

# ISSUE #3: LAND USE / FUEL MANAGEMENT

www.sdfiresafety.org

## Problem

*Many homes burn down during wildland fires even though the homeowner appears to have complied with all fire safety regulations.*

## Solution

**The vulnerability of a home during a wildland fire depends on three basic variables: location, building design, and defensible space. Fire exploits the weakest link. If any one of these variables is not properly addressed, the chances a home will burn during a wildland fire increases dramatically.**

## Location

The placement of a home within the wildland/urban interface is critical. While offering the best views, home sites located at the tops of canyons or within mountain saddles are extremely dangerous. These topographical features concentrate both heat and embers and funnel them directly at the home. Such locations have been the sites of both firefighter and homeowner fatalities. Consequently, homes within such vulnerable locations are usually considered indefensible by firefighters and they will not risk their lives to protect them. While some fire risk can be mitigated on such sites by building design and fuel management, it is impossible to make them fire safe.

## Design

The primary cause of home ignition during a wildland fire is by embers landing in vulnerable locations or entering attic spaces through roof vents. Therefore it is vital to install attic vents designed to resist ember entry, box-in all exposed wood surfaces (eaves, undersides of decks, etc.), and eliminate flammable surfaces that possess nooks and crannies in which embers can settle (tile/concrete roof edges, porch corners, etc.)

## Defensible Space

At the minimum, all flammable material within the first 30 feet around a home should be removed (including stacks of wood, patio furniture, etc.) and vegetation within the next 70 feet should be properly thinned to 50% cover and managed to eliminate a continuous bed of fuel that could bring fire to the house. Do NOT clear vegetation down to the dirt! This will encourage the growth of weeds which, if not continually removed, can increase the fire hazard. It is critical to create a managed zone with lightly irrigated vegetation that will form a barrier to embers and



heat flow. Properly managed vegetation helps to break up and cool air currents that send embers and heat toward the structure. Plants that can produce embers (palm trees, acacia, etc.) should not be within the 100 foot defensible space zone. Native plants are OK if properly thinned. Homes above slopes may need additional fuel management beyond 100 feet.

The most common wildland vegetation type in San Diego County is chaparral (see photo), a shrub dominated ecosystem that provides important watershed, habitat, and recreational values. While flammable, we can co-exist with the system by creating fire-safe communities.

### **How to reduce fire risk is not a one-answer question.**

It is critical to address all three variables of the fire-risk reduction triad: location, design, and defensible space.

## References:

Cohen, J.D. 1999. Reducing the wildland fire threat to homes: where and how much? USDA Forest Service Gen. Tech. Report PSW-GTR-173, pp 189 –195.

Cohen, J.D. 2000. Preventing disaster: home ignitability in the wildland-urban interface. *Journal of Forestry* 98: 15 – 21.

Halsey, R.W. 2008. *Fire, Chaparral, and Survival in Southern California*. Second edition. Sunbelt Publications, San Diego, CA.