

Modern Wildfires: Intro to Personal Preparedness and Evacuation Safety

How to prepare yourself, your family, and
survive a fast moving wildfire

Todd Lando, Battalion Chief, Wildfire Mitigation Specialist



**FIRE
SAFE
MARIN**

Adapting to Wildfire

Why “LIVING” With Wildfire?

- Fire is a NATURAL part of our environment
- Plants, animals, and soil NEED wildfire
- Fire will ALWAYS be here
- We created the “PROBLEM” by building where fires occur
- Contributors: Fire Suppression, building in the WUI, vegetation changes, climate change

California 2017 (1964, 1923): History Repeating?



Wildfires: History Repeating?



Blaze Moves Into Sonoma County; Napa Fire Is Believed Stalemated

The Napa Register

102ND YEAR - No. 34 NAPA, CALIFORNIA, TUESDAY, SEPTEMBER 22, 1964 PRICE: 15c

Blaze moving into Sonoma County; Napa fire is believed stalemated. The fire which has now consumed 4,000 acres and destroyed 100 homes, was reported stalemated today on the ridge west of Lake George in the vicinity of Valley Lake.



Here's aerial view showing three brush-fire fire still burning in the Calistoga and Santa Rosa. (Associated Press aerial photo by Max Winter)

Steelworkers hear Johnson - LBJ Proposes Excise Tax Cut. Miller Charges 'Sleazy Smears'.

Gov. Brown today proclaimed emergency for the first time in the state's history. The proclamation was issued after the state legislature failed to pass a bill to provide for the state's defense.

Too Darn Tired. A spokesman for the state government today said that the state's defense forces were too tired to fight.

Danger Passes Calistoga Area

BY JOE MORGAN

CALISTOGA-The Calistoga area today is free from the danger of a major fire, but the threat of a smaller fire remains.

Council Cool To Geddes' Water Plan

BY JOHN EAGAN

The Calistoga area today is free from the danger of a major fire, but the threat of a smaller fire remains.

Arson Try Is Suspected At Skyline Lodge

BY JIM TUCKER

CALISTOGA-Sheriff's deputies today are investigating an alleged arson attempt at the Skyline Lodge.

Brown Declares Disaster Area

BY JIM TUCKER

Gov. Brown today proclaimed emergency for the first time in the state's history. The proclamation was issued after the state legislature failed to pass a bill to provide for the state's defense.

100 Homes Destroyed

FIRE HITS SANTA ROSA

San Francisco Chronicle THE VOICE OF THE WEST. TUESDAY, SEPTEMBER 22, 1964. 100 HOMES DESTROYED.

Big Debate On S. F. Slum Clearance. Planning Post Open To Herman.

Big Debate On S. F. Slum Clearance. Planning Post Open To Herman. The Board of Supervisors today is expected to vote on a plan to clear the city's slums.



The flames ate into both Sonoma and Napa counties-destroying this home near the town of Napa.

Sparks in an Eerie Wind

By Donna Peletier. Sparks in an eerie wind today set off a series of fires in the Santa Rosa area.

San Francisco Chronicle

10 deaths from at least 14 major fires burning in Northern California. 103,000 acres burned across eight counties. 20,000 people evacuated. 1,500 homes and commercial facilities destroyed. 114,000 PG&E customers in Napa and Sonoma counties without power. 100 fire victims treated at hospitals in Napa and Sonoma counties.

DEVASTATION IN WINE COUNTRY



Flames consume a main building at the Signoretto Estate winery in Napa, one of more than 1,500 businesses and homes destroyed by wild-driven flames.

Homes gone: Shock in ruined neighborhoods

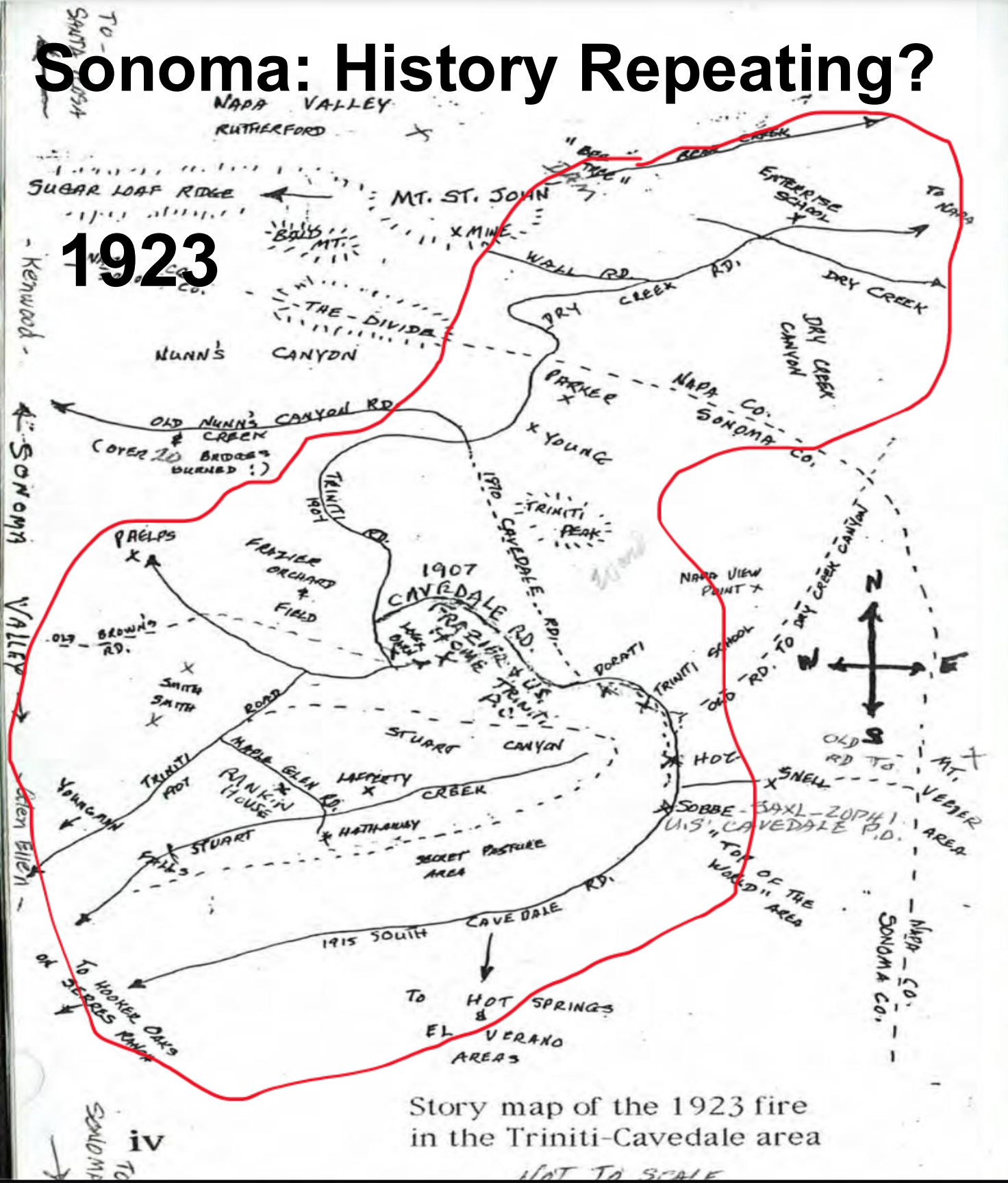
By Jim Tucker, Kurtis Alexander and Steve Rubenstein. A storm of fire swept through Napa and Sonoma counties today, killing and injuring people and destroying homes and businesses.

Wineries: Quality of region's grapes could be affected for years to come

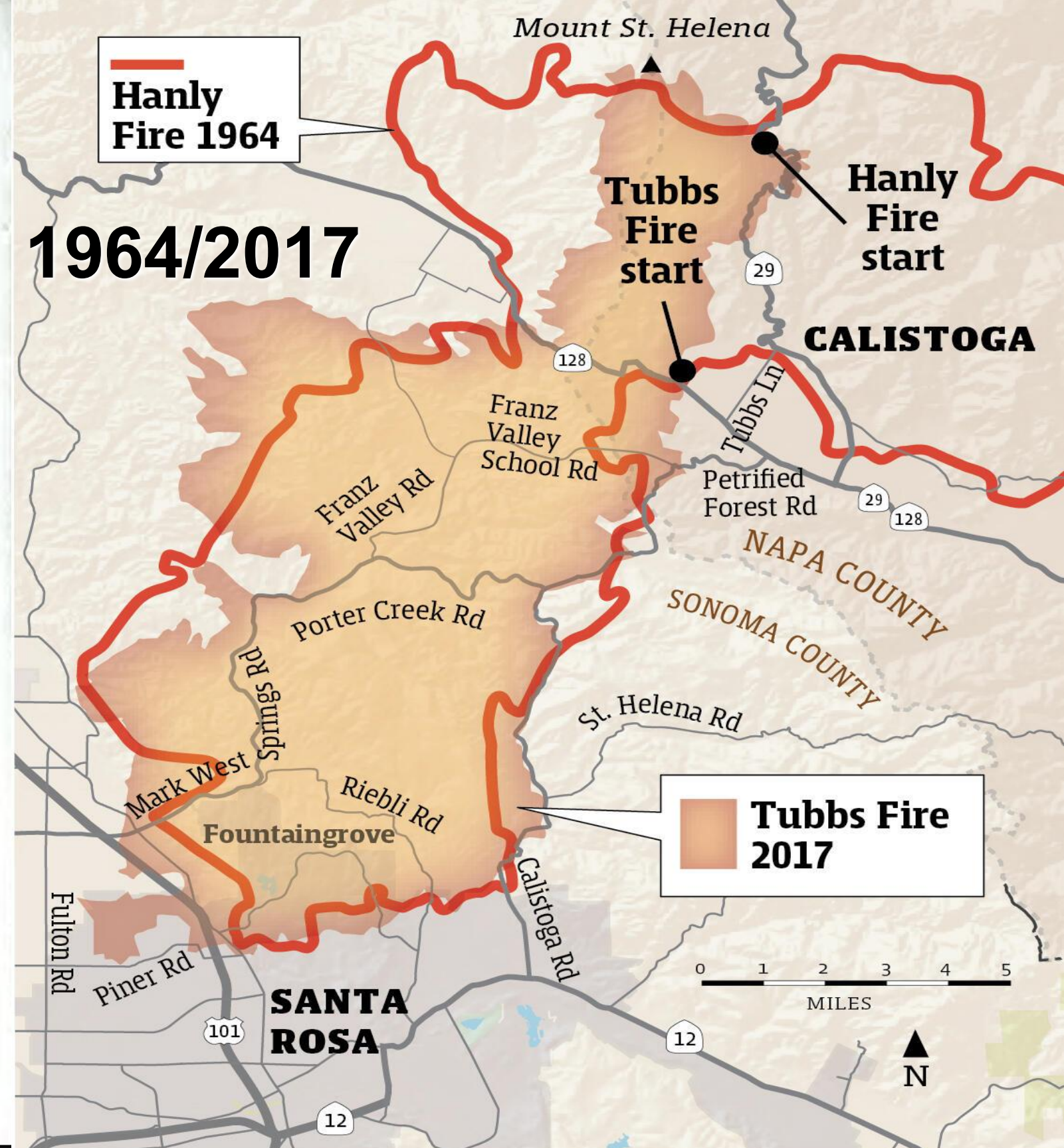
By Esther M. ... Wineries in the Napa and Sonoma counties today are worried about the quality of their grapes.

Sonoma: History Repeating?

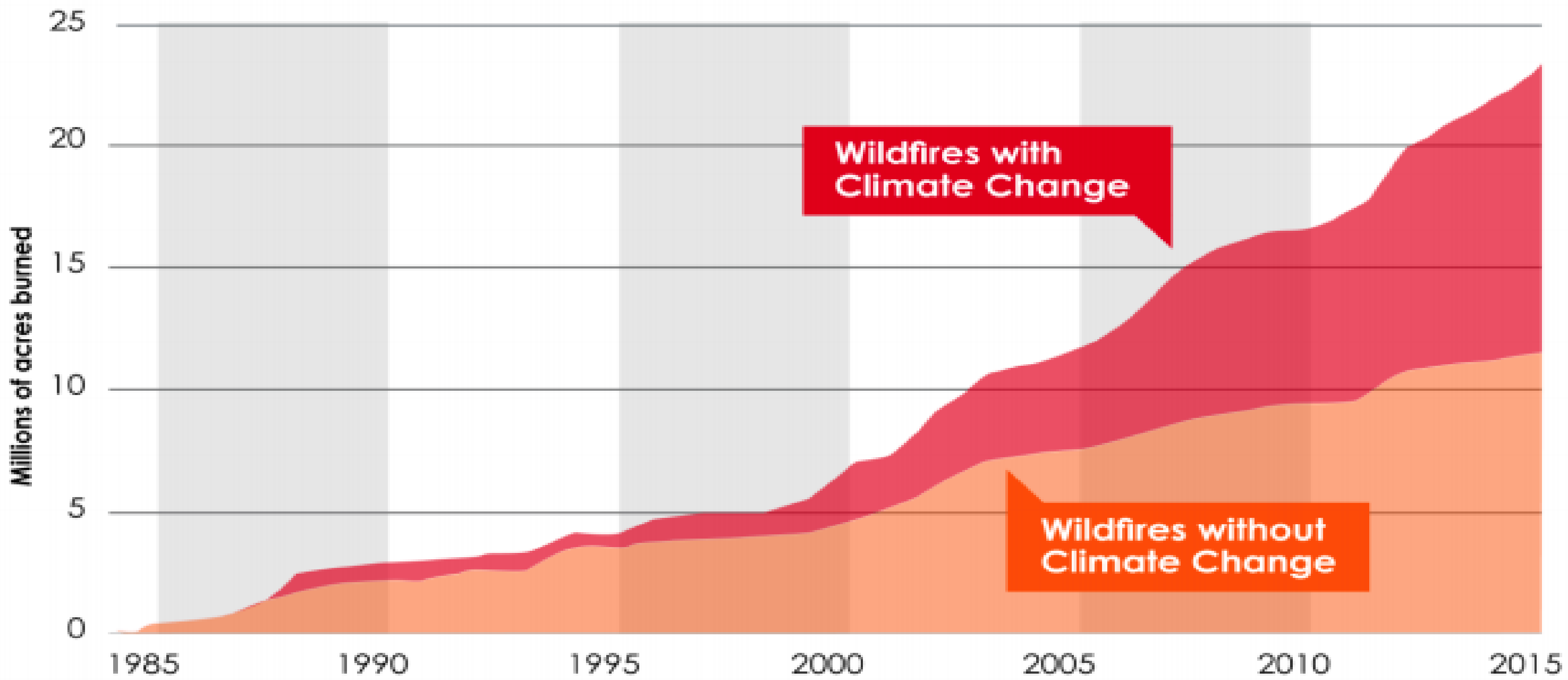
1923



1964/2017



Climate Change: Future Wildfires



Source: Abatzoglou/Williams 2016, PNAS 113

A night scene of a traffic jam on a multi-lane road. Numerous cars are stopped, with their headlights and taillights glowing. In the background, a large, intense fire or explosion is visible, with bright orange and yellow flames rising into the dark sky. The scene is illuminated by the fire and the car lights, creating a dramatic and urgent atmosphere. The text "Ready. Set. Go." is overlaid in the center of the image.

Ready. Set. Go.

Ready. Set. Go.



When LIVING WITH FIRE, You Must:

Be **READY** with preparedness

Be **SET** with situational awareness

GO early when a fire starts

BE READY. BE SET. GO NOW!

Know evacuation levels and follow advice of emergency officials.

Make the best decision for your safety. Don't wait to evacuate if you feel unsafe!



LEVEL 1

BE READY

PREPARE TO EVACUATE

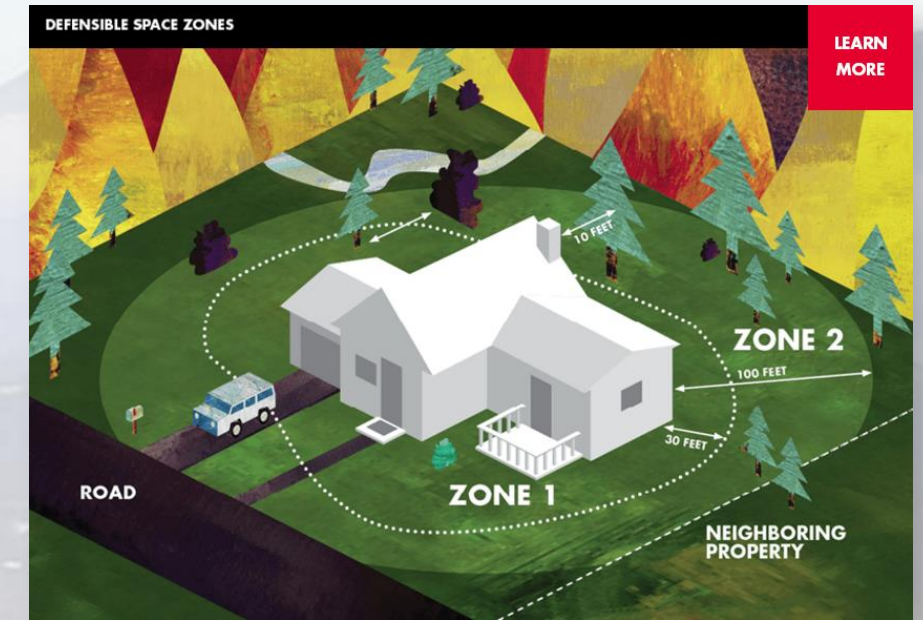
BE AWARE OF DANGER IN THE AREA

- ✓ *Stay informed: Sign up for emergency alerts with your county. Check local emergency service websites, social media, TV news and radio.*
- ✓ *Have your emergency plan and go-kit of supplies ready.*
- ✓ *Act early if you or your loved ones can't move quickly.*
- ✓ *Consider moving pets and livestock.*



Be **READY** with Preparedness before a fire

1. Personal Preparedness
2. Hardening Your Home
3. Defensible Space
4. Community Organizing



Most Homes Ignite From Embers, NOT Flames!

- Wildfires generate **BILLIONS** of embers.
- Embers can carry **1-2 miles** in wind.
- Homes can be protected from embers with design and ignition resistant materials.
- Most fatalities occur in or just outside a home

DEFENSIBLE SPACE ZONES



Zone Zero:

0'-5'

Zone 1:

5'-30'

Zone 2:

30'-100'

Beyond

100'+

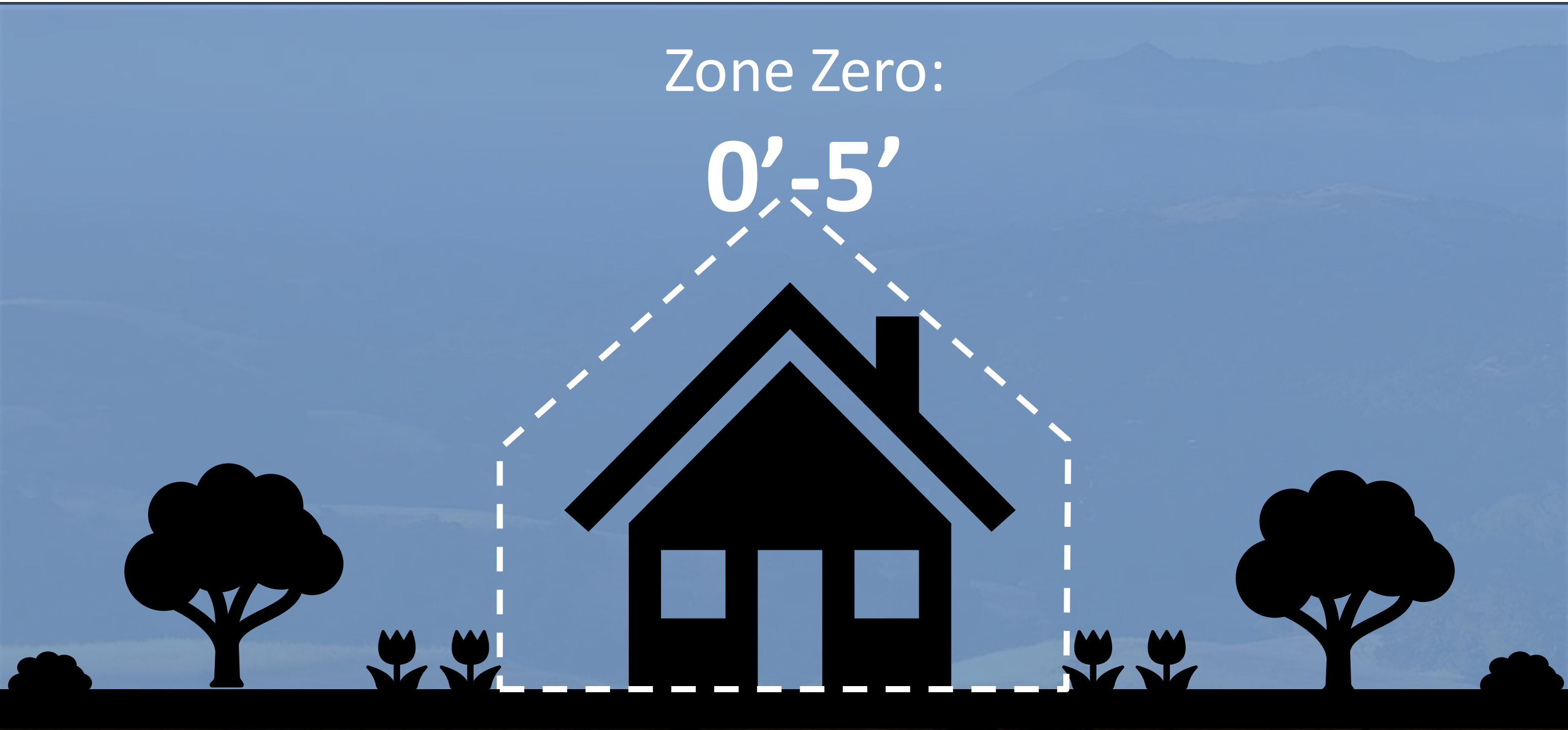


ZONE ZERO FOR SURVIVAL



Zone Zero:

0'-5'



Zero-Combustibles in ZONE ZERO

Common Combustibles

Often found 0'-5' from structures

1. Wood chip/bark mulches
2. Jute door-mats
3. Wood patio furniture
4. Potted plants
5. Privacy screens/curtains
6. Stored lumber/firewood
7. Waste/recycling cans





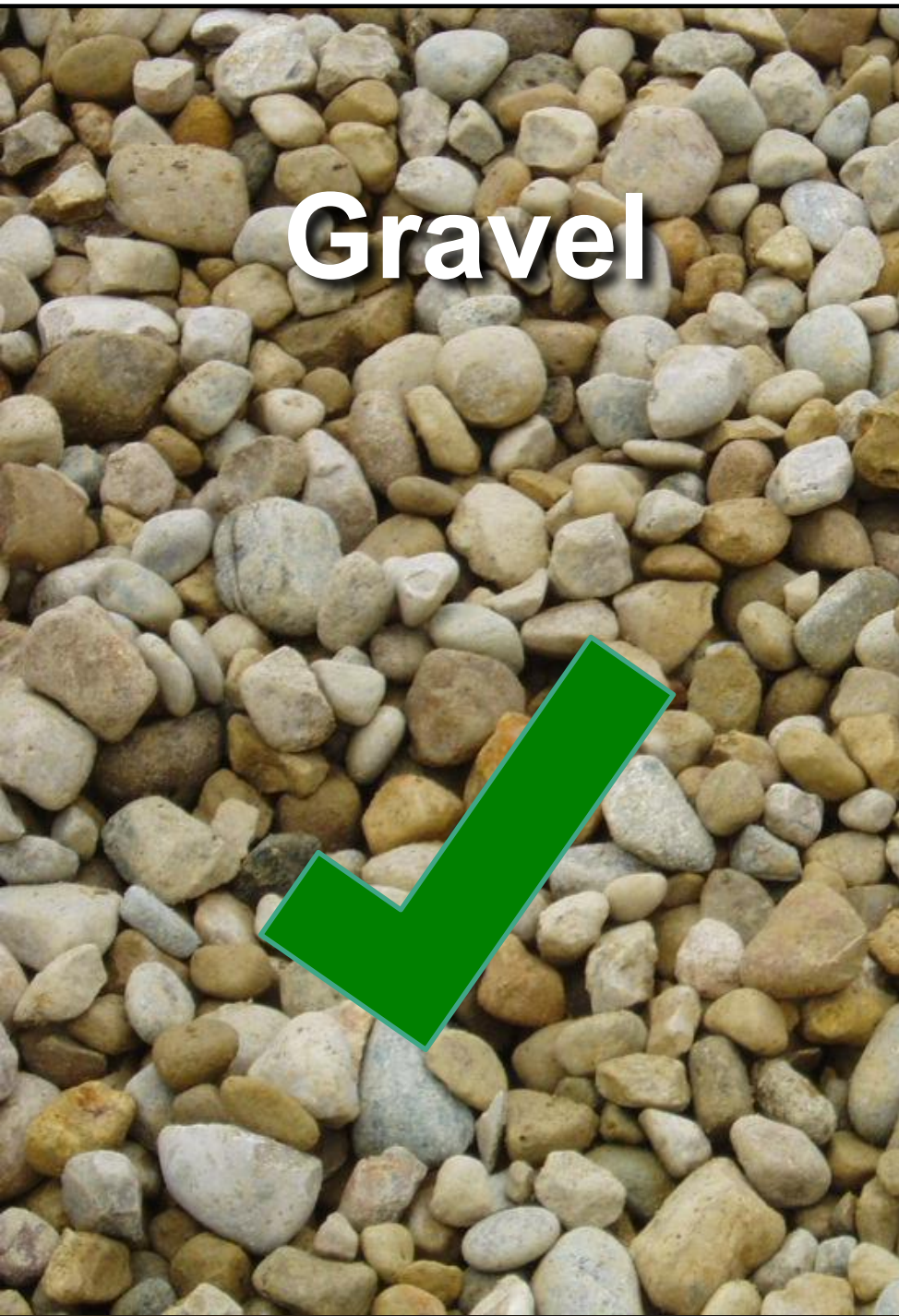


Mulches

- Use only Gravel or noncombustible material within 5' of structures



ZONE ZERO Mulches



Gravel



1/2" or Larger Bark



Shredded Bark

DECKS & PORCHES Need Attention



Decks and Porches

- Keep them clean!
- Enclose the underside
- Not a storage space.



FENCES & GATES are Fire Wicks



Wood Fences burn!

- Wooden fences shouldn't attach to your house
- Use noncombustible materials
- Open gates to create a "fuel break" (as a last resort)





Protect your ROOF



GOT LEAF LITTER? Start at the Roof!

1. Ensure your roof is built to "Class A" standards!
2. Clear leaves and needles
3. Clean regularly May-Oct
4. Cover gutters



ROOF Trouble Spots



Pay close attention to areas where the roof meets a wall or vertical surface

Power Failure During Wildfires



Battery Backups

- Garage Doors
- Telephones
- Internet/WiFi
- ~\$99



BE READY. BE SET. GO NOW!

Know evacuation levels and follow advice of emergency officials.

Make the best decision for your safety. Don't wait to evacuate if you feel unsafe!



BE SET

BE SET TO EVACUATE AT A MOMENT'S NOTICE
SIGNIFICANT DANGER IN THE AREA

-  *Follow your emergency plan and grab your go-kit of supplies.*
-  *Check news and radio for updates.*
-  *Inform loved ones of your evacuation plans.*
-  *Conditions can change rapidly. Leave if you feel unsafe.*



Be **SET** with situational & weather awareness

- During Fire Season
 - Fires can strike ANY day
- During Extreme Fire Weather
 - Red Flag Days
- When fire is burning nearby
- Monitor Alerting Systems



RED FLAG WARNING

Saturday night through Monday morning

Weather Forecast Office
San Francisco Bay Area
Issued Oct 06, 2018 10:50 AM PDT



SAND FIRE BREAKING NEWS
SANTA CLARITA
EYEWITNESS NEWS



#abc7eyewitness 11:02 77°

FIRE WEATHER

Weather Forecast
RED FLAG WARNING?

Apps, TV & Radio
Weather REPORTS

Look, Listen, Smell
BE OBSERVANT



When fire risk is high, or a fire is burning nearby

- Monitor information sources
- Review your **Evacuation Plan Checklist**
- Place Emergency Supply Kit in your vehicle
- Prepare:
 1. Yourself (dress appropriately!)
 2. Your kids
 3. Your Pets
 4. Your home
- Is it a Red Flag Day? Leave immediately when ordered or if you feel unsafe!

BE READY.

BE SET.

GO NOW!

Know evacuation levels and follow advice of emergency officials.

Make the best decision for your safety. Don't wait to evacuate if you feel unsafe!



GO NOW!

LEAVE IMMEDIATELY!

EXTREME DANGER IN THE AREA

-  *Leave without delay. It is unsafe to stay.*
-  *Do not stop to gather belongings or protect your home.*
-  *Emergency services may not be available to help if you choose to stay.*
-  *Do not return until officials announce the area is safe.*



GO early when a fire starts

- GO means *take action*
- Monitor notification systems
- ***Leave immediately***
 - when ordered
 - if conditions worsen
 - if you feel unsafe.
- Follow checklists if you have time.



Your Alerting Systems

1. Phone: Voice, Text

- Local Alerts (emergency)
- Everbridge (Community Profile)
- WEA (emergency)



Find your county

GENASYS

Know Your Zone



2. Email, Web, Apps

- Watch Duty (Fire info)
- X, Facebook, NextDoor (general info)

Watch Duty

Monitor Fires

3. Others

- AM/FM Radio
- NOAA Weather Radios
- Word of mouth
- Knock on door



Web, Social

Official Channels

Eyes & Ears

Trust Yourself



Evacuation Checklist



Review Checklist

- During Red Flag Warning
- When Fire is burning nearby
 1. Evacuation Order
 2. Evacuation Warning
 3. While evacuating

WILDFIRE EVACUATION CHECKLIST

Learn more about evacuation preparedness online at www.firesafemarin.org/evacuation

If evacuation is anticipated and time allows, follow this checklist to give your family and home the best chance of survival. Complete the Family Communication Plan on the opposite side for each family member and keep in your wildfire and emergency "Go Kit(s)."



EVACUATION NOTIFICATIONS & INFORMATION

Register for Alert Marin and Nixle to receive evacuation and fire information notices!

ALERT MARIN www.alertmarin.org
Used when emergency action is needed at a specific address: wildfires, imminent flooding, evacuations, or other public safety incidents where lives may be at risk; critical information about evacuation routes, hazards, and shelters. *Online registration required!*

NIXLE www.nixle.com
Used to provide incident information for a specific zip code: road closures, general updates, issues affecting larger areas, post-disaster information about shelters, transportation, or supplies, police activity and general public safety information.

SOCIAL MEDIA, RADIO, TV
Used to provide less critical and low level frequent updates intended for larger populations: traffic updates, road closures, incident updates, and contact information; safety announcement, power outages, minor issues, disaster recovery resources.

EVACUATION ORDER: Leave now! Evacuate immediately. Do not delay to gather valuables or prepare your home. Follow any directions given in the evacuation order.

EVACUATION WARNING: Evacuate as soon as possible. A short delay to gather your Go Kit and prepare your home may be OK. Leave if you feel unsafe or conditions change.

SHELTER IN PLACE: Stay in your current location or the safest nearby building or unburnable area. May be required when evacuation is impossible, too dangerous, or unnecessary.

ALWAYS:

COMMUNICATIONS

- ☐ Keep your cell phone fully charged.
- ☐ Notify an out-of-area contact of your phone number, location and status. Update regularly.
- ☐ Leave a note with your contact info and out-of-area contact taped to fridge or inside a front window.
- ☐ Check on or call neighbors to alert them to prepare at first sign of fire.

ON YOUR PERSON

- ☐ Dress all family members in long sleeves and long pants; heavy cotton or wool is best, no matter how hot it is.
- ☐ Wear full coverage goggles, leather gloves, head protection.
- ☐ Cover faces with a dry cotton or wool bandanna or scarf over an N95 respirator. Tie long hair back.
- ☐ Carry a headlamp and flashlight (even during the day).
- ☐ Carry car keys, wallet, ID, cell phone, and spare battery.
- ☐ Drink plenty of water, stay hydrated.
- ☐ Put "Go Kits" (reverse) in your vehicle.

PETS & ANIMALS

- ☐ Locate your pets and place in carriers NOW. You won't be able to catch them when the fire approaches.
- ☐ Be sure your pets wear tags and are registered with microchips.
- ☐ Place carriers (with your pets in them) near the front door, with fresh water and extra food.
- ☐ Prepare horses and large animals for transport and consider moving them to a safe location early, before evacuation is ordered.

IF TIME ALLOWS:

INSIDE THE HOUSE

- ☐ Shut all windows and doors (interior too) and leave them *unlocked*.
- ☐ Remove combustible window shades and curtains; close metal shutters.
- ☐ Move furniture to the center of the room, away from windows.
- ☐ Leave indoor and outdoor lights on.
- ☐ Shut off HVAC and ceiling fans.

OUTSIDE & IN NEIGHBORHOOD

- ☐ Place combustible outdoor items (patio furniture, toys, doormats, trash cans, etc.) in garage or 30' from structures (optional: place in a pool).
- ☐ Shut off gas at the meter or propane tank; move small tanks at least 15' away from combustibles.
- ☐ Connect garden hoses with squeeze-grip nozzles to outdoor spigots for use by firefighters.
- ☐ Fill water buckets and place around outside of house, especially near decks and fences.
- ☐ Clean your gutters and blow leaves away from house.
- ☐ Back your car into driveway, loaded, with doors and windows closed.
- ☐ Prop open fence and side gates.
- ☐ Place ladder(s) at the corner(s) of structures for firefighters.
- ☐ Seal attic and ground vents with pre-cut plywood or metal covers (even duct tape will protect from ember entry) if time allows.
- ☐ Patrol your property and monitor conditions. Leave if spot fires ignite or conditions change.

WHEN YOU LEAVE:

- ☐ Leave immediately if ordered.
- ☐ Don't wait for an evacuation order if you feel unsafe or conditions change; leave early if unsure.
- ☐ Assist elderly or disabled neighbors.
- ☐ Carpool with neighbors to reduce traffic.
- ☐ Take only essential vehicles with adequate fuel.
- ☐ In your car, turn on headlights, close windows, turn on inside air and AC, tune to local radio.
- ☐ Drive slowly and defensively; be observant.
- ☐ The best evacuation route is usually the one you know best. Take the fastest paved route to a valley floor, away from the fire if possible.
- ☐ Proceed downhill, away from the fire if possible. Know at least two routes.
- ☐ If roads are impassable or you are trapped: take shelter in a building, car, or an open area; park in an outside turn if trapped on a hillside; stay far from vegetation; look for wide roads, parking lots, playing fields, etc.
- ☐ If trapped, you are better protected inside a building or vehicle.
- ☐ Don't abandon your car in the road if passage is impossible. If you must leave your car, park it off the road and consider other options for shelter.
- ☐ Evacuate on foot only as a last resort.
- ☐ Don't evacuate by fire road, uphill, or into open-space areas with unburned vegetation.
- ☐ Remain calm - panic is deadly.

Wildfire Evacuation Checklist and Family Communication Plan (2019-07-17)

FIRE Safe MARIN | www.firesafemarin.org

Wildfire & Emergency “GO KIT”

- Make kit for each family member
- Make kit for pets
- Keep in backpacks
- Near front door or in car



Personal Protective Clothing



DRESS for survival

- Cover-up to protect against heat and flying embers.
- Long pants, long sleeve shirt, heavy shoes/boots, cap, dry bandanna for face cover, goggles or glasses.
- 100% cotton is best.

Personal Protective Clothing

WHY WEAR PERSONAL PROTECTIVE CLOTHING?

Being in or near a bush fire can cause a number of different injuries and everyone should wear protective clothing to avoid injury from smoke, sparks, embers and extreme heat. Loose fitting clothing made from natural fibres such as pure wool, heavy cotton drill or denim is important to protect you from injury. Synthetic fabrics can melt or burn.



A pair of heavy cotton pants. For example denim jeans, oil-free drill pants or cotton overalls.



Sturdy leather work boots or shoes along with a pair of woollen or cotton socks.



A wide-brimmed hat or hard hat can stop embers from dropping onto your head or down the back of your shirt.



Glasses or goggles will protect your eyes against any smoke, embers and debris that may be in the air.



Gloves.



A mask or cloth (non-synthetic) to cover your nose and mouth will protect you from inhaling smoke, ash and embers.



A long-sleeved shirt made from natural fibres such as cotton or wool is ideal.

PREPARE YOUR **PETS**

- Microchip & Tags
- Keep Carrier Ready During Fire Season
- During a fire, keep pets in carriers with food and water
- Place near front door



Family COMMUNICATION PLAN



One out-of-area contact.

- Local lines fail. Long distance often works.
- Everyone calls the same person.

One meeting place.

- Assume you'll be separated when it starts.

Plan for being split up

- Due to work, school, errands.
- Who gets the kids?
- Who gets the animals?

Write it down.

- Wallet, fridge, phone.
- You will not remember it under stress.

The image shows a FEMA Family Emergency Plan form. At the top, it says 'Ready. Prepare. Plan. Stay Informed.' and 'FEMA'. Below this, there is a section for 'Neighborhood Meeting Place' and 'Out-of-Town Meeting Place'. The main section is 'Fill out the following information for each family member and keep it up to date.' It includes fields for Name, Date of Birth, Social Security Number, and Important Medical Information for up to five family members. There is also a section for 'Write down where your family spends the most time: work, school and other places you frequent. Schools, daycare providers, workplaces and apartment buildings should all have site-specific emergency plans that you and your family need to know about.' This section includes fields for Work Location One, Work Location Two, Work Location Three, and Other place you frequent, each with Address, Phone, and Evacuation Location. At the bottom, there is a table with columns for Name, Telephone Number, and Policy Number. The footer says 'Dial 911 for Emergencies'.

ring

Ben Ibarra



10/24/2019 14:59:21 PDT





DON'T BE THIS GUY
EVACUATE!



Stay in your **CAR!**

- You're safer in your car
- Lights on, windows up, inside air
- Go on foot only if there's no other option
- Avoid fire roads! It's safer to stay on pavement
- Take the fastest route to valley floor/grocery store!
- Consider Refuge Areas if trapped
- Carpool to reduce cars on road

Camp Fire, Paradise, CA. November 8, 2018



FIRE ROADS are NEVER for evacuation!



NEVER!

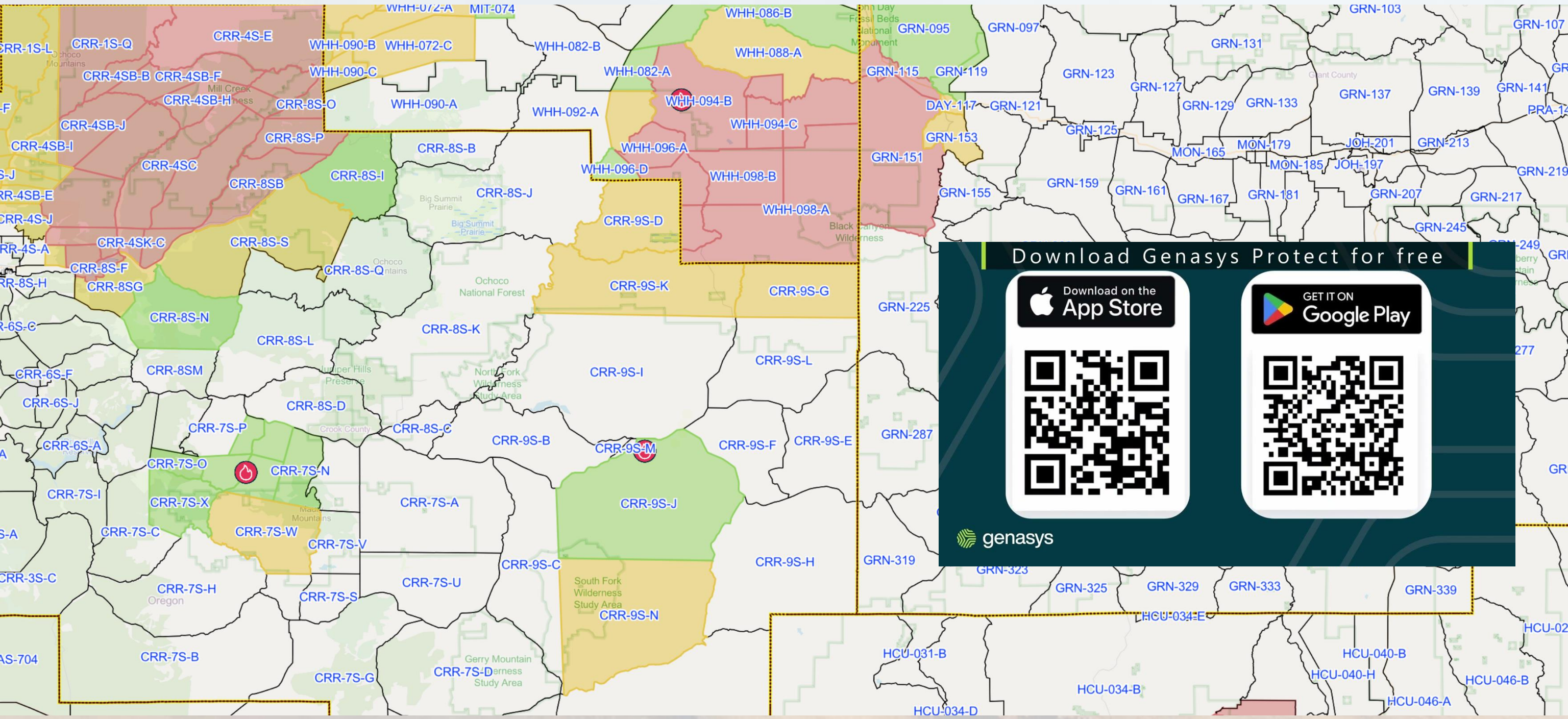
Evacuate on FOOT?



A LAST RESORT

**DOWNHILL ONLY! Last resort,
and only if pavement is blocked**

GENASYS Protect: "Know Your Zone"



Download Genasys Protect for free

Download on the App Store



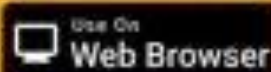
GET IT ON Google Play



genasys

Stay Safe From Wildfires When Seconds Count

Watch Duty, a 501(c)(3) nonprofit, alerts you of nearby wildfires and firefighting efforts in real-time.



How It Works

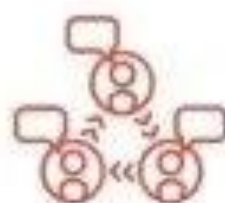


<https://www.watchduty.org/>



Who We Are

Watch Duty is operated by real people -- not machines. We are active and retired wildland firefighters, dispatchers, first responders, and reporters.



How We Work

We collaborate in real-time, gather information from official sources, and radio communications to distill just the facts.



When We Notify

If an incident we are monitoring has a threat to life or property we notify the public via the Watch Duty app.

Temporary Refuge Areas

May provide safe refuge when evacuation is impossible or route is blocked.

- Ball fields
- Parking lots
- Golf-courses
- Large open areas with little or no vegetation.



1. Wait for the danger to pass
2. Listen for instructions from the authorities

Your ASSIGNMENT



Do These Six Things *This Week*

1. Ask questions
2. Sign up for your county or borough alerts
3. Look up your evacuation zone
4. Build go-kits for every person and pet
5. Write your family plan, one out-of-area contact
6. Clear Zone Zero, five feet around your house



**FIRE
SAFE
MARIN**

Adapting to Wildfire

Resource sheet with links for all six states available after this session.