

September 25, 2019

**An Open Letter to Topanga Residents:  
IT COULD BE YOU – THE NEXT WILDFIRE FATALITY**

Just out of high school and trying to make a living as a gardener, I lived with my grandmother in Old Topanga Canyon from 1962-1963. Despite the idyllic life there, we moved back to the Valley because the jobs were there and I was concerned about my grandmother being a victim of fire if I am not around to evacuate her.

The area I had lived in at that time has not burned since, the chaparral and landscape fuels pose an even greater fire danger now, and the people have also greatly increased as I can see in my former garage, now another SFR. Topanga Canyon has now been designated as an extreme fire danger area where only evacuation is recommended with residents hopefully escaping through largely narrow, winding roads (however, remember that most wildfire fatalities occur during evacuation). This, despite the fact that the community has one of the best Disaster Survival Guides, has its own volunteer firefighters, and has received about \$350,000 in public grants to make it more fire-safe.

Have your houses just become sitting ducks for the next wildfire because you like your lifestyle? Are you not just playing Russian roulette with your own and your family's life? What are you doing for yourself, your neighbors, and the community to create a truly greater fire-safe environment and not become the next fire statistic? Have we gotten too old? Have we given up? Is the real community spirit dead? What is happening? Remember that it is your legal responsibility to maintain a fire-safe environment within your property.

What can we do to immediately prepare for the overdue fire invasion? Not having a chipper or chainsaw is no excuse to create a more fire-safe environment immediately. Go out, buy a good pair of bypass pruners, long-handled loppers, and a pruning saw and get to work and inspire your neighbors. As a wildfire moves through an area propelled by the wind, it "feeds" on fine, dead, dry fuels under ½" in diameter while preheating the heavier fuels to the ignition point. Removing first all fine dead fuel from your own and your neighbors' property and following up with the thicker-diameter dying fuels while also limbing up trees to at least 10 feet above ground will be a key step in saving your home and safely evacuating if you so desire. Look inside the shaded crowns of any plants around you and you will notice that the often beautiful exterior hides/covers fine dead fuels waiting to explode in a wildfire. If you want to stay, and depending on your location, move any flammable materials at least 20 feet away from around the house, which also applies to clearing around propane tanks. Also protect all your windows and vents with inexpensive plywood shutters that can be placed from the outside at ground level and from the inside on two-story homes, or have storm shutters installed that can be hand- or remotely-operated. Next, don't forget a water source. Place plastic trash cans filled with water around the house along with some rags or "gunny sacks" and a shovel to knock down the burning embers after the fire front has passed. And don't forget the prolific railroad tie "Roman candles." Cover the tops with "dirt" and have a pile of loose "dirt" ready to cover them as they reignite. Remember, you must have either safely evacuated or sheltered in place inside your home as the fire front approaches and during the initial burnout period of the surrounding heavier fuels. When you then exit your home to chase firebrands, you must be properly dressed with long clothing to be protected from radiating heat sources and also wear a face-covering, smoke mitigating cloth/bandana. Jumping in the pool as the fire approaches may not be an option as you may be just breathing superheated hot air just above the water level that can kill.

Topanga Canyon has survived fire disasters in the past because of its unique topography with the interplay and direction of local and fire winds and the cooling coastal air largely smothering out fires in the afternoon. But you are still facing a war and an all-too-quick invasion by fire! Are you prepared for a predictable direct "bull's eye" hit as it happened to Point Dume during the 2018 Woolsey Fire? Will you be prepared in the daily self-help community spirit of the WWII Victory gardens or will you largely rely on the often insufficient insurance "bailout" with heartburns and often resulting legal tangles. Would you be willing to live where and how you are if insurance rates would not be subsidized by every other citizen living your "idyllic" life to make it more affordable for you? Probably not, so let us work together now and be prepared!!!

Klaus W. Radtke, Ph.D., Wildland Resource Scientist ([www.firesafetyus.com](http://www.firesafetyus.com))  
Attachment

### Understanding Wildland Heat Sources as Measured by Flame Length

**Flame length less than 4 feet** (fire line intensity will be normally less than 100 Btu/feet/second): fires can generally be attacked at the head or flanks by persons using hand tools. Hand lines should be able to hold the fire.

**Flame length 4-8 feet** (fire line intensity 100-500 Btu/feet/second): fires are too intense for direct attack by persons using hand tools, and hand lines can not be relied upon to hold fires; however, bulldozers, pumpers, and aircraft can be effectively used. It is time for a homeowner to get off the roof of the house or only continue protecting the outside of the house if he/she is well dressed with protective clothing and can be shielded from the heat of the fire.

**Flame length 8-11 feet** (the height of a single-story home): wildfires may present serious control problems, and torching out, crowning, and spotting may occur. Control efforts at the head of the fire are probably ineffective and the flanks must be attacked for most effective fire control.

**Flame length in excess of 11 feet** (fire line intensity greater than 1,000 Btu/feet/second): crowning, spotting and major fire runs are likely, and control efforts at the heart of the fire are ineffective.

**Flames in excess of 30 feet:** fires are considered to be out of control using the then-present fire control technology.

NOTE: Under extreme fire weather conditions, an uphill-moving fire on steep slopes could already produce flames of 25 feet in two-foot-tall, overmature low-fuel plants such as coyote brush (*Baccharis pilularis*), and flame length could exceed 80 feet in six-foot-tall chaparral (HOGFW p.18, K.R. 1982). When an unprotected house is located on top of slopes without setbacks, sideslope, in draws or "fire chimneys," meaningful brush clearance and fuel modification distances should greatly exceed the flame length that can be expected from burning vegetation under extreme fire weather conditions, especially if a house is unattended.

### Understanding Your Body's Response/Tolerance/Survival to Heat

The most common cause of thermal/heat injury is direct contact with flames. Although a significant amount of radiant heat can be created in wildland fires, firefighter clothing is usually enough to offset serious burns. Temperatures may be extreme at the fire front but they are of short duration. The worst burn events typically involve civilians who are inexperienced with wildland fire behavior or with rapid, unanticipated changes in fire behavior and do not have the proper equipment and clothing to protect themselves from such extreme exposure. Immediate death is primarily due to incineration.

**Turnover burns** (The most common cause of death in wildland fires): It occurs when a firestorm burns over the individuals in the path of an advancing fire front. Of the 133 firefighter fatalities during 1990-1998, 29% were turnovers.

**Heart attacks** (Most common death with volunteer firefighters/homeowners).

**Inhalation burns** (mostly seen in firefighters but also in panicked homeowners trying to outrun a fire and inhaling superheated air. Such supraglottic (above the glottis) heat injury is largely indicated by swollen lips. Advanced airway interventions may have to be done quickly and if the person has severe shortness of breath, he/she may have to be treated with high flow oxygen. Protecting the airway from extremely hot air is always a firefighter's primary concern. Breathing through a wet shroud or bandana exposes the airways to hot, moist air, which can be much more harmful than hot, dry air. Protect the face with a dry cloth/bandana. A wet cloth/bandana should only be used to protect from inhaling smoke after the flame and heat of the fire have passed.

**Respiratory tract injury** (breathing superheated air): Face, neck, and upper body facial burns, inclusive of nasal hair singeing, facial edema, stridor, and early respiratory distress are tell-tale signs. Serious respiratory burns are most often seen in casualties trapped in the burning area or trying to outrun a fire, as these people have no choice but to breathe the smoke and hot air. The level of injury is directly correlated with the amount of time spent in the burning area and the actual temperature of the air being breathed. Thermal/heat injuries to the respiratory tract can be insidious, with a delayed onset of respiratory distress after contact with superheated air. Significant respiratory distress may be present as late as 24 hours after the exposure. Thermal airway injury is always associated with edema, which can rapidly occlude the airways.

Air, fortunately, is a poor conductor of heat and the upper airway is very efficient in thermal or heat exchange. A healthy person can breathe air at a temperature of up to 199° F (92° C) for 30 minutes and more for shorter periods without serious injury such as in a fire shelter situation. Although most of the injuries to the respiratory tract are therefore generally mild and they involve only the upper airways, anyone with a significant history of exposure should receive a medical evaluation as soon as possible.

**Soft body tissue injury:** In stark contrast to the higher temperatures generally required for respiratory tract injuries, soft body tissue thermal burns can already occur when the skin is exposed to temperatures above 115° F (46° C). At temperature exposure greater than 120°F for three seconds, a child's skin can be burned severely enough to require surgery.

**Smoke Inhalation:** Overexposure to carbon monoxide and respiratory irritants is likely among firefighters when direct control of fires is required and smoke production is intense. Because smoke is a given in any fire, the elderly and infirm should consider evacuation. Smoke exposure is likely to be highest along the fire front in high winds (as the smoke lies low on the ground), large fire situations that suffer from poor atmospheric wind dispersal, and where topography dams air movement.

### (Re)landscaping/Protecting your Home and Planning your Escape Route

**Point source of radiation** (such as a tree or bush): the heat intensity decreases with the square of the distance from the source. Therefore, a tree burning within 20 feet of a window transfers only one-fourth the heat to the house compared with a tree burning within 10 feet and only one-sixteenth of the heat compared with a tree within five feet!

**Line source of radiation** (such as a hedge or row of trees): the heat intensity only decreases with the distance instead of the square of the distance and a house receives this heat from all points along the line. Thus the heat intensity received 20 feet from a burning hedge is still one-half that at 10 feet and one-fourth that at 5 feet!

**"Fire-resistant Plants:"** The term 'fire resistant' is a misnomer in relation to flammability of plants and gives the homeowner a false sense of security. All plants will burn under the proper fire weather conditions, especially if they are drought-stressed and have a high percentage of fine, dead fuels. In fire ecology the term 'fire-resistant' denotes that a plant is adapted to fire.