarf coyote brush | medium | 1–2' | 6' | sun/part shade | white |
| *Ceanothus gloriosus* | Pt. Reyes ceanothus | low | 1–1.5' | 4–6' | sun/part shade | blue |
| *Ceanothus griseus var. horizontalis* | Carmel creeper | low | 1–3' | 5–15' | sun/part shade | blue |
| *Heuchera maxima* | Island alum root | medium | 1–2' | 1–2' | shade | white |
| *Mahonia repens* | Creeping barberry | medium | 1–3' | 3' | sun/part shade | yellow |
| Shrubs and Trees: | | | | | | |
| *Calliandra eriophylla* | Fairy duster | low | 3' | 4–5' | sun | pink, white |
| *Cercis occidentalis* | Western redbud | low | 10–20' | 8–10' | sun/part shade | magenta |
| *Heteromeles arbutifolia* | Toyon, hollywood | low | 6–10' | 6–10' | sun/part shade | white |
| *Mimulus aurantiacus* | Sticky monkey-flower | low | 3' | 3' | sun | orange |
| *Platanus racemosa* | California sycamore | low | 30–80' | 20–50' | sun | — |
| *Quercus* species | Oaks | low | to 100' | to 60' | sun | — |
| *Rhamnus californica* | Coffeeberry | low | 3–15' | 3–10' | sun/part shade | yellow-green |
| *Rhus integrifolia* | Lemonadeberry | low | 4–5' | 15' | sun/part shade | pink |
| *Romneya coulteri* | Matilija poppy | high | 6' | 6–8' | part shade/shade | white |

Perennials and annuals:

| | | | | | | |
|---|---|---|---|---|---|---|
| *Achillea* species | Yarrow | medium | 2–3' | may spread | sun/part shade | white, yellow |
| *Cistus* species | Rockrose | medium | 1–5' | 1–4' | sun/part shade | white, pink |
| *Clarkia amoena* | Farewell-to-spring | low | 4–5" | <1' | sun/part shade | pink, lavender |
| *Epilobium californica* (syn. *Zauschneria*) | California fuchsia | low | 1–3' | 1–3' | sun | red |
| *Eriophyllum* species | Golden yarrow | low | 1–2' | 1–2' | sun | yellow |
| *Eschscholzia californica* | California poppy | low | 8–24" | to 1' | sun | orange |
| *Iris douglasiana* | Douglas iris | medium | 1–2' | clumping | sun/part shade | varies |
| *Isomeris arborea* | Bladder-pod | high | 2–4' | 3–4' | sun/part shade | yellow |
| *Layia platyglossa* | Tidytips | low | 5–16" | to 1' | sun | yellow |
| *Lupinus nanus* | Sky lupine | low | 8–24" | to 2' | sun | blue |
| *Nemophila menziesii* | Baby blue eyes | low | 6–12'" | to 1' | sun/part shade | blue |
| *Penstemon* species | Beard tongue | low | 1–3' | 1–3' | sun/part shade | purple, red |
| *Phacelia campanularia* | California desert bluebells | low | 6"–3' | 6"–3' | sun | blue, purple |
| *Sisyrinchium bellum* | Blue-eyed grass | low | 8–10" | clumping | sun | blue-purple |
| *Sisyrinchium californicum* | Yellow-eyed grass | low | 1' | clumping | sun/part shade | yellow |

## Restricted Plant List/Plants to Avoid

| | |
|---|---|
| *Acacia* species | Acacia (trees and shrubs) |
| *Adenostema fasciculatum* | Chamise, greasewood |
| *Ailanthus altissima* | Tree of heaven |
| *Artemisia californica* | California sagebrush |
| *Bougainvillea* | Bougainvillea |
| *Cedrus* species | Cedar |
| *Cortaderia selloana* | Pampas grass |
| *Cupressus* species | Cypress |
| *Dodonea viscosa* | Hopseed bush |
| *Eriogonum fasciculatum* | Buckwheat |
| *Eucalyptus* species | Eucalyptus, gum tree |
| *Gelsemium sempervirens* | Carolina jessamine |
| *Hakea suaveolens* | Hakea |
| *Hedera* species | Ivy |
| *Juniperus* species | Juniper |
| *Malosma laurina* | Laurel sumac |
| *Pennisetum* species | Fountain grass |
| *Phoenix canariensis* | Canary Island date palm |
| *Picea* species | Spruce |
| *Pinus* species | Pine |
| *Ricinus communis* | Castor bean |
| *Spartium junceum* | Spanish broom |
| *Taxus* species | Yew |
| *Thuja* species | Arborvitae |
| *Washingtonia* species | California and Mexican |

Spanish Broom

Pampas Grass

Washingtonia Palm

**Consult the local L.A. County Fire Department** Forestry Unit, Fuel Modification Unit, or Brush Clearance Unit with questions.

# Appendix D: Invasive Plants, Wildland Health and Fire Safety

Invasive plants are a small subset of the nonnative or ornamental plants that grow in southern California. Most ornamental plants don't escape from yards and gardens, but the handful that do can cause serious problems. Animals, people, wind, and water can move plants and seeds far from where they were planted. Once established in natural areas, invasive plants displace native vegetation and greatly reduce the amount and quality of habitat for native wildlife. These plants can contribute to soil erosion, clog streams and rivers, and increase flooding, as well as increase fire risk by creating continuous fuel beds.

By producing more biomass than native vegetation they increase the potential for ignition. Because these weedy species thrive in disturbed soils, improper clearance or overclearance often leads to a landscape dominated by invasive plants. This not only increases the fire risk, but also increases the effort and cost required for maintenance. Invasive grasses like pampas and fountain grass produce a great deal of dry, dead fuel. Invasive groundcovers such as ice plant, ivy, and periwinkle can harbor dead thatch under a green top layer, hiding fuels that can allow a fire to smolder for long periods even after the flame front has passed. Invasive trees, like Mexican fan palm and eucalyptus, produce dead fronds or woody materials that can act like flaming arrows during windy conditions, thereby spreading fire.

When choosing plants for your fire-safe landscape, you can help protect the health of neighboring wildlands by avoiding invasive species, or removing those already present. For more information about invasive plants and fire, and descriptions of several of the worst wildland weeds, visit the University of California's SAFE Landscapes Program at http://ucanr.org/safelandscapes. You can find comprehensive lists, developed by the California Invasive Plant Council, at www.cal-ipc.org and the Los Angeles and San Gabriel Rivers Watershed Council, at www.weedwatch.org, as well as www.lasmmcnps.org/invasive.html. Remember when buying plants to make sure to check the scientific name so that you are getting the species you want!

For more information on native plants, see Appendix C, or go to: www.ci.malibu.ca.us/index.cfm/fuseaction/detail/navid/409/cid/9314/

# Appendix E: Glossary

**Aerial fuels:** All live and dead vegetation located in the forest canopy or above the surface fuels, including tree branches and crowns, snags, moss, and tall brush.

**Conflagration:** A raging, destructive fire; often used to denote such a fire with a moving front, as distinguished from a firestorm.

**Defensible space:** Defensible space is the area around a structure free of flammable plants and objects. It creates a zone in which firefighters can operate safely in order to help protect a home during a wildfire. This space is wide enough to prevent direct flame impingement and reduce the amount of radiant heat reaching the structure. The defensible space for each structure varies, depending on the type of vegetation and topography.

**Fuel modification:** This term refers to modifying vegetation in an environmentally sensitive way to reduce the fire hazard. Planned defensible space that reduces radiant and convective heat allows fire suppression personnel to work in a safer environment. Fuel modification is different from brush clearance in that vegetation removal is planned more strategically.

**Ground fuels:** All material lying on or immediately above the ground, including needles or leaves, duff, grass, small deadwood, downed logs, stumps, large limbs, and low brush.

**High Hazard Area:** Geographic area prone to significant wildfire events owing to vegetation, topography, and weather. All of Topanga Canyon, Malibu, and the Santa Monica Mountains in general are in the Very High Fire Hazard Severity Zone.

**Lollipop:** To limb up trees and shrubs by pruning the lower branches off, leaving one to three trunks, removing deadwood while keeping the canopy relatively intact. The purpose is to separate ground fuels from aerial fuels and reduce fuel load.

**Slope:** Determined by measuring rise over run (rise/run) as a percentage.

**Steep slope:** A gradient of at least 45 degrees or 50 percent, where erosion is a significant consideration.

# together

## Our Partners

## Santa Monica Mountains Fire Safe Alliance

RESOURCE CONSERVATION DISTRICT OF THE SANTA MONICA MOUNTAINS

CALIFORNIA COASTAL COMMISSION

UC CE University of California

California Fire Safe Council

USDA NRCS United States Department of Agriculture Natural Resources Conservation Service

California FAIR Plan PROPERTY INSURANCE

SOUTHERN CALIFORNIA EDISON

CALIFORNIA STATE PARKS

Santa Monica Mountains Conservancy

CITY of CALABASAS

MOUNTAINS RESTORATION TRUST

# thank you

Special thanks to these professionals
for their time and services:

LA County Deputy Forester Ron Durbin,
Prevention Bureau, Forestry Division

L.A. County Fire Captain Drew Smith,
Fire Behavior Analyst, Air and Wildland Division

Southern California Edison

PHOTOGRAPHY
Tom Gamache for Wandering Around Outdoors • tomgamache.com
Ron Durbin, LA County Deputy Forester
Jason Casanova, LASGRWC
Michael Nickel, LASGRWC
Drew Ready, LASGRWC
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