

Just Another Day in Paradise

A Wildfire Survival Guide for You and Your Home

By David Kapler, Retired Fire Chief

After the recent catastrophic wildfires, most Californians are now aware of the threat. The forecast is for more of the same, and worse. Nevada County sits at ground zero for wildfire risk. People are scared and hungry for useful information. Telling people to have a Go-Bag is not a plan. Telling people to just take care of your “defense” and we will take care of the “offense” is a nice cliché but it does not go far enough to prepare them for the realities of facing a wildfire in their neighborhood and how to get out. We must do better.

The facts are not being revealed about the deficits in the current notification system (Code Red). Or the unmaintained system of roads for evacuation. This is why I have developed this in-depth program on wildfire survival titled, *Just Another Day in Paradise*. The important thing to recognize is that, until these systems are fixed, citizens are left with the responsibility for their own survival. Even then, we are the ones ultimately responsible for our own safety and survival. I will explain the deficits and I will explain the solutions.

This is not to say I am not appreciative of the great work of our law enforcement. But they are reactionary response forces. They go into action *after* a fire is reported. It is what is done to plan and prepare *before* the fire that will save our lives and our homes. As you will see, if you wait for the fire to be at your door step before taking action, and knowing what action to take, your chances of a good outcome are slim. I have no doubt that day-to-day emergencies, even routine vegetation fires, are handled competently. But wildfires in extreme weather conditions and heavy fuel are a different ball game. They are anything but routine. To make matters worse, just when conditions are at their worst, there is a good chance that our local responders could be largely committed elsewhere.

I can say for sure that when a deadly fast-moving wildfire strikes, this will NOT be the time to put together a plan and hope to get out alive. This information is intended to give citizens a better understanding of the realities of a wildfire conflagration and how to increase your odds of survival. Really, I have two goals. One to educate you and one to scare you, into action.

The ONLY sure way to survive a wildland urban interface (WUI) fire, especially in our forested communities, is to **NOT BE THERE** when it comes to your neighborhood. I wish that was the only piece of advice I needed to give because it is the only piece of advice I can give with 100% confidence. Everything else involves risk and a high

chance of failure. In this case, failure could mean death. Survival requires adopting a whole new mindset of personal responsibility to *prepare and get out alive*, starting now.

California has arguably the most experienced, well-trained, equipped and supported wildland firefighters in the world. Yet every year, some of these men and women die battling wildfires. Do you think your odds are any better than theirs? Their job is to get in and battle the flames. Your job is to be as far away as you can.

SURVIVAL MINDSET

Survival in any crisis has two parts, mental and physical. **Thinking and acting.**

Mental preparedness is key. It enables you to remain more clear-headed and make better decisions. People who think about, plan and prepare for a specific crisis always perform better. If you refuse to think about it, your odds of making good decisions when its time to act is small. How do you develop mental preparedness and a survival mindset? Here are five steps;

1. Develop **situational awareness**. Expect the unexpected. Don't be caught by surprise. Tune into your environment. Monitor your alerting systems. Use eyes, ears, nose, gut instinct, intelligence and common sense. Pay attention to danger signals and clues. Look for the out-of-ordinary in your environment, i.e. smoke, sirens, aircraft overhead, strong winds, red flag alerts. Awareness is not just what you are observing. It is **knowing the meaning of what you are observing**. Awareness includes gathering knowledge and intelligence about threats that may affect you. In this case, wildfires.
2. **Take control**. If you are waiting to see what happens next or what your neighbor is doing, you are not in control. If you are hoping for the best, you are not in control. If you are waiting for someone to save you, you are not in control. If you are uncomfortable but hesitant to say or do something, you are not in control. If you are concerned about what others might think, you are not in control. Running around in an unproductive manner, when seconds count, is not control. ***Making a decision and taking action to accomplish that decision is control.***
3. **Have a plan** and practice your plan. Develop contingencies (PACE). Throw in as many variables as you can; night time, communication is down, power is out, blocked roads, screaming kids, run out of gas, flat tire, choke point, surrounded by fire, burn over, the kids are at the mall, you are at work. Stress test yourself and your plan. Simulate these challenges during practice sessions. Find the weaknesses in your plan and remedy them. Include the family. Make it a game. Role play. In addition to a notification and evacuation plan, you must have a family communication plan and a reunification plan.
4. **Be prepared**. Have in place those items you will need to carry out your plan. Bugout bag, extra fuel, maps, fire extinguisher, etc. Know how to use them. During a crisis you will not remember everything you need to remember. Do

what military and commercial pilots do and develop check sheets. (See attached sample)

5. **Act decisively.** Get moving. Don't waste time. Be the first one out. It is better to do *something* than to freeze. Stay aware, think ahead, and be resilient. Stay with the plan until it is not working then go to plan B, C or D. Never stick with a bad plan. Make adjustments. Never give in and never give up.

As a firefighter, one of my favorite quotes that guided my survival mindset was:

"Professionals don't take chances; they minimize the risk."

Give yourself every possible advantage and remove any obstacles or disadvantages. Being in a survival mindset means not ignoring the warning signs or taking unnecessary risks. There are three things that work against us as humans:

1. Normalcy Bias – A mental attitude of "It hasn't happened yet", or "Nothing is going to happen to me." Thinking today will be just like yesterday, normal.
2. Cognitive Dissonance - Inconsistency between the way we want life to be and reality. Not wanting to think about the unpleasant, or it appears too daunting to do anything about. Like choosing not to go to the doctor because we don't want the bad news.
3. Denial – Plain and simple, convincing yourself that it won't happen here or it won't happen to you. It only happens to other people, in other places.

Now that you know about these human conditions (disadvantages), guard against them. Don't let them take over. Replace them with the above steps to a survival mindset.

To summarize all of this in three attributes. You must be confident (knowing what to do), competent (being able to get it done), and immediately reactive (well-practiced so that you can just react and not have to think through each step).

A word About Children

Some parents are concerned about frightening their young children with conversations about scary topics. Don't worry. All school age children are taught fire drills, earthquake drills, what to do if their clothes catch on fire, and now shooter drills and they don't come home scared. They feel proud and empowered that they know what to do. What upsets children is when they see adults running around in a panic. They know and feel chaos when they see it. Even infants sense chaos and anxiety. Involve your children at age appropriate levels. Give them tasks and responsibilities and involve them in family drills. You are teaching them valuable life lessons like personal responsibility and being prepared for the unpleasant.

Adults could take a lesson from children and the value of fire drills at school and in your home. If you know what to do and are proficient at it, you don't need to be worried or paranoid.

FIRE SCIENCE

A quick review of sixth grade science. This will be important as you make survival decisions.

Fire triangle – Heat, oxygen and fuel. Remove one of these and the fire will go out or not ignite. The best ways to prevent wildfire is to reduce or remove the fuel and be cautious not to introduce heat or sparks. However, lightning strikes and man's inventions and carelessness will still cause fires.

Heat Rises – In a fire, the air is always cooler near the ground.

Wildfire risk – Conditions that raise wildfire risk: high temperature, low humidity, strong winds and dense fuel. This defines "red flag" fire conditions.

Heat transfer – Heat is transferred three ways; radiation, conduction and convection. Google if you need further refresher.

Protection – The best tactics you can employ to protect yourself from the heat are; distance, shielding, cooling.

Wildfire survival triangle – Defensible space, notification, and evacuation.

DEFENSIBLE SPACE/HOME HARDENING

"Where there is no fuel, there can be no fire."

Defensible space is one of the cornerstones of wildfire survival. This includes hardening of your home. NFPA defensible space standards are **bare minimums**. Most people underestimate the amount of defensible space needed or overlook weak links such as where embers could collect or hide. It is a huge job. **Set priorities** for where to start.

You must be willing to lose every "thing" you own, to save your life. That's what fire insurance is for. Therefore, I suggest you **begin by ensuring a safe exit route**. Create 10 - 15 feet of defensible space along your driveway and evacuation routes, and 15' overhead. Ensure you can get out and fire crews can get in. Work with your neighbors and those who share the roads to accomplish this. Then start working on your property and your house.

What happens to *your* house is determined way ahead of your 100' of defensible space. Is the forest around you trashy or clean? Is it dark or airy? Unfortunately, you only control your own land. If you are the only one in your neighborhood that cleared your brush, you may be out of luck. Work with your neighbors to expand your area of influence and theirs. This can only be fixed if we **ALL work together**.

NOTE: Current state and local defensible space regulations only extend out to 100' from structures. If there are acres of dense brush and trees outside your 100', there is little chance for your home to survive an extreme wildfire.

What happens to your house will depend on a variety of factors including; proximity of flame to your home, wind, terrain, and other fire dynamics such as, is it approaching from one side or multiple sides. This is why you have to be concerned about **ground fuel and aerial fuel**, the tall trees.

NOTE: Research indicates that a crowning fire cannot sustain itself without ground fuel. That does not mean a fire will go out when it reaches your defensible space. It takes time and distance for a crowning fire to lose its wind, heat, embers and energy.

You should be able to **see through your forest** at ground level uninterrupted by brush or small trees. **The less fuel the better.** The more fuel the longer and hotter the fire will burn. You and your home can only withstand so much heat insult before you succumb.

Have no brush or small trees that can ladder (spread) up taller trees. Once fire gets into the tall trees (a crown fire) the more heat it develops, the faster it moves, and the more difficult to extinguish. Winds at 100' are much stronger than at ground level. Trees should be limbed *at least* 10' above ground vegetation. 15' is better. Yes, that requires a ladder, lift, or tree climber. But it improves both the appeal and safety of your property.

If your property is dark, mostly shadows and shade, with little sunlight, then your tall trees are too thick and too close. If you have problems with moss or mold and mildew, you need more air and sunlight. Trees need air and light between their foliage. If you look up, you should see lots of blue sky between tree foliage. If you look down, you should see at least **50% sunlight** on the ground. 75% is better. Don't worry. Removing brush and thinning trees will make them healthier and more resilient to disease, with less competition for soil moisture.

If you are surrounded by tall trees and they catch fire, the wind will create a blow torch effect on your house. The radiant and convective heat would likely start a wood sided house on fire. If you have a well hardened home, you have a chance provided flame or embers do not enter through an open or broken window.

Heat rises and fire will burn faster and hotter uphill. The wind is also directed uphill by the terrain. Most parcels in our area have some **slope**. If your home is on a slope, ridge or canyon top, **increase the defensible space** below your buildings by 50 – 100%.

The heat of wind-driven wildfires can reach 2000 degrees. Destruction is near total. A friend of mine in Santa Rosa lost his house two years ago. He had a high-quality fire safe and everything inside was destroyed.

Be careful. Don't be the person that starts a catastrophic fire. The largest fire in California history, the Mendocino Complex Fire, was started by a hammer hitting a nail.

When working outdoors, keep a fire extinguisher or hose nearby. Maybe it is not a good idea to be mowing, cutting or trimming today.

TIP: Don't set a hot chainsaw on leaves or pine needles. Bare dirt or rock is OK.

I cannot stress enough that reducing fuel must be a neighborhood and **community effort**. We cannot achieve a fire safe community unless we **all work together**. Each of us must do our part. The trade-off is to risk losing our homes, our community, and our lives.

Home Hardening

Hardening one's home is an extensive process. It involves eave protection, proper vent screening, chimney screens, noncombustible shutters and decks, and much more. There is an excellent website listed in the Resources

Blowing embers start most fires. Look around your house where the wind currents deposit leaves, needles and other debris. This is where embers will find a tinder nest. Under decks, corners, behind down spouts and pipes, under bushes, between deck boards, spider webs, bird nests, roofs and gutters, around fences, etc. Unpainted wood catches quicker than painted wood.

I have not tested this but I believe that security film on windows could help to *slow* (not stop) fire from breaking windows and entering your house. Double pain windows and tempered glass are also more fire resistant.

Don't forget that your car, fences and out buildings are all fuel for the fire. If you want to save your house, you have to remove all fuel that could spread fire to your house.

Cleaning up our vast forests will take decades. We must focus on aggressively reducing the density of brush and trees within our neighborhoods and on the perimeter of our communities. I am encouraged whenever I see a new property owner who has properly cleared their brush and thinned their trees. I am seeing beautiful homes I never saw before. **We control the fuel.**

EVACUATION

"If in doubt, get out!"

Evacuation means to get out of the way of the fire. I address evacuation in three stages.

Stage One - Pre-Evacuation – In California, we are always in a pre-evacuation stage

It may be the off season but it does not mean to put your survival plan on the back burner. Wildfire can happen any month of the year. This is the best time to be practicing and testing your plan.

- Have your **go-bags** packed and review inventory. Any changes you would like to make? Rotate food, water, medicines, fuel, etc. every 6 months.
- Have a prioritized **checklist** to loadout your vehicle quickly. (Attachment)
- A **half-full** gas tank is the new empty. Develop this new habit. It will keep you in a safety mindset. Safely store extra fuel for generator or vehicle. Every time you fill up your tank think of at least one other step you should take to improve or practice your plan and do it.
- **Stay aware** of changing weather conditions and red flag alerts.
- Now is the time to become familiar with all your **escape routes** and identify places of **safe refuge**. For example; large cul-de-sac, large parking lot, golf course, cemetery, airport, lake, NID ditches, large culverts, non-combustible buildings.
- Prepare and **review maps** that highlight escape routes and safe zones.
- Develop a family communication plan and reunification plan, in the event you are separated.
- As a concerned parent, ask your school and other caretakers of your children what their evacuation plans are.
- Hold family **drills**.

Stage Two – Evacuation Warning/Alert or Red Flag Days

The sad truth is most people who die in a wildfire had notice but failed to leave.

An evacuation warning or alert is when you are told to prepare to evacuate. This is because, in all likelihood, the fire is headed in your direction.

Ask yourself this question, “**What am I waiting for?** Why not protect my family and leave now?” You will be saving everyone a lot of stress, fear and headaches. Maybe even their lives.

If you really knew what it was going to be like when the fire is on you and the evacuation routes are impassable, you wouldn’t think twice about leaving at this stage.

The secret to survival is to give yourself every advantage you can and reduce your risk. Don’t put yourself behind the eight ball. An evacuation warning is your last window of opportunity to get out while you still can, with little risk.

In this stage you should immediately:

- **Check on your buddies** and activate any neighborhood notification system so that everyone has a chance to prepare or leave early.
- **Keep family together**, or implement your communication plan and reunification plan.
- Use this time wisely and **pre-load your vehicle** while you can.
- **Stage your vehicle** for quick exit. Disconnect garage door opener.

- **Check fuel** level and fill tank. Avoid gas stations at this time. You will encounter a long line and lose valuable time.
- **Do not carry spare gas** in your car. You are carrying an explosive device into a fire.
- Stage your **evacuation clothing**. (More on this in Stage Three)
- **Study your maps**. Based on where a fire is burning, determine the best evacuation routes, safe zones and alternatives. How can you avoid choke points and congestion?
- **Review evacuation plans with family** so everyone is mentally prepared. It is not easy to focus on escape when your family is in a panic.
- If you have young children, elderly, people of limited mobility, or who are stressed out, **now is the time to leave**. Go to the mall. Go to the lake. Go to grandma's house.
- If you have **heavy smoke** in your neighborhood, leave. It is not healthy. It is loaded with carcinogens and poisons to the body. This is why so many FFs die from cancer?
- Implement all recommendations regarding preparing your property (remove light curtains, remove outdoor furniture, place ladder and yard tools for FF's, etc.)
- **Review checklists** by Fire Wise and Fire Safety Council to be sure you are not forgetting something. Keep these checklists with your bugout bag or other convenient spot.
- **Large animals** should be moved to a safe location. You should not move large animals during a mandatory evacuation. (more on this in Stage Three)
- If you are you moving your animals to safety, why not **move your family** as well.
- If you have **small animals**, cage them so they can be quickly put in the car. You won't have time look for Fido, when you are ordered to leave.
- **Monitor your warning systems** – Code Red, local radio, Yubanet.com, scanner.
- Night time is the most vulnerable. Consider establishing a **fire watch** (people designated to stay awake to monitor the radio and watch for signs of a fire).

Use any notification system your neighborhood has in place (buddy system, text message, phone tree, CB, etc.) to **ensure everyone is aware of the evacuation warning** or red flag alert. (Sample Notification Plan attached)

Be a pro, **don't take unnecessary risks**. If you are in the path of the fire and the front is not controlled or contained, it is time to leave. Fires can also change directions quickly. Do what you can to encourage others to follow the above points, and get out early. If you wait to see what happens, you may lose your only chance. Better to wait and see from a distance.

Stage Three- Evacuation Ordered or Fire is Discovered Near Your Location

“If you waited for an evacuation order, you waited too long.”

I hope that I have encouraged you to ensure your survival in a wildfire by living prepared (Stage One) and getting out early (Stage Two). However, we know that even the best made plans and intentions sometime go awry. You may be in close proximity to where a fire starts. You have to have a plan B, C and D. If you receive an evacuation order or a fire starts nearby, here is what to expect and some guidelines:

- This is the **most dangerous stage**. If you are still here, expect panic, confusion, chaos and gridlock. Even if you and your neighbors are prepared, expect that most others are not.
- **Do not expect** someone to come to your **rescue**. The early stages of a fire are hectic, chaotic and there are not enough resources. If the fire is spreading, you may be cut off from any rescue effort.

NOTE: In a fire or other disaster, there are 100's of homes and 1000's of people at risk. It takes hours to mobilize resources. It is irrational to think someone is coming to help you. The bigger the fire, the more resources needed and the less chance of aide getting to everyone who needs it.

- Be decisive. **Leave immediately**. You are already behind the curve. Time is of the essence.
- Your car should already be packed. If not, use your checklist and take only the most essential items. You may be forced to leave immediately.
- By now you should know three or four escape routes from your home, business, and other locations you frequent. Based on the best information you have on fire conditions, **select the best route** to avoid the fire and congestion.
- **Know where you are going**. Avoid routes you are not familiar with and know their termination point.
- **Observe the smoke plumb** to know which way the wind is blowing. Avoid this area and go the other direction.
- **Avoid vegetation** and routes that do not have adequate defensible space.
- If you are on a private road, do not expect any traffic officers to tell you where to go.
- On public roads, you may or may not encounter traffic officers. You may be limited to only going where you are directed.
- If you can, stay away from Hwy 49, 74 and 20 as much as possible. You have to know alternative routes ahead of time. This is **not a time to get lost**.
- If you have not moved your large animals to safety, best to **set them free**. They know what to do.
- You and your family could be stuck in your car for hours. You do not want to get off the road for a **bathroom break**. Carry plastic bags, containers, wipes and TP for sanitary use.
- **Avoid stopping for fuel**, supplies or other reasons. Lines will be long and supplies will be short. You will lose valuable time. Keep your tank half-full or fill it before you leave.

- This is also why you should **keep your family unified** or have a reunification plan. You may not be able to pick your kids up at a friend's house or at school.
- **Keep bottled water in your car** at all times. You could be stuck in traffic for hours. Stress consumes water. Dehydration affects cognitive function. People become anxious and panicky when there is no water to drink. Water is the original comfort drink and brings a **calming effect**.

Survival Strategies

“Just another day in Paradise”

Here are survival strategies to protect yourself in a Paradise-like evacuation. My advice is to already be gone so use these suggestions at your own discretion. If you have better ideas, use them and let me know how they work for you.

- Wear **fire-resistive or fire-retardant clothing**. DO NOT wear nylon, polyester, rayon or other manmade materials. These will melt to your skin. Your clothing should act as shielding from heat.
- If you do not have FR clothing, wear heavy 100% **cotton or wool clothing**. These fabrics do not support a flame, if embers are falling on you.
- **Cover your entire body** including, hands, neck and head. Wear leather gloves and sturdy thick soled shoes. **Nothing that could melt**. Nomex hoods, goggles and full-face helmets can protect your head and face. A heavy cotton hooded sweat shirt.
- This means having your **EVAC clothing selected** ahead of time. Your clothing should be staged in your home so that you can quickly put it on when you evacuate.
- If there is a chance you may get caught in a hot spot, consider wearing **two layers of clothing**. A regular fit inner layer and a loose fit (coverall) outer layer. This adds more insulation and works like a double pain window, to help keep heat away from your body.

Tips: 1. Tight fitting cloths transfer heat to your body more quickly than loose clothes.

2. Some people are investing in Nomex racing suits.

- A N99/100 **face mask** will help to filter out some smoke and particulate. Avoid breathing smoke as much as you can. A moist bandana can also help to filter air.
- The **air will be hot, smoky and caustic** and will burn your lungs and eyes. A pair of airtight goggles (swimming or diving mask) can help keep your eyes from watering and closing.
- Don't be surprised if you **vomit from breathing and ingesting smoke**. (Sanitation kit)
- **Oxygen will be in short supply**. Filters and masks do not supply oxygen.

- **Oxygen tanks are dangerous** in a fire. Do not bring unless your life depends on it.
- **Keep windows up** and no outside air. Use recirculating A/C to help cool the interior.
- Keep a heavy **wool blanket** (shield) in the car for each person. In the event you get caught in a burn over, it will help protect you from the radiant heat.
- You can also use the wool blanket or a foil blanket to **cover the windows** on the side of the encroaching fire. It will help reduce radiant heat in the vehicle. Be careful not to obscure too much vision. You do not want to crash and be immobilized. An insulated windshield screen, or foil blanket, can also do this job. Doors are already double layer so only be concerned about the windows.
- Passengers should **get low in the car**, below the windows to avoid radiant heat.
- **DO NOT wet your clothing** or blanket unless in a lake, stream or pool. It will convert to steam.
- Be alert for **changing wind direction** which will change the direction of the fire. Large fires generate winds that can be very strong and unpredictable.
- **DO NOT carry spare gas** into a fire. The heat will vaporize the fuel and create a bomb in your car.

The alternative to evacuating is to **shelter-in-place**. **This is extremely risky**. Unless your home is non-combustible or well-hardened, the chance of survival is slim. I do not even want to suggest this as an alternative. You have seen what was left of houses after the Paradise fire. Some people are considering building **fireproof bunkers**. This is a new industry with few standards. You must consider heat resistance to at least 2000 degrees where exposed and adequate air systems. If I built a bunker, it would be at least 2' below ground level.

I will discuss bunkers or sheltering-in-place with individuals who want to know more.

Last Ditch Survival Tactics – no guarantees

If evacuating in a vehicle, your **vehicle offers you the best available protection**. However, you could find yourself in a flame front or forced to leave your vehicle. Here are additional strategies that *may* keep you alive. Uncomfortable but alive.

- If caught in a burn-over while in your car, **try to find a large clearing** (these are the safe zones you identified in the pre-evacuation stage). Park on the side farthest away from the approaching fire (distance). Hopefully you took the time to locate these places before you got in this predicament.
- The area behind a fire, where it has already burned, is called **the “black”** because it is scorched black. If you can get around or through the flames to this area, you will be somewhat safer. The air and the ground will be hot. The air will be toxic with products of combustion and depleted of oxygen. Keep moving away from the fire and conditions should improve. Watch for falling trees, wires, limbs, etc.

- You can also **use a structure** (preferably noncombustible) to provide shielding from an approaching fire. If you can, get inside a noncombustible building. If not, put the building between you and the fire. Survey the situation for your best escape and position your vehicle. When the fire is about to overtake your position, drive quickly back through the fire in the direction it is coming from. Take the shortest distance through the fire. Make sure you know your route as visibility will be poor and you do not want to get stuck in the fire front.
- If on foot, alcoves can add additional protection.
- If trapped on the road in a fire storm, it is possible to **drive through a narrow fire front**. Wait until the fire is about to burn over your position and then quickly drive through to the already burnt side. Make sure there is nothing in your way to slow you down.
- Even if your tires catch fire, keep going until you clear the fire front. Once you are clear of the fire, you may need to abandon the vehicle before the tire fire enters the cabin.
- When evacuating on a road, the fire may be burning on one or both sides. Watch ahead for fire that may encroach on your car. Drive in the safest lane farthest away from the fire. **Keep distance between you and the car in front**. In this way, if the car in front of you stops you will have more room and time to maneuver and avoid this trap. It also gives you space to speed up and get through hot spots quickly.
- **If you must exit** the vehicle, make sure you are **well covered**, wrap in your wool blanket, and make a rapid dash to the **best safe zone** you can find. Building, clearing, depression, etc.
- Use a cotton facemask or bandana to **protect your breathing**. Or put your face inside your clothing to protect it. Any exposed skin will burn.
- **Stay low**. Heat rises. Lay on the ground, if you need to. If you can, find a depression, manhole or subsurface opening, to get into. A ravine, ditch or a culvert could offer more protection than being exposed at ground level. Pick an area with little dry fuel. An NID ditch would be perfect about now. Cover with the wool blanket. Use any noncombustible objects to shield you from the radiant heat.
- If you are exposed and no other option, even a large **dumpster** would offer better protection than being totally exposed. The walls will be hot. Survival in these situations will depend on a variety of factors including; temperature of flame front, wind, distance to flames, type of shielding, your clothing, etc.
- No matter where you are, **expect superheated air and embers** falling on your head. The winds will be extremely strong. Some say it sounds like a train. The wind will try to rip away your blanket or shield.
- If you live near a lake or river, keep **life vests** in your vehicle. The foil window shade can offer some buoyancy in water. Instead of wearing the vest, you may

need to use it to shield your head from the radiant heat. Keep it wet so it doesn't melt.

- If you get in water, you may need to **splash water to keep the radiant heat off** and extinguish falling embers. Be cautious of river currents. Tie yourself off with a rope or paracord, if there is active current.
- **Seek medical help** as soon as possible. No doubt you will suffer from lung damage, various poisons and burns.
- **Items to have in your evac vehicle** include wool blankets, fire extinguisher, chainsaw, bolt cutter, natural fiber rope, space blankets and foil insulated window shades.
- A bright **flashlight** with strobe could be a valuable piece of gear to signal for help.
- If your cell is working, **call 9-1-1**. Tell them your precise location and request rescue or a fire-retardant drop. Do not stand up exposed to an **air drop**. It is like a ton of bricks and can crush you.
- Lastly, you may want to invest in a \$400 **fire shelter** like firefighters use, such as this one
http://www.amazon.com/gp/product/B004289P0M/ref=as_li_ss_tl?ie=UTF8&camp=1789&creative=390957&creativeASIN=B004289P0M&linkCode=as2&tag=skgblogtext-20
- Or, you can invest in structural firefighting clothing, approximately \$2500.
- If you survive, say a prayer of thanks. Then go immediately to the nearest news reporter and tell your amazing story of survival.

Remember that **topography and wind** determine fire movement. Fire burns quickly uphill. Slowly downhill. Avoid being on a ridge or slope above a fire. Fire is pushed by wind. Avoid wind tunnels and funnels such as saddles, chutes, draws, canyons or passes unless they are void of fuel.

Bottom line is, ***be a professional, don't take unnecessary risks. Get out early.***

NOTIFICATION

I hope you find the above information pretty scary. Something you would like to avoid. Yet many people find themselves in dangerous and deadly, wildfire situations. There is a **way to avoid** all this. It involves **early notification** AND **early evacuation**. Both are required. We have already discussed evacuation. But you can't evacuate early if you are not aware or notified early.

Notification refers to a system for sending and receiving information. There are several public notification systems that we have come to rely on but they are not 100% reliable. They include Code Red, EAS, NOAA, sirens, weather stations and local TV or radio stations.

In any system, there is a **lag time** between when the fire starts and when the public is notified. Lag time will generally be greater at night, when people are sleeping. The McKnight and Lobo fires of a couple years ago both started at night. Residents of those neighborhoods report they received no public notification. If you are in close proximity to the fire, lag time can be the difference between life and death.

Lag time is especially critical for people who live close to the origin of fire. They may only have minutes or seconds to escape before the fire is on them. Fire can move faster than you think. The **Paradise fire consumed one football field every second.**

The notification system utilized by Nevada County is **Code Red**. While Code Red has a place in your tool kit, don't put all your eggs in one basket. No system that relies on technology is 100% reliable. During an emergency, **cell systems can be overloaded and cell towers may be damaged** by the fire.

Citizens and neighborhoods must **create their own backup early notification system(s)**. How do we go about this? Following are some thoughts to get you started.

Everyday

When we choose to live in the beautiful forest, we have to **accept responsibility** for our own safety.

Notification starts with **being alert and aware** of your environment. Especially during Red Flag Warning periods (high winds, high temperatures, low humidity). Wildfire season is now pretty much a year-round condition. And, as mentioned earlier, **be careful.**

Someone has to be first to spot a fire and notify 9-1-1. That person should also be prepared to notify the immediate neighborhood so everyone can evacuate. This requires a plan everybody is familiar with.

Notice things that are **out of the ordinary**, i.e. CALFIRE airplanes flying overhead, presence of smoke in the air, numerous sirens in your vicinity, disruption in your power, phone or internet service. Any of these should cause you to investigate further. Go outside and take a look. **Turn on a radio** (KVMR FM 89.5), or go to **YubaNet.com** to get current warnings and orders.

Family/Neighborhood Notification Plans

Here are some ideas for family and neighborhood notification plans.

- Most importantly, **use your senses** (eyes, ears, nose, skin) plus your **gut instinct**. Don't ignore sensory input or a feeling of uneasiness.
- Have a **battery-operated radio** in the event the power goes out.

- Keep your **smart phone charged**, close by, and turned up so you can receive messages and or check websites for emergency notices.
- Organize your neighborhood to be fire conscious and **develop a notification and alert plan** that works for you. (See attached plan)
- Utilize a **messaging app** such as WhatsApp or Signal **to notify your neighborhood**. Some systems use cell towers and some use internet (VOIP). Have both in case one is down.

Tip: **Cell phones are a wonderful** tool, when they are working. Don't be completely dependent on a cell phone. It could fail when you need it most.

- Establish a neighborhood **phone tree** system of notification. This is best during the alert phase rather than the order phase. Cell service could go down once an evacuation order is given and you don't want to be making numerous phone calls when you should be evacuating.
- Have an email group to back up your messaging system
- Implement a neighborhood **Buddy System** of two to three homes per group. A good old fashioned, non-technical system. Determine if your buddy is home and ensure they are aware of conditions and able to evacuate.
- If you live in an area that receives NOAA signal, have a **NOAA weather radio** with battery backup. If purchasing a new NOAA radio, get one that can be programmed to your county. NOAA does not broadcast fire alerts in all areas.
- Some communities are adopting **CB or GMRS** to communicate. Test these systems.
- If you are evacuating, **sound your vehicle horn as you leave** to alert others. You can also utilize an air horn in a can which is louder than most car horns.
- Utilize the international distress signal. Three short bursts to indicate evacuation order.
- Don't forget those who may need **special assistance**.

Advanced Measures for Red Flag days

Establish a 24 hour or **night time fire watch**. Someone to stay awake, monitor the radio and notify others, if a fire starts.

Utilize a **public safety scanner**. There are also scanner apps for your smart phone (Broadcastify, Scanner Radio Pro) but these require cell signal.

PG&E BLACKOUTS – Public Safety Power Shutdown (PSPS)

PG&E has announced plans to shut off power in some areas during periods of peak fire danger. They have said power could be off for **up to a week**. They may try to spare downtown areas, hospitals, etc., but there are no assurances. It will depend on

conditions. They have also said, once power is shut down it could take more than **48 hours to restore it**. This means power could be off for three days, a week, or more.

These measures are to protect PG&E interests, not yours. Power outages will leave us even **more vulnerable** in the event of a fire. Normal **notification systems may not be working**, i.e. dead cell phones, no wifi, etc. If you are on a well, it will not be working. This affects everything from cooking and bathing to sanitation. Power outages will add extra layers to your planning and preparations.

I have contacted two major **grocery stores**. One said they would be closed if the power was off. The other would operate on a limited basis. A major **gas station** said they would be closed. A major **pharmacy** said they also will need to close. Essentially, in a power outage, any business that does not have a generator and ample fuel supply will be closed.

Regarding **cell phones**, it is **uncertain** how long they will be up. I get different answers from different people. Anticipate possible cell outage which would also affect data messaging and internet access.

NOTE: While most phone service carriers do keep power on their land lines, there is no requirement to do so. The same is true for cell towers. Most have battery or generator backup but not all. There is no assurance these systems will keep working in a fire or prolonged outage.

Prepare as you would for a long winter storm. Only now you will be sweating instead of freezing. **Prepare now**. Stores will be bought out when the outage is announced.

Have a **test weekend**. Turn off your power on Friday afternoon until Sunday afternoon (48 hours) and see what you miss the most. Call it "StayCamping" or "**Stamping**". What will you need for 4-7 days with no refrigeration, air conditioning, electric range, electric hot water, or trips to the store? How will you recharge your cell phones, radios, and receive information?

Consider the following in your plan:

- Keep close contact with your **buddies**.
- If **cell service is down**, Code Red will be non-functional except to landlines.
- If power is down, some landlines may also be dead. Check with your carrier.
- Without your router, you **will not have internet, email or VOIP**.
- What is your backup information and notification system? **Battery operated AM/FM radio, scanner, CB, GMRS...?**
- **KVMR** (FM 89.5) is the official emergency broadcast station and should remain operational as they have a generator. KNCO has a generator but they are not a 24-hour station.
- If you have a **generator**, how much **fuel** can you safely store?

- Consider a vehicle **jump starter system**, with or without an inverter. This can keep your cell phones and radio running, and provide LED light, etc., for several days, if managed efficiently. Solar chargers would also work.
- Solar cookers and camp stove are an alternative to electric stoves.
- Do you have **medical equipment** that requires power? You may need to relocate.
- Can you develop a good plan with your neighbors to **share resources**?
- **ATMs and credit cards** may not be working. Keep some **cash** available.
- This could be your real **Y2K** scenario.
- Maybe it will be better just to **plan to leave the hill** until power is restored.

Evacuation Check List

(Sample, customize to your needs)

10 Minutes

- Don fire safe clothing
- Load everything in guest room closet
 - Go Bags/Day bags
 - Extra clothes bag
 - Food pail (3-day supply)
- Water – 3 - 2 ½ gal containers
- Computers, phones, chargers, hard-drive back-up, thumb drive
- Small safe with key
 - Passports
 - Papers
- Maps
- Disconnect garage doors
- Ensure at least half tank of fuel
- Chainsaw, reciprocating saw, bolt cutter

20 minutes

- Shut off gas and electric
- Two pieces of art
- Current year tax receipts (previous years are stored electronically)
- Move gas away from buildings
- Communications (CB, GMRS, HAM, etc.)
- Jewelry
- Picture box

30 Minutes

- First aid kit
- Additional clothes
- Place yard tools for FF's (ladder, hose, rake, shovel)
- Remove patio furniture
- Remove fabric window covering.
- Unlock doors

Supplemental Evacuation Checklist – Items to keep in your car

You will not always be home when you need to evacuate. These items can be kept in the glove box, trunk, or a small plastic tote. Move needed items from the trunk into the cabin before you leave. Items to keep in your car include:

- Water – at least one liter for each person. Drinking water helps to reduce anxiety
- Food snacks
- First aid kit – include burn gel or aloe vera cream for minor burns
- Sanitation kit – container, plastic bags, wipes, TP, female funnel
- Goggles and face masks (N95/99/100)
- Shielding - wool blankets, sunshield, or foil survival blankets
- Vehicle power pack (lithium ion)
- Flashlight
- Maps with escape routes and safe zones highlighted
- Life vests, if near a lake or river with rope or paracord
- Fire extinguisher
- Chainsaw and bolt cutter to remove obstacles

Wings Wildfire Group (WWG)

Notification Plan

Membership in the Wings Wildfire Group (WWG) is voluntary and open to all residents who use Wings of Morning Drive. By joining the WWG you agree to follow the guidelines below. The plan consists of three tiers:

Tier One – Buddy System. To ensure everyone in the neighborhood is connected with others.

- All homes in the Wings Wildfire Group will be in a buddy group of 2 - 3 households, based on proximity to each other.
- Buddy groups will routinely stay in touch and check on each other. For example, you can keep an eye on each other's property during absences. You will account for each other and offer assistance during an emergency.
- During red flag periods, power outages, evacuation warnings and evacuation orders, make sure your buddies are informed and are prepared and able to do what is needed.
- In your buddy group, discuss the benefits of being prepared and evacuating early or evacuating together. Operate on the side of caution and do not take chances.
- Buddy groups are encouraged to set up a separate message group to stay in touch with each other on a regular basis.

NOTE: Buddy groups are based on residential parcels. If there are children, renters or guests on a parcel, they are part of the parcel unit. Children and tenants are encouraged to sign up for Code Red and join the Signal Emergency Alert so that they can receive emergency notifications. Each buddy unit and buddy group should decide how they will communicate with children, tenants and guests, in the event of an emergency.

Tier Two – Signal Emergency Alert (SEA). The Signal message application will be used to communicate emergency information within the WWG. Guidelines for using the SEA are:

- The SEA is only for emergency information, not for routine messaging.
- Any member of the WWG can send an emergency alert to the group. For example; Red Flag alerts, PG&E outage notices, Code Red alerts and evacuation notices.

NOTE: The County sends two kinds of evacuation notices. An "evacuation advisory or warning" means to *prepare* to evacuate. An "evacuation order" means to evacuate *immediately*.

- Redundant or repeat messages should not be sent. This will only slow people down from doing what they should be doing. If *new* or corrected information arrives, anyone can send a new message.
- For more information, go to your local radio station, MyNevadaCounty.com, Yubanet.com or check with your buddies.
- If anyone needs help to evacuate, or is unclear what to do, first contact your buddies for assistance. If buddies are unavailable, a SEA message can be sent to the larger WWG to ask for help. People closest to the individual needing help should render assistance.
- Emergency messages should be brief and to the point. DO NOT acknowledge or reply to emergency messages...unless you need assistance or have new information.
- Only send useful emergency information to the SEA group. Individual messages should be sent to via other systems. (Signal person to person, email, etc.)
- If you have non-emergency information to share with the WWG, use the email group.
- Keep your cell phone charged, turned on, and turned up so that you have the best chance of receiving emergency alerts, day or night. Redundant alerts in your parcel unit.
- In the event, power is out and WiFi is down, send a message via WWG email or evacuate and use Tier Three Horn Alert, to notify others.

Tier Three – Horn Evacuation Alert. If an *Evacuation Order* is given for our area, use horns to notify your neighbors. This is in addition to sending a SEA to the group. Here are guidelines for the Horn Alert:

- Check on your buddies to make sure they received the evacuation order and are ready and able to leave.
- As you leave, sound the horn of your car and/or the air horn in a can.

NOTE: It is possible to install an electric air horn on a vehicle for more volume.

- Direct the car horn or air horn toward the house so there is a better chance of being heard, especially at night.
- *Use three short (one-second) bursts.* Wait 5-10 seconds between bursts but do as often as necessary to alert each home you pass.
- Some vehicle horns are very weak. It would be good to keep two cans of air horn in your car.
- If you have time, drive into the neighbor's driveway to sound the alert.

Additional Notification Measures

- During periods of high fire danger, volunteers may be asked to stand watch during night time hours in order to detect fires and notify residents at the earliest possible time.

- Residents may want to purchase a public safety scanner in order to receive early notification. Scanner apps are also available for this purpose (Scanner Radio Pro, Broadcastify)

Resources

Yubanet.com (for current fire information)

Areyoufiresafe.com

ReadyNevadaCounty.org

Ready, Set, Go Handbook on website

For those who like to engage on social media:

Facebook

Nevada County Office of Emergency Services:
[facebook.com/NevadaCountyOES](https://www.facebook.com/NevadaCountyOES)

County of Nevada, CA: [facebook.com/NevadaCountyCA](https://www.facebook.com/NevadaCountyCA)

Twitter

Nevada County Office of Emergency Services: <https://twitter.com/NevCoOES>

County of Nevada, CA: <https://twitter.com/NevadaCountyCA>

Cal Fire NEU: <https://twitter.com/CALFIRENEU>

Nevada County Consolidated Fire: <https://twitter.co/NVVFIRE>

Instagram: www.instagram.com/nevadacountyca/

Nextdoor: www.nextdoor.com/agency-detail/ca/nevada-county/nevada-county

www.readyforwildfire.org/prepare-for-wildfire/get-ready/fire-resistant-landscaping/

www.frontlinewildfire.com/can-name-fire-resistant-trees-answers-may-surprise/

www.ocfa.org/RSG/HomeHardening