



UI Extension Forestry Information Series II

Fire No. 14

Are You Ready for a Blizzard of “Red Snow?”

Yvonne Barkley

We’ve seen it on the news, extreme fire behavior in areas where wildlands meet rural developments, an area called the wildland-urban interface (WUI). At first look all you see are buildings burnt to the ground - but look again. Those piles of ash that were once a family home are surrounded by live trees and shrubs. These homes, which were vulnerable to ignition by showers of embers or firebrands, were lost to a blizzard of “red snow”

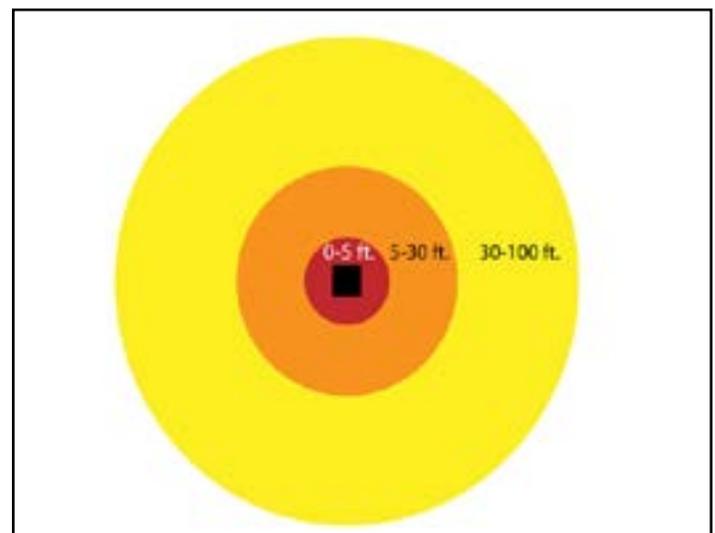
The story usually goes like this. A wildland fire starts under extreme fire conditions – it’s hot and humidity is low. Vegetation is bone dry. More often than not a dry lightning moves through and ignites several spot fires over a large area, or a human starts the blaze. High winds quickly spread flames and firebrands into adjacent fuels and up slopes and canyons. This combination of events produces erratic, fast-spreading, and highly dangerous fire behavior.

There is a home at the top of a slope and it is highly ignitable. The wildfire rushes up the slope and showers the home in a blizzard “red snow”. Multiple areas ignite. The burning home now becomes fuel, with firebrands lofting off of it, landing on nearby roofs and in yards, igniting vegetation and creating spot fires. Multiple homes simultaneously ignite, adding to the chaos of flames, firebrands, smoke, and wind. With homeowners evacuated, firefighter safety threatened, and resources overwhelmed, initially small, easy-to-extinguish ignitions result in mass destruction.

And none of it had to happen.

The Home Ignition Zone (HIZ).

Whether at work or evacuated, homeowners are often not home when a wildfire threatens. In extreme fire conditions, firefighters will not be able to defend every threatened home and *so the survivability of your house depends on you.* The home ignition zone (also called defensible space) is the 100-foot radius (200 feet on a steep slope) that surrounds structures and often intersects with neighboring properties. Here is where homeowners and their neighbors need to concentrate fire safety efforts.



The Home Ignition Zone – the home and the first 5 feet are very important in preventing home ignitions.
Graphic courtesy of IBHS.

In several case studies it was found that more than 90% of home ignitions were from firebrands entering an area well ahead of the flaming front of the wildfire and that home ignitions hinged on the exterior materials and design of the buildings and their proximity to burning objects ignited by firebrands. When firebrands shower down upon your property they land in the many nooks and crannies that every home has (often the same places where actual snow accumulates) and ignite the combustible surfaces they accumulate on or next to.



Several case studies have shown that more than 90% of WUI home ignitions were from airborne firebrands landing on combustible materials.
Photo courtesy of Steve Quarles, Insurance Institute of Business and Home Safety.

A house that does not ignite, will not burn.

There are large and small details to consider when decreasing your home's ignition potential.

Your roof.

Highly combustible roofs (wood shakes and shingles) should be replaced with a Class-A fire-rated roof as soon as financially possible. Debris that accumulates in gutters, next to and on top of skylights, at roof-to-wall areas, and where siding intersects with the roof should be removed regularly. Install metal flashing a minimum of six inches up from the roof against combustible siding. The upper edge of the flashing should be

tucked behind the siding at a lap joint to prevent moisture damage.

Roofs with openings between the roof covering and the roof deck (e.g., clay barrel-styles, some metal types, and flat cement tile roofs) should be filled ("bird-stopped") with commercially available products or with a plug of mortar mix or steel wool to prevent embers from entering the sub-roof area. All chimneys should have spark arrestors and operable skylights should be closed when you leave the house.

Vents.

Your home has many vents and all should have screens or be able to be closed in the event of a wildfire. Install 1/8" metal mesh screening on all vents and make sure they are kept clean and well-maintained. Replace open dryer vents with louvered or metal-plate styles that open only when the dryer is on. Make covers for foundation and attic vents to use in the event of a wildfire and remove them once the threat has passed.

The foundation.

Open styles, such as post-and beam foundations, are vulnerable to accumulating debris and should be enclosed with noncombustible materials and ventilated according to local building codes. Combustible materials stored next to or near foundations should be moved at least 30' from structures.

Siding.

Homes with combustible siding should make sure there is at least six inches between the ground and the first row of siding. The first five feet of defensible space against the building should be kept free from combustible vegetation and mulch.

Eaves.

Open eaves should be enclosed with a boxed-in or soffit-eave design.

Windows.

In the event of a wildfire, CLOSE ALL WINDOWS. Single-pane windows should be replaced with dual- or multi-paned windows, preferably with tempered glass. Windows should be fitted with metal screens to reduce radiant heat exposure to the glass and protect against ember entry if left open.

Garage. Attached garages are part of the house. Install doors on open storage areas and weather seal the perimeter of garage doors to ensure embers cannot enter the space.



"Red snow" igniting multiple spot fire, well removed from the flaming front of the wildfire.
Photo courtesy of Mike Dannenberg, Bureau of Land Management.

If it's connected to the house, it's part of the house.

Decks.

Decks that overhang steep slopes need double the defensible space to compensate for the slope. Decks made of highly combustible materials (wood, plastic, and wood-plastic composites) should be replaced with materials such as good condition, fire-rated or fire-resistant treated materials. Regularly clean debris out of the cracks between deck boards and other areas where debris gathers. Enclose open areas under decks with noncombustible siding and ventilate according to local building codes. Combustible materials stored under the deck (firewood, lumber) should

be moved and stored at least 30' from the house and surrounded with defensible space.

Fences.

Many types of fences are combustible. Replace combustible pieces of fence with noncombustible fencing where it attaches to the home. Keep fence clear of vegetation.

The devil is in the details.

The big details are fairly obvious once you start looking at your home with fire safety in mind. But you can blow it all by overlooking one little detail where embers can accumulate, such as a seat cushion. The little details usually involve the day-to-day things we have outside for summer living – patio furniture for example – and are *the things we need to put away when we are not at home or before being evacuated.*

Outdoor furniture, as well as cushions and pillows, can quickly accumulate embers and ignite. Designate an indoor area where combustible outdoor furniture and cushions can be stored. Take down hammocks and store indoors as well.

Porch and deck accessories include wicker baskets, door mats, newspapers, pine cones, dried flower arrangements, books and magazines, games, etc. It is also where miscellaneous tools such as brooms, hoses, and garden gloves accumulate - all vulnerable places for embers to gather. Consider putting flammable accessories and tools indoors when not at home.

Flowerbeds and wall-mounted flowerboxes also make a good place for embers to accumulate. Keep plant materials well irrigated and remove all dead foliage. Replace known hazardous plant materials (junipers) with less hazardous selections (succulents and well-irrigated herbaceous plants). Remove wooden boxes that are located beneath windows or replace them with ones constructed from ignition-resistant materials. Mulch flower beds zero to five feet from structures with

noncombustible materials such as gravel and keep them clean.

Recreational vehicles such as boats, canoes, and kayaks are often points of ignition because they are open. Cover open vehicles with a fire-resistant cover and move at least 30' away from structures. When fire danger becomes extreme, remove smaller boats (canoes, kayaks) from under-eave storage and place upside-down away from structures as well.

BBQ's/Outdoor kitchens. Turn off the gas supply to outdoor kitchen areas and unplug all appliances when not in use. Store propane tanks in an enclosed area and close all doors to storage areas. Make sure garbage cans and recycling bins are covered with tight fitting lids. Move uncovered recycling like newspapers and magazines indoors.

Today, one in three homes in our country is located in the wildland/urban interface. And the question of a wildland fire happening in many of these areas is not if, but when. Extreme fire conditions can make wildland fires uncontrollable, but decreasing the ignition potential of structures and landscapes is very much within our control and go a long way towards protecting our homes from blizzards of "red snow".

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Landowners Resources.

"Wildfire Home Assessment and Checklist: What to know and what to do to prepare" The Insurance Institute for Business and Home Safety (IBHS) http://www.disastersafety.org/wp-content/uploads/wildfire-checklist_IBHS.pdf

"Be Ember Aware!" Smith. E. 2009. University of Nevada Cooperative Extension, Reno, NV. <http://www.unce.unr.edu/publications/files/nr/2009/fs0905.pdf>

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About the Author: Yvonne Barkley is an Associate Extension Forester at the University of Idaho, Moscow, ID.