

# WILDFIRE SURVIVAL

By James C. Jones with Jim Watkins



Illustration by Pacific Northwest Coordination Group

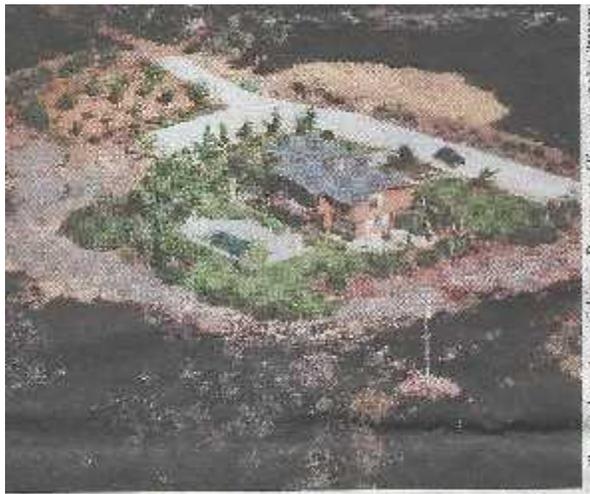
Wildfires are becoming more and more common throughout the United States as a result of droughts and longer dry seasons. In past decades most destructive wildfires occurred in the west and southwestern regions during the late summer and early autumn months. While wildfires were less common the populations of heavily forested regions has grown dramatically. We now have hundreds of thousands of people inhabiting dry forests and grasslands. Now climate shifts have created massive fuel sources while the presence of more people has increased the sources of ignition and the danger to life and property. Climate shift has also resulted in higher winds and more frequent lightning, resulting in fast developing and fast moving firestorms that can now overrun communities before effective warnings and evacuations can be initiated. Prolonged droughts have resulted in all-year fire seasons throughout the western states. Grass fires and forest fires have recently devastated southern and eastern regions that normally were immune to these hazards.

Since it is not possible for the individual to prevent a wildfire that originates outside of their property' the only choice is to prevent the fire from reaching you and your home. If a wildfire has fuel and path to your home there is little chance of preventing ignition of the structure: at that point your only option is to evacuate.

## **Creating a Defensive Space**

The only effective way to prevent a wildfire from reaching your home is to remove the fuel-path and create a defensive space where the fire has nothing to burn. In the case of grasslands dry grass and shrubs must be cut and removed before the dry-season arrives. In the case of forests you may need to cut down and remove trees from 30 to as much

as 200 feet away depending on the slope. If your home is located on a slope you will need to clear brush and trees much further on the downhill side. Unless you own the land for 500 or more feet in all directions from your home, it will be necessary to get your neighbors to clear their defensive spaces as well. A defensive space will not guarantee that embers will not come down on your roof. During a wildfire all of the fire departments will be fully employed and your power may go out as well. Even if you have municipal water, the pressure may be too low to help put out embers and sparks. A pool or pond connected to a gasoline or battery powered pump should establish an inner defense. Backpack water pump sprayers and shovels may also be helpful in extinguishing embers and hot spot fires. The following charts and tables will be helpful in creating an effective defensive space.



This picture clearly illustrates the effectiveness of a defensible space

The three R's of creating defensive a space

REMOVAL	Completely remove the entire plants. Cut down trees, dig up shrubs, and plow under grasses.
REDUCTION	Thorough pruning of trees and bushes, regular mowing of greases with removal of all cut wood and mowed grass.
REPLACEMENT	Substitute les flammable vegetation such as flower or low growing vegetables

#### Defensible Space Recommendations

Steepness of terrain →	Home on flat or gently sloping ground	Home on moderate 20% to 40% slope	Home on steep slope of more than 40%
Vegetation Type ↓			
Grasses and widely scattered shrubbery	<b>30 feet</b>	<b>100 feet</b>	<b>100 feet</b>

Shrubbery and small trees	<b>100 feet</b>	<b>200 feet</b>	<b>200 feet</b>
Forested areas	<b>30 feet</b>	<b>100 feet</b>	<b>200 feet</b>

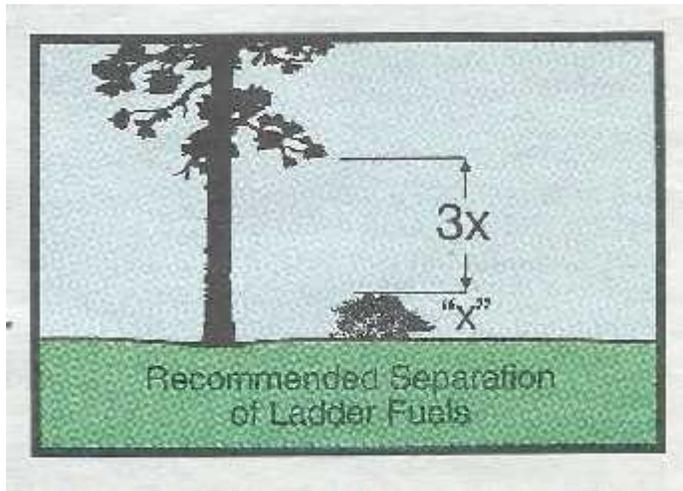


Illustration by Pacific Northwest Coordination Group

### Recommended Practice for Types of Dead Vegetation

Type of Fuel	Recommended Practice
Standing Dead Trees	Remove these within the defensive space
Down Dead Trees	Remove if recently fallen, If imbedded in the ground, cut of exposed branches
Dead Shrubbery	Remove these within the defensive space
Dried Grass and Wildflowers, etc.	Once they are dried out cut down and remove from defensive space
Dead Needles, Leaves and Branches, Twigs on the Ground	Clear all leaves, branches and twigs. If pine needles are dry, remove until you reach damp decaying layer. Do not remove decomposing material
Firewood and other Combustible Debris	Keep firewood, grass clippings, and combustible debris at least 30 feet uphill from the house
Unused and Decaying Structures	Old sheds, barns and other structures within the defensible space offer a bridge for the fire remove them.

Removing ladder fuels can elevate a small grass fire into a crown fire if not removed. A bush below a small tree that is then next to a tall tree can escalate the danger significantly.

Remove shrubs and bushes at least from below trees to at least three-times the distance from the lowest tree branch to the ground.



Dry grass and dead trees provide an easy path to the home in the background for fire

## **Evacuation**

Regardless of how well you have established your defensive space and fire suppression systems a wildfire may overwhelm you. You must always have an evacuation plan and not hesitate to evacuate. Wildfires (any fires) move incredibly fast and in unpredictable ways. If you can see the flames and smell the smoke that fire could be on you within the hour or less. A brush fire with 8-foot high flames will travel at about 5 1/2 miles per hour without a wind and consume 3000 acres per hour. A shrub and brush fire with flames averaging 10-20 feet will move at 6 to 8 miles per hour consuming up to 5000 acres per hour. High tree “crown fires” with flames 100 feet or higher can race through forests and jump roads and rivers. Delay is not an option.

- Have a wildfire escape plan ahead of time. If possible move children, pets, elderly and valuables to a safe location outside the fire zone as soon as wildfire are detected in the area and before evacuation is mandatory.
- Pets and children pose special problems for evacuation. Plan on how you are going to round them up and get them to safety quickly as a fire roars towards you home.
- Determine what you are going to take if you need to evacuate and have those items in packs, tote bins or loaded in your vehicle well in advance.
- Fire-resistant safes are rated to protect the contents for a limited time and temperature. Read the labels before you buy one. During World War Two people living in bombed areas would burry valuables in their yards so they could come back and get them if they survived. You can have ammunition cans in holes ready to fill and cover if needed.
- Have a wildfire survival kit (see below) for every family member

## **Surviving a Wildfire**

A wildfire may start so near to you or move so fast that you may be overtaken at home or on the road. If you can see flames and smell smoke you need to move quickly away from that direction. It is always best to move up-wind and downhill from the fire. If you can hear crackling and feel heat it may be too late to escape. You cannot outrun a fire at this point. Look for lakes or ponds to submerge in or seek ditches, bridges, culverts, caves and overhangs that may offer some protection. If nothing else is available find a large green grassy area, or low spot and lie down. Even digging a small indentation in the soil will help. Remove all synthetic clothing that may melt to you skin. Cover our head and face with wet no-synthetic cloth to avoid respiration of hot air and soot. If you have enough water, moisten you clothing. Lie flat and the fire may pass over you. Stay calm and wait until the fire passes. Remember that the ground may be still be hot and embers may be hot enough to ignite you clothing and burn your skin. Move carefully downhill and upwind of the fire through burned out areas to reach safety.

## **Wildfire Survival Kits**

Wildfire survival kits are not like FEMA evacuation pack or so-called bugout bags. If you survive and escape the fire you will reach help fairly quickly. You don't need food and a lot of gear for prolonged survival. Your equipment needs to focus totally on surviving and escaping the fire.

- You should have at least six N-95 Dust/mist respirators to keep soot, smoke and heated air out of your lungs.
- You need to have a pair of good safety goggles to protect your eyes from sparks and debris.
- You need to have a good pair of long-sleeved, work-gloves to move hot embers and debris
- Have a wide-brimmed "boony" hat to keep sparks and embers off your head and neck
- A good camp shovel may come in handy if you have to dig-in or clear a path.
- You will need plenty of water to wet down your clothing, the hat and the masks and put out sparks on your clothing and skin
- If you feel you are likely to be trapped and have to dig-in and let the fire pass over you, you may want to invest in a fire blanket. These are flame resistant and heat resistant covers that you can put over yourself as you lie flat in a low, clear area or a trench you have dug. You can find these at [FireSafetySource.com](http://FireSafetySource.com). One of these weighs just 5-pounds, comes in a pouch and costs \$74.00.
- Of course you will want to have copies of all of your identification, insurance, medical and financial documents.

In this case, a lot of food and additional survival gear is just going to slow you down.

## **Wildfire Safety Tips**

- If you see a wildfire and have not heard a warning or evacuation order call 9-1-1. Do not assume that it has been called in.
- Be sure you are included in any email, or call alert system in your town or county.
- If you do get an order to evacuate, do it immediately, but let others know where you are going and then contact them when you have safely arrives.
- Keep your vehicle fully fueled and in good condition. Have your emergency supplies and a change of clothes in the vehicle.
- After a wildfire, only return when authorities say that it is safe
- After a fire has passed, maintain a fire watch and inspect for smoke, sparks and embers throughout the house, attic and roof.
- Discard any food that has been exposed to heat and smoke.
- Be sure to photograph all damages for insurance purposes before cleaning up and removing debris.
- If you or anyone with you is burned, cool the burn with cool water and cover with a sterile bandage. Go to an emergency room or aid station for treatment.
- If you inhale a lot of smoke and/or hot air you may suffer respiratory disorder later. Go to a hospital and report this exposure

## **References and sources for further information**

[www.firewise.org](http://www.firewise.org)

[www.firefree.org](http://www.firefree.org)

[www.nifc.org](http://www.nifc.org)

[www.fema.gov](http://www.fema.gov)

[www.firesafecouncil.org](http://www.firesafecouncil.org)

Optional material



Not much left of this homestead after a brushfire reached it.



Not much left after a wildfire fed by dry grass and trees overran the dwellings in the distance

