



Creating Defensible Space to Help Survive a Wildfire Ember Storm

DURING AN EMBER STORM, flying embers can ignite anything combustible in their path, including your home and anything near it, such as plants or patio furniture.

Defensible homes should have nothing ignitable within the first 5 feet, and reduced fuels out to 100 feet or the property line (whichever is closer).

Creating and maintaining defensible space around a house—while hardening the home against wind- or heat-driven embers, flames, and heat—will increase the likelihood that it survives a wildfire. Defensible space also helps firefighters be safer while protecting property.

If a home is difficult to find, is surrounded by dense vegetation, or doesn't provide enough safe space for firefighters to work, it may be too dangerous to attempt to save.

This brochure is a guide to help you create your defensible space and find additional information and resources.

THREE WAYS YOUR HOME CAN BE EXPOSED TO FIRE



EMBER STORM

Embers are small pieces of burning material that can travel more than a mile ahead of a wildfire. They can create spot fires when they land on combustible materials, such as leaves in your gutter or plants under your windows.



RADIANT HEAT

Radiant heat generated from burning structures or plants can be hot enough to ignite a house without direct flame contact. This is particularly challenging in densely populated areas, where the heat from one burning home can ignite the next.



DIRECT FLAME

Depending on time and exposure, direct flame contact can ignite your home. The flaming front of a wildfire is often not hot enough to ignite a house, but plants under windows ignited by embers or direct flame can break glass, allowing fire to enter the house.

Embers are responsible for most damage during wildfires. They can accumulate on your home, deck, or porch and ignite plants, mulch, leaves, fencing, or furniture. They can also be forced into gaps in the home (e.g. attic vents or an open or broken window) and burn the home from the inside out. When this happens, there can be little damage to the surrounding vegetation, leaving people puzzled as to what caused the home to burn.

Embers cause the majority of wildfire home ignitions.

PHOTO CREDITS: INSURANCE INSTITUTE FOR BUSINESS & HOME SAFETY (above left); TENNESSEE DIVISION OF FORESTRY (center)

Home and Property

WE'VE LEARNED FROM RECENT FIRES. Hardening your home and keeping the 5 feet closest to your house clear of flammable materials greatly improves the chance of surviving a fire.

Maintaining defensible space is the law within 100 feet of a home in wildfire-prone areas, and highly recommended elsewhere. If a garage, shed, your neighbor's house, or the property line is closer than 100 feet, it is especially important to "harden" the home itself to reduce vulnerability to radiant heat, and to work together with your neighbors to reduce risk—a great way to build community while protecting assets.

See the *California Fire Safe Council, Home Hardening* brochure for more information on structure protection.



Ladder Fuels and Fuel Continuity

Fire needs fuel to burn. A *fuel ladder* occurs when grass or other surface fuel carries flames into shrubs or small trees and then the fire climbs into larger trees—a continuous vertical line of fuel. Surface and ladder fuel is almost always necessary to sustain fire in upper tree branches. Defensible space breaks up the continuity of fuel both horizontally and vertically, to interrupt the spread of fire to your home.

EXAMPLE OF A FUEL LADDER
Continuous vegetation reaches into upper tree branches, providing a "ladder" for the fire to climb.



Helpful Resources

The **CALIFORNIA FIRE SAFE COUNCIL (CFSC)** helps coordinate a strong network of partnerships with local, regional, state, and national organizations in order to help California residents acquire the education, resources, and tools they need to be better prepared for wildfire.

Defensible Space is the law in wildfire-prone areas. Contact CAL FIRE or your local fire department for specific defensible space information and local ordinances.

ReadyForWildfire.org/Defensible-Space

Contact your local Fire Safe Council to get involved.

FireSafeCouncil.org



Sign up for CAL FIRE Alerts:

ReadyForWildfire.org/Ready-for-Wildfire-App

Look for an emergency alert system in your county.

ALWAYS CALL 911 FOR EMERGENCIES

This publication is made possible through a grant from the USDA Forest Service, Pacific Southwest Region Cooperative Fire Program. The California Fire Safe Council is an equal opportunity provider.



Recommendations for Creating Defensible Space

HOMES SURVIVE WILDFIRE THROUGH A COMBINATION OF THE FOLLOWING FACTORS:

- 1) Awareness and management of combustible materials on the property, especially within the first 5 feet of the home.
- 2) Incorporation of fire- and ember-resistant construction materials, installation details, and maintenance.
- 3) Careful landscape selection, placement, and maintenance.

For best practices to protect your home and other structures, see the *California Fire Safe Council, Hardened Homes* brochure.

Defensible Space is the law in wildfire-prone areas. These condensed recommendations address legal requirements and best practices for preparing and protecting your property.

For more information contact CAL FIRE or your local fire department.

ZONE 0

0 feet – 5 feet from buildings, decks, and other structures

The goal is to avoid home ignition from blowing embers.

- Use noncombustible materials such as rock, stone pavers, cement, bare earth, gravel, or sand.
- Remove all plants and shrubs near windows.
- Remove leaves and needles from your roof and rain gutters.
- Clear vegetation and items that could catch fire from around and under decks.
- Remove dead branches that overhang or touch your roof. Keep branches 10 feet away from your chimney.
- Remove all leaves, needles, or other debris that fall in this zone.

ZONE 1

5 feet – 30 feet from buildings, decks, and other structures

The goal is to reduce heat and movement of flame.

- Remove all dead plants, grass, and weeds.
- Actively prune live shrubs.
- Relocate woodpiles outside of this zone.
- Avoid extensive use of mulch, which can convey fire to the house.
- Limit fallen leaves, needles, twigs, bark, cones, and small branches to a depth of 2 inches.
- Move all gas and propane tanks outside of this zone.

ENTIRE PROPERTY

5 feet – 100 feet from buildings, decks, and other structures, or to the property line

- Create islands of vegetation with horizontal spacing between shrubs and trees.
- Create vertical spacing between grass, shrubs, and trees.
- Choose low-growing, irrigated, non-woody plants such as vegetables, succulents, erosion-control grasses, flowers, or lawn to create landscaping in this zone.
- Mow or remove dead or dried vegetation.
- Trim trees regularly to maintain a minimum of 10 feet of clearance between branches of adjoining trees or shrubs.
- Mow any grass to a maximum height of 4 inches.
- To protect water quality, maintain vegetation near waterways; do not clear to bare soil. Vegetation removal can cause soil erosion that damages streams, especially on steep slopes. Remove dead trees and shrubs, leaving the roots in place, if practical.
- Break up dense shrub cover on slopes by creating small islands of pruned shrubs staggered horizontally.
- Prior to evacuation, pull patio furniture, play sets, and gas BBQ tanks as far as possible from any structure, and bring cushions inside.



LANDSCAPING TIPS

Proper Placement Makes A Difference

Remember, any plant can burn under the right conditions. For all plants, maintenance is key.

When choosing species to plant in your 5- to 30-foot defensible space zone, look for plants with these characteristics:

- Able to store water in leaves and stems.
- Produce limited dead and fine material.
- Maintain high moisture content with limited watering.
- Low-growing or open form.
- Open loose branches with a low volume of total vegetation.
- Low levels of volatile oils or resins.
- Slow growing with little maintenance needed.
- Not considered invasive.