

DISASTER PREPAREDNESS MANUAL

—
NATURAL DISASTERS
MAN-MADE DISASTERS
PATIENT FACT SHEETS

VA



U.S. Department
of Veterans Affairs

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WILDFIRES

INTRODUCTION

Wildfires occur most often in areas of dense vegetation in the countryside or the wilderness, but are also common in densely populated areas that are prone to drought, high temperatures, and low humidity. A wildfire differs from other fires by its extensive size, the speed at which it can spread out from its original source, its potential to change direction unexpectedly, and its ability to jump gaps such as roads, rivers, and fire breaks. The intensity of fires and the rate with which they spread is directly related to wind speed, temperature, relative humidity, and the availability of fuel. Smoke from wildfires is a mixture of gases and fine particles from burning trees and other plant materials. Smoke can hurt your eyes, irritate your respiratory system, and worsen chronic heart and lung diseases.



DID YOU KNOW?

- Wildfires while often very destructive can also have various beneficial effects. Some plant species depend on the effects of fire for growth and reproduction.
- Many names are used to describe wildfires depending on the type of vegetation being burned (e.g., brush fire, grass fire, wildland fire, etc.).

Humans start approximately 90% of wild fires and lightning starts the remaining 10%. Wildfires can cause extensive damage, both to property and human life.

For example:

- In March 2006, residents in the Texas panhandle suffered through over a week of devastating fires that claimed 12 lives and damaged over \$16 million in property.
- In Utah, a fire burned for 18 days until it grew to 12,607 acres and threatened a town, eventually spreading into a residential area where it destroyed three homes and eight outbuildings.

WHO IS AT GREATEST RISK FROM WILDFIRE SMOKE?

- **People who have heart or lung diseases**, like congestive heart failure, angina, chronic obstructive pulmonary disease (including emphysema), or

asthma, are at higher risk from wildfire smoke. Older adults are more likely to be affected by smoke. This may be due to their increased risk of heart and lung diseases.

- **Children** are more likely to be affected by health threats from smoke. Children's airways are still developing and they breathe more air per pound of body weight than adults. In addition, children often spend more time outdoors engaged in activity and play.



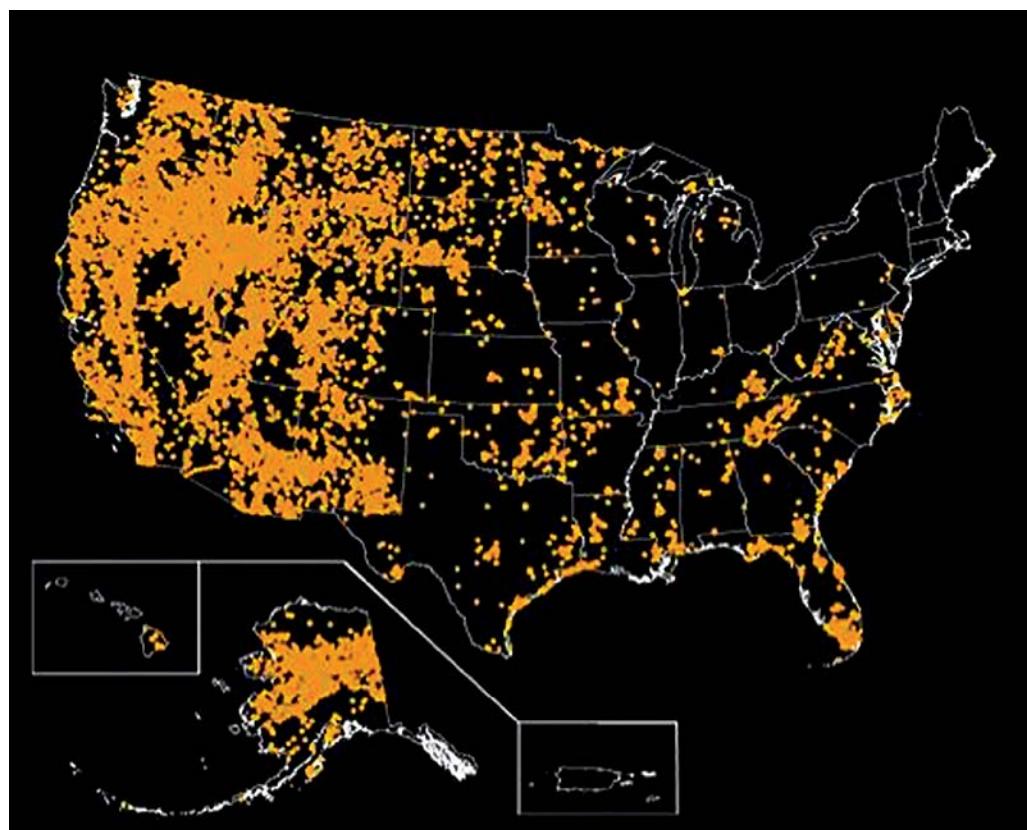
Some areas of the country are more prone to large wildfires. Being aware about whether you live in an area (or you are visiting an area) that is prone to wildfires and knowing wildfire safety can greatly decrease your chances of being injured and can also decrease the chance that your home will be destroyed. The map below highlights some of the areas that have experienced large wildfires (greater than 250 acres) between 1980 and 2003.

Continuously updated maps of current United States wildfire locations, perimeters, and fire potential areas as well as wildfire related social media posts are available at <http://www.esri.com/services/disaster-response/wildlandfire/latest-news-map.html>. Maps of current wildfires and other natural hazards are also available from the USGS Current Natural Hazards Events at <http://nhss.cr.usgs.gov/>.

PRACTICE WILDFIRE SAFETY

- Contact your local fire department, health department, or forestry office for information on fire laws. Comply with local regulations if you plan to burn trash or debris. Check with your local fire department to be sure the weather is safe enough for burning.
- Make sure that fire vehicles can get to your home. Clearly mark all driveway entrances and display your name and address. Some fire departments

■ Wildfires in the United States and Puerto Rico



This map shows locations that experienced wildfires greater than 250 acres, from 1980 to 2003.

have systems in place that identify people who need special assistance. If you believe that you need special assistance in the event of a wildfire, check with your local fire department to see if it has such a program.

- Display a sign or sticker in your window identifying any animals that live in the house. Please see Fact Sheet: **Protect Your Pets in a Disaster** for additional information on how to protect your animals during a disaster.
- Report hazardous conditions that could cause a wildfire.

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- Teach children about fire safety. Keep matches and lighters out of their reach.
- Prepare, build, maintain, and extinguish campfires safely.
- Post fire emergency telephone numbers.
- Plan several escape routes away from your home and your neighborhood — by car and by foot. Be sure to practice your plan.
- Talk to your neighbors about wildfire safety. Plan how the neighborhood could work together after a wildfire. Make a list of your neighbors' skills such as medical or technical. Consider how you could help neighbors who have special needs such as elderly or disabled persons. Make plans to take care of children who may be on their own if parents cannot get home.
- Identify areas that you can use as shelter if you are required to evacuate.

BEFORE WILDFIRE THREATENS

Design and landscape your home with wildfire safety in mind. Select materials and fire-resistant plants that can help contain fire rather than fuel it. A good resource for proper planning is www.firewise.org

Create a 30- to 100-foot safety zone around your home. Within this area, you can take steps to reduce potential exposure to flames and radiant heat. Homes built in pine forests should have a minimum safety zone of 100 feet. If your home sits on a steep slope, standard protective measures may not suffice. Contact your local fire department or forestry office for additional information.

- Rake and clear leaves, dead limbs, twigs, and other

flammable vegetation.

- Thin a 15-foot space between tree crowns and remove limbs within 15 feet of the ground.
- Remove dead branches that extend over the roof.
- Prune tree branches and shrubs within 15 feet of a stovepipe or chimney outlet.
- Ask the power company to clear branches from powerlines.
- Remove vines from the walls of the home.
- Mow grass regularly.
- Clear a 10-foot area around propane tanks, including those used for grills or barbecues. Place a screen over the grill — use nonflammable material with mesh no coarser than one-quarter inch.
- Regularly dispose of newspapers and garbage at an approved site.
- Place stove, fireplace, and grill ashes in a metal bucket, soak in water for 2 days; then bury the cold ashes in mineral soil (i.e., any soil consisting primarily of mineral material — e.g., sand, silt, clay).
- Store gasoline, oily rags, and other flammable materials in approved safety cans. Place cans in a safe location away from the base of buildings.
- If possible, stack firewood at least 100 feet away and uphill from your home. Clear any combustible material within 20 feet of your firewood pile.
- Review your homeowner's insurance policy and also prepare/update a list of your home's contents.

PROTECT YOUR HOME

- Regularly clean roof and gutters.
- Inspect chimneys at least twice a year. Clean them at least once a year. Keep the dampers in good working order. Equip chimneys and stovepipes with a spark arrester that meets the requirements of National Fire Protection Association Standard 211. (Contact your local fire department for exact specifications.)
- Use $\frac{1}{8}$ -inch mesh screen beneath porches, decks, floor areas, and the home itself. Also, screen openings to floors, roof, and attic.
- Install a dual-sensor smoke alarm and carbon monoxide detector on each level of your home, especially near bedrooms; test monthly and change the batteries at least once each year.
- Teach each family member how to use a fire extinguisher (ABC type) and show them where it is kept.
- Keep handy household items that can be used as fire tools: a rake, axe, handsaw or chain saw, bucket, and shovel.
- Keep a ladder that will reach the roof.
- Consider installing protective shutters or heavy fire-resistant drapes.

Plan your water needs

- Identify and maintain an adequate outside water source such as a small pond, cistern, well, swimming pool, or hydrant.
- Have a garden hose that is long enough to reach any area of the home and other structures on the property.

- Install freeze-proof exterior water outlets on at least two sides of the home and near other structures on the property. Install additional outlets at least 50 feet from the home.
- Consider obtaining a portable gasoline powered pump in case electrical power is cut off. Be sure to follow the portable gasoline powered pump user manual instructions.

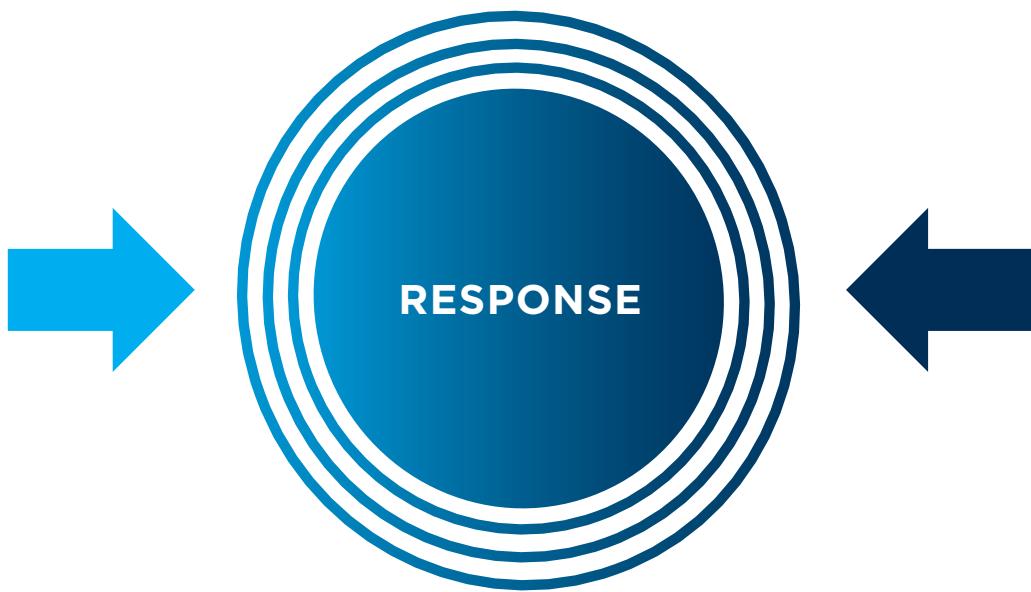


Create a Disaster Kit

When wildfire threatens, you will not have time to shop or search for supplies. Assemble a Disaster Supplies Kit now with items you may need. See the Fact Sheet: **Emergency Supplies for Disaster Preparedness**, for information on how to prepare emergency kits.

Create a Family Disaster Plan

Wildfire and other types of disasters can strike quickly and without warning. You can cope with disaster by preparing in advance and working together. Please see Fact Sheet: **General Disaster Preparation** for information on how to create a disaster plan.



- If you see a wildfire, call 9-1-1. Do not assume that someone else has already called. Describe the location, speak slowly and clearly, and answer any questions asked by the dispatcher.
- If you are warned that a wildfire is threatening your area, listen to a local station on your battery-operated radio for reports and evacuation information and keep a flashlight with you at all times. Follow the instructions of local officials.
- Check local air quality reports. Listen and watch for news or health warnings about smoke. Find out if your community provides reports about the U.S. Environmental Protection Agency's Air Quality Index (AQI). In addition, pay attention to public health messages about taking safety measures.
- Back your car into the garage or park it in an open space facing the direction of escape. Shut doors and roll up windows. Leave the key in the ignition and the car doors unlocked. Close garage windows and doors, but leave them unlocked. Disconnect automatic garage door openers so that doors can still be opened by hand if the power goes out. Close all garage doors.

- Confine pets to one room. Make plans to care for your pets in case you must evacuate. Please see Fact Sheet: **Protect Your Pets in a Disaster** for additional information about how to protect your pets.
- Place important documents, photo albums, and other valuables inside your car in case you must evacuate.
- Consult local visibility guides if they are available. Some communities have monitors that measure the amount of particles that are in the air.
- Keep indoor air as clean as possible if you are advised to stay indoors. Keep windows and doors closed. Run an air conditioner if you have one, but keep the fresh-air intake closed and the filter clean to prevent outdoor smoke from getting inside. If you do not have an air conditioner and it is too warm to stay inside with the windows closed, seek shelter in a designated evacuation center or away from the affected area.
- Avoid activities that increase indoor pollution. Burning candles, fireplaces, or gas stoves can increase indoor pollution. Vacuuming stirs up particles already inside your home, contributing to indoor pollution. Smoking also puts even more pollution into the air.
- Do not rely on dust masks for protection. Paper “comfort” or “dust” masks commonly found at hardware stores are designed to trap large particles, such as sawdust. These masks will not protect your lungs from smoke. An “N95” mask, properly worn, will offer some protection.
- Follow the advice of your doctor or other healthcare provider about medicines and about your respiratory management plan if you have asthma or another lung disease. Consider evacuating the area early if

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you are having trouble breathing. Call for further advice if your symptoms worsen.

- Wear protective clothing — sturdy shoes, cotton or woolen clothing, long pants, a long-sleeved shirt, gloves, and a handkerchief to protect your face.
- Take your Emergency Supplies Kit.
- Tell someone outside of the danger zone when you leave and where you are going.
- Choose a route away from fire hazards. Watch for changes in the speed and direction of fire and smoke. Avoid traveling through a smoke filled roadway at all costs, as poor visibility on the road can cause crashes, injuries, and even death. Follow designated evacuation routes—others may be blocked—and expect heavy traffic. Take essential items with you.
- Roll up windows and close air vents. Drive slowly with headlights on. Watch for other vehicles and pedestrians.
- If you have to stop, park away from the heaviest trees and brush. Turn headlights on and ignition off.
- If you are sure you have time, take steps to protect your home. Do not wait until the last minute to evacuate. Protect your life and lives of others.
- If advised to evacuate, do so immediately.

INSIDE

- Close outside attic, eaves and basement vents, windows, vents, doors, pet doors, blinds, or noncombustible window coverings and heavy drapes.

- Remove lightweight flammable drapes and curtains and place them in the center of your home.
- Close all shutters, blinds, or heavy non-combustible window coverings to reduce radiant heat.
- Close all doors inside the house to prevent draft but keep the doors unlocked. It may be necessary for firefighters to gain quick entry into your home to fight fire. Shut off all utilities if possible, including natural gas, propane, or fuel oil supplies at the source.
- Open fireplace damper. Close fireplace screens.
- Move flammable furniture into the center of the home away from windows and sliding glass doors.
- Turn on outside lights and leave a light on in each room to increase the visibility of your home in heavy smoke.

OUTSIDE

- Seal attic and ground vents with precut noncombustible coverings.
- Turn off propane tanks.
- Move combustible patio furniture away from the house or inside the garage.
- Connect the garden hose to outside taps.
- Fill any pools, hot tubs, garbage cans, tubs, or other large containers with water.
- Water with a hose or place lawn sprinklers on the roof and near above ground fuel tanks. Wetting the roof may help if it is shake-shingled.



- Wet or remove shrubs within 15 feet of the home.
- Gather fire tools such as a rake, axe, handsaw or chainsaw, bucket, and shovel.
- Place a ladder against the house in clear view on the side opposite the approaching fire for access to the roof.

SURVIVING A WILDFIRE

If You are Trapped in a Vehicle

- STAY IN YOUR VEHICLE. Although dangerous, you can survive the firestorm if you stay in your vehicle. It is much less dangerous than trying to run from a fire on foot.
- Park away from the heaviest trees and brush.
- Roll up windows and close air vents.
- Get on the floor and cover up with a blanket or coat.
- Stay in the vehicle until the main fire passes. Do not run!
- Air currents may rock the car. Some smoke and sparks may enter the vehicle. Temperature inside will increase.
- Metal gas tanks and containers rarely explode.
- Engine may not restart.

If You Are Trapped at Home

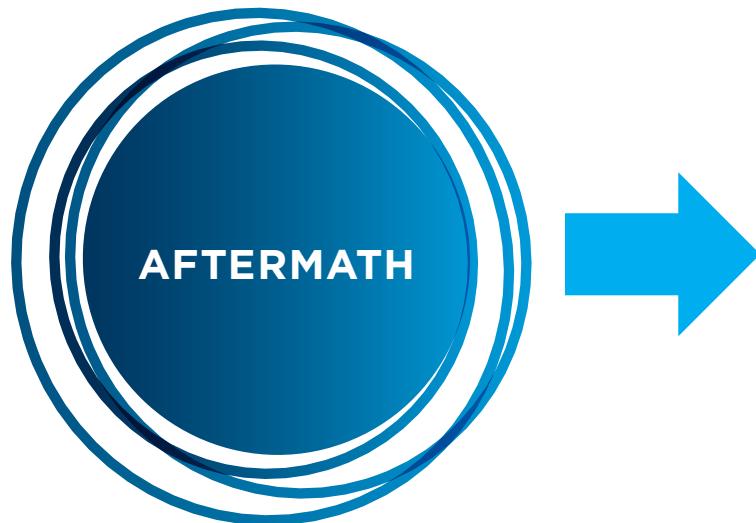
- If you do find yourself trapped by wildfire inside your home, stay inside and away from outside walls. Close

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doors, but leave them unlocked. Keep your entire family together and remain calm.

If Caught in the Open

- The best temporary shelter is in a sparse fuel area (i.e., a place that has very little debris). On a steep mountainside, the back side is safer. Avoid canyons, because they act like natural chimneys and accelerate the fire's rate. Also avoid saddles (ridges between two peaks).
- If a road is nearby, lie face down along the road or in the ditch on the uphill side. Cover yourself with anything that will shield you from the fire's heat.
- If hiking in the backcountry, seek a depression with sparse fuel. Clear fuel away from the area while the fire is approaching and then lie face down in the depression and cover yourself. Stay down until after the fire passes!



AFTER A WILDFIRE

The following are guidelines for different circumstances in the period following a fire

- Go to a designated public shelter if you have been told to evacuate or you feel it is unsafe to remain in your home. Text SHELTER + your ZIP code to 43362 (4FEMA) to find the nearest shelter in your area (e.g., shelter 12345).
- Wildfires can cause a variety of serious injuries including burns. If you are with burn victims, or are a burn victim yourself, you may need to call 9-1-1 or seek help immediately depending on the severity of the burn; cool and cover burns to reduce chance of further injury or infection.
- If you remained at home:
 - Check the roof immediately after the fire danger has passed. Put out any roof fires, sparks, or embers. Use caution if you must climb on the roof.
 - Check the attic for hidden burning sparks.
 - Check the yard for burning woodpiles, trees, fence posts, or other materials.

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- For several hours after the fire, maintain a “fire watch.” Re-check for smoke and sparks throughout the house and around the yard.
- If you have evacuated, do not enter your home until fire officials say it is safe.
- If a building inspector has placed a color-coded sign on the home, do not enter it until you get more information, advice, and instructions about what the sign means and whether it is safe to enter your home.
- Use caution when entering burned areas as hazards may still exist, including hot spots, which can flare up without warning.
- If you detect heat or smoke when entering a damaged building, leave immediately.
- If you have a safe or strong box, do not try to open it. It can hold intense heat for several hours. If the door is opened before the box has cooled, the contents could burst into flames.
- Avoid damaged or fallen power lines, poles, and downed wires.
- Watch for ash pits and mark them for safety—warn family and neighbors to keep clear of the pits also.
- Follow public health guidance on safe cleanup of fire ash and safe use of masks.
- Wet debris down to minimize breathing dust particles.
- Wear leather gloves and heavy soled shoes to protect hands and feet. Wear long pants and a shirt to protect your legs and arms.
- Cleaning products, paint, batteries, and damaged fuel containers need to be disposed of properly to avoid risk.
- Discard any food that has been exposed to heat, smoke, or soot.

- Do NOT use water that you think may be contaminated to wash dishes, brush teeth, prepare food, wash hands, make ice, or make baby formula. Please see Fact Sheet: **Safe Water After a Disaster**.
- Watch pets closely and keep them under your direct control. Hidden embers and hot spots could burn your pets' paws or hooves. For additional information on how to protect your pets during a disaster, please see Fact Sheet: **Protect Your Pets in an Emergency**.

Post-wildfire hazards

Following a fire, the burned areas often experience flooding, excessive soil erosion, and landslides, because the bare slopes cannot hold the soil as well as a vegetated slope would. Post-fire landslide hazards include fast-moving, highly destructive debris flows that can occur in the years immediately after wildfires in response to high intensity rainfall events, and those flows that are generated over longer periods accompanied by root decay and loss of soil strength. Post-fire landslides are particularly hazardous because they can occur with little warning, can exert great impulsive loads on objects in their paths, can strip vegetation, block drainage ways, damage structures and endanger human life. For additional information on landslides, please see the Landslides Section.

As you rebuild

- Obtain information from local authorities about buffer space requirements.
- Clear 30 feet of space around your home of vegetation.
- Store firewood at least 30 feet away (farther if possible) from your home.

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- Clear debris off the roof, out of the gutters and away from air conditioning units.
- Plant fire-resistant shrubs and trees. Hardwood trees, for example, are less flammable than pine, evergreen, eucalyptus or fir trees. Get advice from a local specialist about the type of trees to have planted, as well as how far apart they should be spaced.
- Equip chimneys and stovepipes with a spark arrester that meets the requirements of NFPA 211, a specific standard for chimney fire safety.
- Ask a professional to:
 - Select and install fire-resistant roofing, siding, and other building materials.
 - Install or develop an adequate outside water source such as a small pond, cistern, well, swimming pool, or hydrant.
 - Install freeze-proof exterior water outlets on at least two sides of the home and near other structures on the property. Install additional outlets at least 50 feet from the home.

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