

Fires, Wildland

Why talk about wildland fire?

More and more people are making their homes in woodland settings in or near forests, rural areas, or remote mountain sites. There, residents enjoy the beauty of the environment but face the very real danger of wildland fire. Wildland fires often begin unnoticed. They spread quickly, igniting brush, trees, and homes.

What are wildland fires?

There are three different classes of wildland fires. Surface fires are the most common type. They burn along the forest floor, killing or damaging young trees. Ground fires are usually started by lightning. They burn on or below the forest floor in the humus layer down to the mineral soil. Crown fires jump along the tops of trees and are spread rapidly by wind.

More than four out of every five wildland fires are started by people. Negligent human behavior, such as smoking in forested areas or improperly extinguishing campfires, is the cause of many wildland fires. Lightning is another cause.

How can I protect myself from wildland fire?

All people who live, work, or play in areas prone to wildland fire should carefully consider how to get out of the area quickly and safely in case of fire. In addition, residents in areas at risk for wildland fire should do everything possible to minimize their vulnerability. One of the most important ways to protect yourself and your property is to use fire-resistant materials outside and inside your home. You should also maintain a buffer zone around your home to reduce the odds that a wildland fire could reach your home.

What is the best source of information in the event of a wildland fire?

Local radio and television stations are the best sources of information about wildland fire in your area.

Prevent Wildland Fires

Small fires can quickly spread out of control. Always:

- Build fires for debris burning, campfires, etc. away from nearby trees or bushes. Embers and firebrands can float in the air and can start wildland fires where they fall.
- Have handy a way to extinguish the fire quickly and completely (water, sand, fire extinguisher).
- Stay with a fire. Never leave a fire—even a cigarette—burning unattended.

Be Prepared for Wildland Fire

For general preparedness, every household should create and practice a Family Disaster Plan and assemble and maintain a Disaster Supplies Kit. In addition, households at risk for wildland fire should take fire-specific precautions and plan and practice what to do in the event of a fire.

Protect Yourself

Learn about your area's wildland fire risk. Contact your local fire department, state foresters office, or other emergency response agencies for information on fire laws

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and wildland fire risk.

If you are at risk for wildland fire, you should:

- Talk with members of your household about wildland fires—how to help prevent them and what to do if one occurs.
- Make sure that fire vehicles can get to your home by clearly marking all driveway entrances and displaying your name and address. Make sure the driveway is wide enough to allow fire emergency vehicles easy access to the home with ample turnaround space. Keep the driveway in good condition.
- Post fire emergency telephone numbers by every phone in your home. In a wildland fire, every second counts.
- Plan and practice two ways out of your neighborhood. Your primary route may be blocked; know another way out just in case.
- Identify and maintain an adequate water source outside your home, such as a small pond, cistern, well, swimming pool, or hydrant. Keep 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 (15 meters) from the home. Firefighters may be able to use them.
- Keep handy household items that can be used as fire tools: a rake, ax, hand saw or chain saw, bucket, and shovel. You may need to fight small fires before emergency responders arrive. Having this equipment will make your efforts more effective.
- Develop a wildland fire-specific evacuation plan and coordinate it with your Family Disaster Plan.

Protect Your Property

If you live in an area at risk for wildland fire, you should:

- Design and landscape your home and outbuildings with wildland fire safety in mind. Obtain local building codes and weed-abatement ordinances for structures built near wooded areas. There may be restrictions on the types of materials or plants allowed in residential areas. Following local codes or recommendations will help reduce the risk of injury to you and damage to your property.
- Select building materials and plants that can help resist fire rather than fuel it. Use fire-resistant or noncombustible materials (tile, stucco, metal siding, brick, concrete block, or rock) on the roof and exterior structure of the dwelling. Treat wood or combustible materials used in roofs, siding, decking, or trim with fire retardant chemicals that have been listed by the Underwriter's Laboratory (UL) or other certification laboratories. Avoid using wooden shakes and shingles for a roof. Use only thick, tempered safety glass in large windows. Sliding glass doors are already required to be made of tempered safety glass.
- Have electrical lines installed underground if you live in an area where this is an option. There is a greater chance of fire from overhead lines that fall or are damaged, such as in an earthquake or storm.
- Create safety zones to separate your home and outbuildings, such as barns, from plants and vegetation. (Consult your local fire department for recommendations about the safety zones for your property.) Maintain the greatest distance possible between your home and materials that may burn in a

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wildland fire. Within this area, you can take steps to reduce potential exposure to flames and radiant heat. Stone walls can act as heat shields and deflect flames. Swimming pools and patios can help define safety zones.

- If your home sits on a steep slope, standard protective measures may not suffice. Fire moves quickly up steep slopes. A larger safety zone may be necessary. Contact your local fire department or state foresters office for additional information.
- Regularly clean roofs and gutters. Remove all dead limbs, needles, and debris that spread fire.
- 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.) This will reduce the chance of burning cinders escaping through the chimney, starting outdoor fires.
- Have a fire extinguisher ("A-B-C" rated) and get training from the fire department in how to use it. Different extinguishers operate in different ways. Unless you know how to use your extinguisher, you may not be able to use it effectively. There is no time to read directions during an emergency.
- Consider installing protective shutters or heavy fire-resistant drapes. The extreme heat created by the fire causes windows to break, permitting burning cinders and superheated air to enter and ignite the interior of the building. The right shutters or drapes can reduce the potential for these cinders to cause your home to burn.
- Keep a ladder handy that will reach the roof. You may need to get on the roof to remove combustible debris.
- Plant fire-resistant shrubs and trees in your safety zone and on the remainder of your property. Fire-resistant plants are less likely to ignite and spread fire closer to your home. For example, hardwood trees are more fire resistant than pine, evergreen, eucalyptus, or fir trees.
- Clear all combustible vegetation and remove wooden lawn furniture to reduce the fuel load. Rake away leaves. Remove leaves, rubbish, dead limbs, and twigs from under structures and dispose of them properly. Have a professional tree service create a 15-foot (5-meter) space between tree crowns, and remove limbs within 6 to 10 feet (2 to 3 meters) of the ground. This will help reduce the chance of fire spreading from tree to tree or from ground to tree.
- Remove dead branches from all trees. Dead branches are very combustible.
- Keep trees adjacent to buildings free of dead or dying wood and moss.
- Remove tree branches and shrubs within 15 feet (5 meters) of a stovepipe or chimney outlet.
- If you have horses or livestock, be sure to store hay and other burnable feed away from the building that houses the animals.
- Keep all tree and shrub limbs trimmed so they do not come in contact with electrical wires. Electrical wires can be easily damaged or knocked loose by swaying branches.
- Ask the power company to clear branches from power lines. High-voltage power lines can be very dangerous. If a line falls, it can cause injury or start a fire. Only authorized and trained professionals should work around power lines.
- Remove vines from the walls of your home. Even live vines can spread fire quickly.

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- Mow and water grass regularly. This will help reduce the fuel available for fire.
- Place propane tanks at least 30 feet (9 meters) from the home or other structures. Propane tanks can explode under certain conditions.
- Clear a 10-foot (3-meter) area around propane tanks and the barbecue. Place a metal screen over the grill. Use noncombustible screen material with mesh no coarser than one-quarter inch.
- Regularly dispose of newspapers and rubbish at an approved site. Follow local burning regulations. Regular disposal of combustible/flammable items will reduce the fuel available for fire.
- Place stove, fireplace, and grill ashes in a metal bucket, soak in water for two days, then bury the cold ashes in mineral soil. Fires can start quickly from hidden cinders or burnt materials that are still hot. Once they are burned, chunks of flammable items can ignite at lower temperatures. Bury ashes to avoid potential fires.
- Stack firewood at least 30 feet (9 meters) away and uphill from your home. Clear combustible material within 20 feet (6 meters) of the stack. Fire tends to travel uphill, so keep highly combustible firewood and other materials above our home.
- Use only wood-burning devices that are listed by UL or other certification laboratories.
- Box eaves to prevent sparks from entering the structure under the roof line.
- Place metal screens over openings to prevent collection of litter. Cover openings to windows, floors, roof, and attic with screen (not vinyl screen). Use at least quarter-inch screen beneath porches, decks, floors, and the home itself. Eighth- or sixteenth-inch mesh screen is better. Litter, such as leaves, branches, twigs, and loose papers, quickly increases the fuel available for a fire.
- Avoid open burning completely, especially during the fire season. Ash and cinders can float in the air, and they may be blown into areas with heavy fuel load and start wildland fires.
- Report hazardous conditions that could cause a wildland fire. Community responders may be able to eliminate or reduce conditions that could cause fire.

What to Do When Wildland Fire Threatens

If there are reports of wildland fires, you should:

- Listen regularly to local radio or television stations for updated emergency information. Follow the instructions of local officials. Local officials will be able to advise you of the safest escape route, which may be different than you expect. Wildland fires can change direction and speed suddenly. In addition to listening to radio and television reports, go outside to look at the fire from time to time. If you believe the fire is too close to your location, evacuate immediately. The fire may move too fast for officials to issue evacuation notifications.
- Back your car into the garage or park it in an open space facing the direction of escape. Shut the car doors and roll up the windows. Leave the key in the ignition. Close garage windows and doors. Remove all obstacles to a quick escape.
- Confine pets to one room. Make plans to care for your pets in case you must evacuate. Pets may try to run if they feel threatened by fire. Keeping them

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inside and in one room will allow you to find them quickly if you need to leave. If you think an evacuation may be advised, and if you have large, unusual, or numerous animals, start evacuating them out of harm's way as soon as you are aware of impending danger. If you are using a horse or other trailer to evacuate your animals, move early rather than wait until it may be too late to maneuver a trailer through slow traffic and thick smoke.

- Arrange temporary housing at a friend's or relative's home outside the threatened area. You will be more comfortable in someone's home than in a public shelter. Plus, many shelters do not allow pets.
- If you are sure you have time, take steps to reduce the chance of your home catching fire or lessen the amount of damage from a nearby fire:
 - Shut off gas at the meter only if advised to do so by local officials on the radio or television.
 - If you have a propane tank system, turn off the valves on the system, and leave the valves closed until the propane supplier inspects your system.
 - Open fireplace dampers. Close fireplace screens. Burning embers will not be "sucked down" into a home from the outside. Moreover, if a spark arrestor is used on the chimney to prevent embers from getting out, it will also prevent embers from getting in.
 - Close windows, vents, doors, blinds, or noncombustible window coverings, and heavy drapes. Remove lightweight drapes and curtains.
 - Move combustible furniture into the center of the home away from windows and sliding-glass doors.
 - Close all doors and windows inside your home to prevent draft.
 - Place valuables that will not be damaged by water in a pool or pond.
 - Place sprinklers up to 50 feet (15 meters) away from the structures to raise the moisture level of nearby vegetation.
 - Seal attic and ground vents with precut plywood or commercial seals.
 - Remove combustible items from around the home, lawn, and poolside furniture, umbrellas, tarp coverings, firewood.
 - Connect the garden hose to outside taps.
 - Gather fire tools (shovels, hoes, hoses). Note: In the unlikely event that you choose not to evacuate, make sure all fire tools are outside and easy to access, including hoses in the front and back yards. Be aware that water pressure will probably decrease because of the heavy demand for firefighting, or water may not be available at all because electric pumps have failed or water reservoirs are drained.

What to Do if You Must Evacuate

If advised to evacuate immediately, do so immediately. You may have only minutes to act. Save yourself and those with you.

If advised to evacuate as soon as possible, you should:

- Wear protective clothing—sturdy shoes, cotton or wool long pants and long-sleeved shirt, and gloves. Bring a handkerchief to protect your face. Hot embers or cinders can burn your skin if you come in contact with them. Smoke can

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make it difficult to breathe and damage breathing passages.

- Prepare your home and leave early. If you wait until the last minute, you place yourself at risk and also interfere with fire department response.
- Take your Disaster Supplies Kit in which you have placed prescription medications for household members, as well as copies of essential papers and identification items. Also, if time permits, load your vehicle with other essential items that could not be replaced if they were destroyed by fire.
- Take your pets and your pet disaster supplies with you.
- Lock your home. There may be others who evacuate after you or return before you. Secure your home as you normally would.
- Call the out-of-town contact you chose when creating your Family Disaster Plan and tell him or her what has happened and where you are going.
- Choose a route away from the fire. Watch for changes in the speed and direction of fire and smoke. Staying as far away as possible will provide you with the greatest safety. Continue to listen to a local radio or television station for evacuation information.
- If you are trapped, crouch in a pond, river, or pool. Do not put wet clothing or bandanas over your nose or mouth because moist air causes more damage to airways than dry air at the same temperature. If there is no body of water, look for shelter in a cleared area or among a bed of rocks. Lie flat and cover your body with soil. Breathe the air close to the ground to avoid scorching your lungs or inhaling smoke. You cannot outrun a fire. Wildland fires move very fast and create their own wind, helping them to move even faster and burn even hotter.

What to Do When You Are Allowed to Return After a Wildland Fire

When you return to your home after a wildland fire, you should:

- Obtain permission from officials before entering a burned wildland area.
- Use caution and exercise good judgment when re-entering a burned wildland area. Hazards may still exist, including hot spots, which can flare up without warning.
- Avoid damaged or fallen power poles or lines, and downed wires. Immediately report electrical damage to authorities. Electric wires may shock people or cause further fires. If you come across dangerous wires, if possible, remain on the scene to warn others of the hazard until a repair crew arrives.
- Be careful around burned trees and power poles. They may have lost stability because of fire damage.
- Watch for ash pits and mark them for safety. Ash pits are holes full of hot ashes created by burned trees and stumps. You can be seriously burned by falling into an ash pit or landing on one with your hands or feet. Warn your family and neighbors to keep clear of the pits.
- Watch animals closely.
 - Keep all your animals under your direct control. Hidden embers and hot spots could burn your pets' paws or hooves.
 - Pets may become disoriented, particularly because fire often affects scent markers that normally allow them to find their homes.
 - Your pets may be able to escape from your home or through a broken fence.
 - In addition, the behavior of pets may change dramatically after a fire,

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becoming aggressive or defensive, so be aware of their well-being and take measures to protect them from hazards, including displaced wild animals, and to ensure the safety of other people and animals.

- If there is no power, check to make sure the main breaker is on. Fires may cause breakers to trip. If the breakers are on and power is still not present, contact the utility company.
- Take precautions while cleaning your property. You may be exposed to potential health risks from hazardous materials.
 - Keep children away from these hazardous sites.
 - Debris should be wetted down to minimize health impacts from breathing dust particles.
 - Use a two-strap dust particulate mask with nose clip and coveralls for protection.
 - Wear leather gloves and heavy-soled shoes to protect hands and feet from sharp objects while removing debris.
 - Wear rubber gloves when working with outhouse remnants, plumbing fixtures, and sewer piping. They can contain high levels of bacteria.
 - Hazardous materials such as kitchen and bathroom cleaning products, paint, batteries, contaminated fuel, and damaged fuel containers need to be properly handled to avoid risk. Check with local authorities for hazardous disposal assistance.
- If you turned off the valves on a propane tank system, contact the propane supplier, and leave the valves closed until the supplier inspects your system. Tanks, brass and copper fittings, and lines may have been damaged by the heat and be unsafe. If fire burned the tank, the pressure relief valve probably opened and released the contents.
- If you have a heating oil tank system, contact a heating oil supplier for an inspection of your system before using it. The tank may have shifted or fallen from the stand and fuel lines may have kinked or weakened. Heat from the fire may have caused the tank to warp or bulge. Nonvented tanks are more likely to bulge or show signs of stress. The fire may have loosened or damaged fittings and filters.
- Visually check the stability of trees. Any tree that has been weakened by fire may be a hazard. Winds are normally responsible for toppling weakened trees. The wind patterns in your area may have changed as a result of the loss of adjacent tree cover.
 - Look for burns on the tree trunk. If the bark on the trunk has been burned off or scorched by very high temperatures completely around the circumference, the tree will not survive. If fire has burned deep into the trunk, the tree should be considered unstable.
 - Look for burned roots by probing the ground with a rod around the base of the tree and several feet away from the base. Roots are generally six to eight inches (15 to 20 centimeters) below the surface. If the roots have been burned, the tree could be toppled by wind.
 - A scorched tree is one that has lost part or all of its leaves or needles. Healthy deciduous trees are resilient and may produce new branches and leaves as well as sprouts at the base of the tree. Evergreen trees may survive when partially scorched. An evergreen tree that has been

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damaged by fire is subject to bark beetle attack. Ask for professional assistance from the state foresters office concerning measures for protecting evergreens from bark beetle attack.

- Discard food that has been exposed to heat, smoke, or soot. The high temperatures of fire and its by-products can make food unsafe.
- If you are in doubt about the safety of your water, contact local public health officials. Wells at undamaged homes should be safe, unless affected by a fuel spill. If you use water from a public well, have a water sample collected and tested before consuming it. Water may have been contaminated with bacteria due to a loss of water pressure in the plumbing.
- Stay out of a canyon below a burned hill or mountain if there is even a chance of rain. Such canyons are dangerous if it has rained heavily recently, if it is currently raining in the canyon, or if it is raining or could rain in the hills or mountains above the canyon. Risks for mudslides and debris flows are high in such burned areas for three to five years after a wildland fire.



