



University of California
Division of Agriculture and Natural Resources

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Landscaping Tips to Help Defend Your Home from Wildfire

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You can have both a beautiful landscape and a defensible fire-safe zone around your home. A minimum defensible space of 100 feet around your home is required by California law (Public Resources Code 4291). This space consists of a 30-foot Lean, Clean, and Green zone and a 70-foot reduced fuel zone. The goal is to protect your home while providing a safe area for firefighters. Local terrain and

wind patterns may make it prudent to have an even larger zone. Check with your local fire department for defensible space requirements in your area. Current regulations also allow an insurance company to require additional clearance.

The accompanying three-panel poster provides useful guidelines for people who are establishing or maintaining defensible space around their homes. We recommend using the following publications as support documents for the poster:

- **Home Landscaping for Fire** — ANR Publication 8228. This publication discusses how and where to plant and maintain vegetation, including hydrozoning, use of hardscape, and annual maintenance.
<http://anrcatalog.ucdavis.edu/pdf/8228.pdf>
- **Homeowners Check List-How to Make Your Home Fire Safe** — California Department of Forestry and Fire Protection (CAL FIRE)
http://www.fire.ca.gov/about_content/downloads/CDFchecklist2006.pdf
- **Why 100 Feet?-Protect Your Home...and Property** — California Department of Forestry and Fire Protection (CAL FIRE)
http://www.fire.ca.gov/about_content/downloads/CDFWHY100FEETBROCH2006.pdf
- **100' Defensible Space: Make Your Home Fire Safe**
http://www.fire.ca.gov/about_content/downloads/Defens_space_flyer4_11final.pdf

ADDITIONAL INFORMATION ON SPECIFIC POINTS IN THE POSTER

Fire Resistant Plants (from *Home Landscaping for Fire*). It is important to remember that, given certain conditions, all plants burn regardless of how they are classified. In general, select plants that are low growing, open structured, and less resinous. However, how your plants are maintained and where they are placed is as important as the species of plants that you choose. Cultural practices and landscape management (e.g., pruning, irrigation, and cleanup) have a greater impact on whether or not a plant ignites than does the species. When choosing plants for a fire safe landscape, select those with the following characteristics:

- High moisture content in leaves
- Little or no seasonal accumulation of dead vegetation
- Open branching habits
- Fewer total branches and leaves
- Slow growing, so less pruning is required
- Nonresinous material on the plant (i.e., stems, leaves, or needles that are not resinous, oily, or waxy). Junipers, pines, spruces, and firs are resinous and highly flammable.
- Examples: yarrow, candytuft, rock rose, creeping rosemary, goldmoss sedum

Defensible Space Landscaping in the Urban/Wildland Interface: A Compilation of Fire Performance Ratings of Residential Landscape Plants. This is a UC “work in progress” online publication (<http://nature.berkeley.edu/~fbeall/HODefSpaceGuide.pdf>) that provides more detail about fire resistant plants.

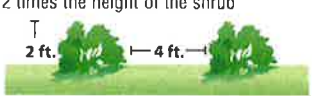
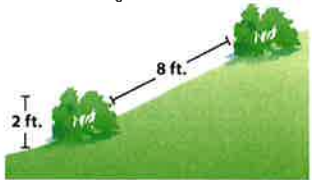
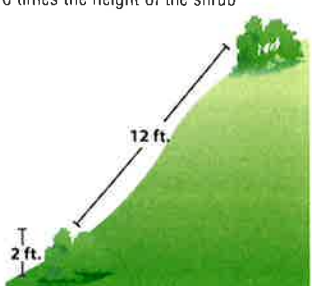
Fire Resistant Plant Information Specific to El Dorado County Areas. Look under the *Fire—Wildland/Urban Interface* heading at http://ceeldorado.ucdavis.edu/Natural_Resources/NR_Publications.htm

Reduced Fuel Zones Greater than 100 Feet (from *Home Landscaping for Fire*) The reduced fuel zone is an area adjacent to the 30-foot Lean, Clean, and Green zone. It extends out *at least* an additional 70 feet away from the house (for a total of 100 feet), where the ground slope around the house is less than 10 percent.

To determine the additional distance required for slopes of more than 10 percent, multiply the number of degrees over 10 percent for the uphill and sides by 3 and add it to 100. On the downhill side, multiply the number of degrees over 10 percent by 5 and add it to 100. Your local fire department or your insurance company may ask that you prepare a larger defensible area. Contact them for requirements in your area.

Trees. For slopes that are less than 20 percent, trim or space existing trees so that there is 10 feet of space between the tips of their limbs. Increase the space to 20 feet for slopes that are 20 to 40 percent. For steep slopes over 40 percent, 30 feet of spacing is needed. When planting trees, allow for future growth by spacing them 20 to 30 feet apart. If trees are over 18 feet tall, prune the lower limbs up to a height of 6 to 15 feet. In order to avoid stress to the tree, no more than one-third of a tree’s live limbs should be removed by pruning. Remove all shrubs from around the base of trees.

Shrubs. To reduce the fire-spreading potential of shrubs, only plant varieties that are widely separated, low growing, deciduous, and nonresinous. These can be planted individually or in small clumps. The spacing between plants depends on the slope of the property. The rule of thumb for spacing is illustrated below (illustrations courtesy California Department of Forestry and Fire Protection [CAL FIRE]).

Slope	Spacing
0 to 20%	2 times the height of the shrub 
20 to 40%	4 times the height of the shrub 
Greater than 40%	6 times the height of the shrub 



Please contact your local master gardener for more information or go online to <http://camastergardeners.ucdavis.edu>.

We gratefully acknowledge support for this project from the *Elvenia J. Slosson Research Endowment for Ornamental Horticulture*. Content for this publication was excerpted from *Home Landscaping for Fire* (ANR Publication 8228), by Glenn Nader, Gary Nakamura, Mike De Lasaux,

Steve Quarles, and Yana Valachovic; *Why 100 Feet? Protect Your Home . . . and Property, and Homeowners Check List: How to Make Your Home Fire Safe*, California Department of Forestry and Fire Protection (CAL FIRE). Poster design by Will Suckow Illustration. Spanish translation by Myriam Grajales-Hall and Andrew Kramer. Poster illustrations courtesy of CAL FIRE.

RESOURCES ACCESSIBLE ONLINE

Web Sites

California Department of Forestry and Fire Protection (CAL FIRE)

<http://www.fire.ca.gov/>

California Master Gardeners

<http://camastergardeners.ucdavis.edu/>

Center for Fire Research and Outreach

<http://firecenter.berkeley.edu>

El Dorado County Master Gardeners Fire Resistant Landscaping

http://ceeldorado.ucdavis.edu/Master%5FGardener/Firesafe_Landscaping.htm

Homeowners Wildfire Mitigation Guide

<http://groups.ucanr.org/HWMG>

Wildland Fire (Los Angeles County Cooperative Extension)

http://celosangeles.ucdavis.edu/Natural_Resources/Wildland_Fire.htm

En Español

Fire Safety Education en Español (CAL FIRE)

http://www.fire.ca.gov/education_es.php

Publications/Brochures

Abiotic Disorders of Landscape Plants: A Diagnostic Guide University of California ANR Publication 3420

<http://anrcatalog.ucdavis.edu/LawnGarden/3420.aspx>

ANR Core Issues and Target Opportunities

<http://ucce.ucdavis.edu/files/filelibrary/5728/21855.pdf>

A Property Owner's Guide to Reducing Wildfire Threat University of California ANR Publication 21539

<http://anrcatalog.ucdavis.edu/FireSafety/21539.aspx>

Are You Doing the Right Thing the Wrong Way?—Equipment Use California Department of Forestry and Fire Protection (CAL FIRE)

http://www.fire.ca.gov/about_content/downloads/EquipmentUse2006.pdf

Defensible Space Landscaping in the Urban/Wildland Interface:

A Compilation of Fire Performance Ratings of Residential Landscape Plants

<http://nature.berkeley.edu/~fball/HODefSpaceGuide.pdf>

Fire in California's Oak Woodlands

http://nature.berkeley.edu/forestry/sodsymposium/Fire_in_Cal_Oak_Woodlands_McCreary_623041.pdf

General Guidelines for Creating Defensible Space

State Board of Forestry and Fire Protection (BOF) (CAL FIRE)

http://www.bof.fire.ca.gov/pdfs/Copyof4291finalguidelines9_29_06.pdf

Home Landscaping for Fire

University of California ANR Publication 8228

<http://anrcatalog.ucdavis.edu/pdf/8228.pdf>**Homeowners Check List: How to Make Your Home Fire Safe**

California Department of Forestry and Fire Protection (CAL FIRE)

http://www.fire.ca.gov/about_content/downloads/CDFchecklist2006.pdf**Making Your Property Fire-Safe**<http://ucce.ucdavis.edu/files/filelibrary/1359/41666.pdf>**S.A.F.E. Landscapes 2008 Calendar**<http://ucce.ucdavis.edu/survey/survey.cfm?surveynumber=2100>**S.A.F.E. Landscapes in the WUI (Wildland Urban Interface)**<http://ucce.ucdavis.edu/files/filelibrary/1359/41665.pdf>**Why 100 Feet?—Protect Your Home...and Property**http://www.fire.ca.gov/about_content/downloads/CDFWHY100FEETBROCH2006.pdf**100' Defensible Space: Make Your Home Fire Safe**http://www.fire.ca.gov/about_content/downloads/Defens_space_flyer4_11final.pdf**En Español****Proteja su propiedad de los incendios de maleza****(A Property Owner's Guide to Reducing Wildfire Threat)** University of California ANR Publication 21545<http://anrcatalog.ucdavis.edu/FireSafety/21545.aspx>**FOR MORE INFORMATION**

You will find related information in these titles and in other publications, slide sets, CD-ROMs, and videos from UC ANR:

Abiotic Disorders of Landscape Plants: A Diagnostic Guide, Publication 3420*A Property Owner's Guide to Reducing Wildfire Threat*, Publication 21539*Home Landscaping for Fire*, Publication 8228To order these products, visit our online catalog at <http://anrcatalog.ucdavis.edu>. You can also place orders by mail, phone, or FAX, or request a printed catalog of publications, slide sets, CD-ROMs, and videos from

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An electronic version of this publication is available on the ANR
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Ask a UC Master Gardener



Landscaping Tips to Help Defend Your Home from Wildfire

Through proper planning, you can have both a beautiful landscape and a fire safe zone around your home.

Begin by creating and maintaining a *Defensible Space* of 100 feet around your home that includes:

- A **Lean, Clean, and Green Zone** of 30 feet, **plus**
- A **Reduced Fuel Zone** of 70 feet

Note: Even greater defense zone widths are necessary when your home is on a steep slope or in a windswept area.

Please contact your local master gardener for more information <http://camastergardeners.ucdavis.edu>

We gratefully acknowledge support for this project from the *Elvenia J. Slosson Research Endowment for Ornamental Horticulture*.



Content for this publication was excerpted from: *Home Landscaping for Fire*, ANR Publication 8228, Glenn Nader, Gary Nakamura, Mike De Lasaux, Steve Quarles, Yana Valachovic; *Why 100 Feet? Make Your Home Fire Safe*, and *Homeowners Checklist – How to Make Your Home Fire Safe*, California Department of Fire Protection (CDF).

Project management: Pamela M. Geisel; Donna C. Seaver. Spanish translation: Myriam Grajales-Hall, Andrew Kramer. Poster design: Will Suckow Illustration. Poster illustrations: CDF.

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Create a Defensible Space of 100 Feet Around Your Home

First, create a Lean, Clean, and Green Zone

by removing all flammable vegetation and combustible materials within 30 feet immediately surrounding your home.

- Keep trees trimmed at least 10 feet from chimneys and remove dead branches hanging over structures.
- Remove build-up of needles and leaves from roof and gutters.
- Remove dead and dying plants, fallen leaves, needles, twigs, bark, cones, pods, small branches, etc.
- Regular maintenance (pruning, weed control, adequate irrigation) is necessary to maintain the fire resistance of your landscape.
- Increase spacing between plants.
- Landscape with fire resistant plants – low growing, open structured, and less resinous.
- When clearing vegetation use care in operating equipment such as lawnmowers.



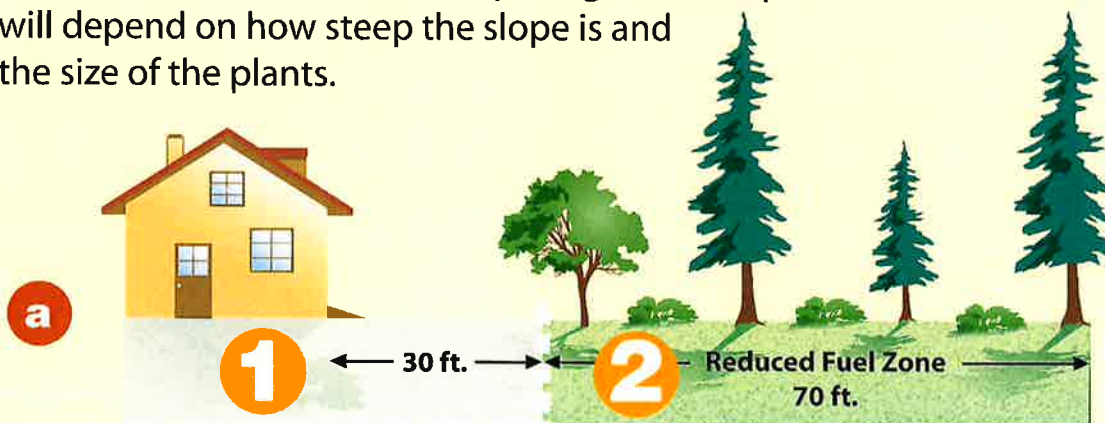
Create a Defensible Space of 100 Feet Around Your Home

Next, create a **Reduced Fuel Zone**

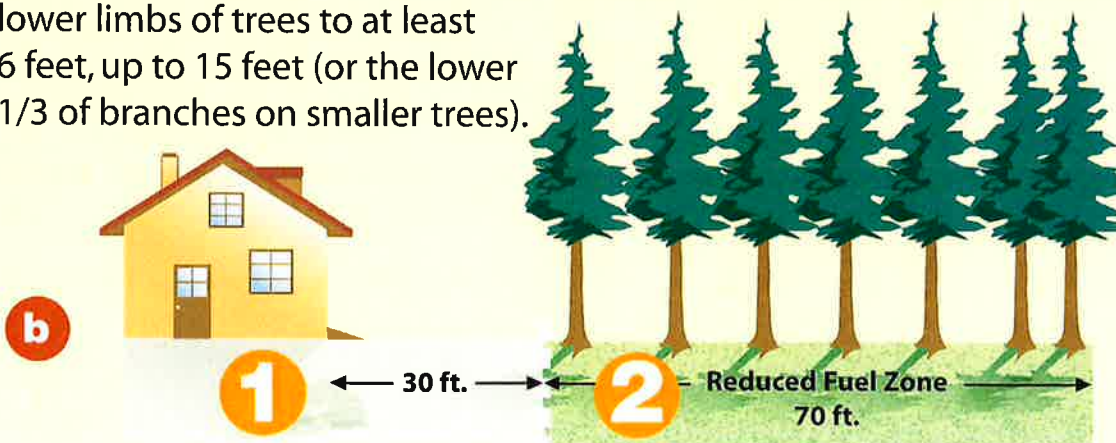
adjacent to your *home defense zone*, extending out at least an additional 70 feet, or to your property line. Greater defense zone widths are necessary when your home is on a steep slope or in a windswept area.

Open space between plants improves the chance of stopping a wildfire. You have two options:

- a) Create horizontal and vertical spacing between plants. The amount of space will depend on how steep the slope is and the size of the plants.



- b) Large trees do not have to be cut and removed, but plants growing beneath them that are greater than 4 inches in height should be removed. Remove lower limbs of trees to at least 6 feet, up to 15 feet (or the lower 1/3 of branches on smaller trees).



Find Information Regarding Fires in Los Angeles County!
Encuentre información sobre los incendios en el condado de
Los Angeles

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Pet & Large Animal Preparedness

Your pets are an important member of your family, so they need to be included in your family's emergency plan. Advance planning is often needed for large animals, including transportation and sheltering in the event of an evacuation.

Basic Pet Preparedness Tips

✓ **Have an evacuation plan for your pet.** Many public shelters and hotels do not allow pets inside. Know a safe place where you can take your pets before disasters and emergencies happen.

✓ **Develop a buddy system.** Plan with neighbors, friends or relatives to make sure that someone is available to care for or evacuate your pets if you are unable to do so.

✓ **Have your pet microchipped.** Make sure to keep your address and phone number up-to-date and include contact information for an emergency contact outside of your immediate area.

✓ **Contact County Animal Services** to get additional advice and information on how to care for your pet in case of an emergency. Call 805-681-4332 during normal business hours.



Tips for Large Animals



If you have large pets or animals such as horses, goats or cows on your property, be sure to prepare before a disaster.

In addition to the tips above:

✓ **Evacuate animals earlier, whenever possible.** Map out primary and secondary routes in advance.

✓ **Ensure all animals have some form of identification.**

✓ **Obtain or coordinate necessary vehicles and trailers** for transporting and supporting each type of animal. Also identify experienced handlers and drivers.

✓ **Ensure destinations have food, water, veterinary care and handling equipment.**

✓ **If evacuation is not possible, animal owners must decide whether to move large animals to a barn or turn them loose outside.**

Build a Kit

When building kit for pets, consider having two kits, one larger kit if you are sheltering in place and one lightweight version for if you need to evacuate. Review your kits regularly to ensure that their contents, especially foods and medicines, are fresh.

Here are some items you may want to include in an emergency kit for your pet:

✓ **Food.** Keep several days' supply of food in an airtight, waterproof container.

✓ **Water.** Store a water bowl and several days' supply of water.

- ✓ **Medicine.** Keep an extra supply of the medicine your pet takes on a regular basis in a waterproof container.
- ✓ **First aid kit.** Talk to your veterinarian about what is most appropriate for your pet's emergency medical needs.
- ✓ **Collar with ID tag and a harness or leash.** Include a backup leash, collar and ID tag. Have copies of your pet's registration information and other relevant documents in a waterproof container and available electronically.
- ✓ **Traveling bag, crate or sturdy carrier,** ideally one for each pet.
- ✓ **Grooming items.** Pet shampoo, conditioner and other items, in case your pet needs some cleaning up.
- ✓ **Sanitation needs.** Include pet litter and litter box (if appropriate), newspapers, paper towels, plastic trash bags and household chlorine bleach to provide for your pet's sanitation needs.
- ✓ **A picture of you and your pet together.** If you become separated from your pet during an emergency, a picture of you and your pet together will help you document ownership and allow others to assist you in identifying your pet.
- ✓ **Important documents such as copies of pet insurance policies and vaccinations** saved electronically or in a waterproof, portable container.
- ✓ **Familiar items.** Put favorite toys, treats or bedding in your kit. Familiar items can help reduce stress for your pet.

Maintain your Kit

After assembling your pet's kit remember to maintain it so it's ready when needed:

- ✓ Keep canned food in a cool, dry place.
- ✓ Store boxed food in tightly closed plastic or metal containers.
- ✓ Replace expired items as needed.
- ✓ Re-think your pet's needs every year and update your kit as their needs change.

En Español