

Wildfires: Interesting Facts and F.A.Q.

- Lightning strikes the Earth over 100,000 times a day. Of these, 10-20% cause a fire.
- Man-made causes such as arson or plain carelessness (like smoking in forested areas or improperly extinguishing campfires) by individuals is the biggest cause of wildfires in the U.S.
- More than four out of every five wildfires are caused by people.
- An average of 1.2 million acres of U.S. woodland burn every year.
- A large wildfire, or conflagration, is often capable of modifying the local weather conditions or producing "its own weather."
- Lodgepole pines and their closely related jack pines have cones that release their seeds only when they are opened by fire.
- Naturally occurring fires, as well as controlled burns, clear out underbrush and help prevent even greater wildfires.
- Many animals in the food chain benefit when patches of forest are transformed by wildfires into clearings.
- Forest fires move faster uphill than downhill! The steeper the slope, the faster the fire travels. If you live on a hill, you might want to leave your house if a wildfire is near.

Q. Why is wildfire smoke bad for me?

Smoke is a mixture of gases and fine particles (particulate) released when things burn. In addition to burning your eyes, these fine particles and gases can be inhaled deep into your lungs. This makes it harder to breathe and may worsen other chronic health conditions such as asthma or heart disease.

Fortunately, most people who are exposed to smoke will not have lasting health problems. How much and how long you are exposed to the smoke, as well as your age and health status, helps determine whether or not you will experience smoke-related problems.

If you are experiencing serious medical problems for any reason, seek medical treatment immediately.

Q. What chemicals are in smoke from wildfires?

Wildfire smoke contains carbon monoxide, a colorless, odorless and toxic gas. Firefighters working near the fire are at greatest risk for high doses of carbon monoxide. Areas even a few hundred yards downwind of the fire where there are high particulate smoke levels typically don't have high levels of carbon monoxide. Signs of high carbon monoxide levels in the blood include headaches, dizziness, nausea and decreased mental functioning.

Wildfire smoke contains other chemicals, many of which cause irritation to eyes, noses and throats. Find more detailed information on chemicals found in smoke in this publication from the Washington State Department of Ecology.

Q. What other natural disasters happen with wildfires?

The aftermath of a wildfire can be as disastrous, if not more so, than the fire. A particularly destructive fire burns away plants and trees that prevent erosion. If heavy rains occur after such a fire, landslides, ash floes, and flash floods can occur. This can result in property damage outside the immediate fire area, and can affect the water quality of streams, rivers and lakes.

Q. What can be done to reduce wildfires and/or damage?

Several methods, including so-called prescribed burning and thinning of trees, are being used in California and elsewhere to remove the buildup of vegetation that could become kindling for wildfires.

Keeley says we can't prevent wildfires and so should instead "adapt our lifestyle to them." He added, "What these fires tell us is that we need to recognize on these landscapes we're never going to get rid of fire. We cannot eliminate these fires."

He suggests urban planning can help to reduce the spread and damage caused by wildfires. For instance, some lawn vegetation such as palm trees and eucalyptus make for efficient wildfire fuel, as these plants hold on to their dead biomass longer than other plants.

Other measures: Some major wildfires have been started by downed power lines. Keeley suggests burying the lines underground. He added that small roadside barriers could reduce the spread of wildfires, which often get their start along roadsides.

Q. At what temperatures do forest fires burn?

An average surface fire on the forest floor might have flames reaching 1 meter in height and can reach temperatures of 800°C (1,472° F) or more. Under extreme conditions a fire can give off 10,000 kilowatts or more per meter of fire front. This would mean flame heights of 50 meters or more and flame temperatures exceeding 1200°C (2,192° F).

Q. What is a "prescribed fire"?

These are sometimes called prescribed burns, or controlled burns, but the term that most land management agencies use is "prescribed fire". It is the process of treating land by using carefully and skillfully applied fire to burn some of the vegetation. When applied correctly by professionals, it is only done after writing a prescribed fire plan that addresses the specific characteristics of the tract of land being treated. It will include a "prescription" that requires that many different weather, environmental, and vegetation factors be within carefully defined parameters. The plan will also specify how the fire will be applied, by whom, and what fire control people and equipment must be on scene before the first match is lit. The reasons for using prescribed fire can be many, but they can often include: to replicate natural conditions, restore fire to the landscape, reduce unnaturally high accumulations of vegetation due to fire exclusion, reduce the fire hazard around structures or communities, enhance the habitat of animals, and control exotic species. The smoke from a prescribed fire can be a nuisance, but it is much less than would be created if the same area burned as an unplanned and uncontrolled wildfire. Fire is a natural part of most ecosystems. It is not a question of IF the land will burn, but WHEN and under what conditions...controlled, or uncontrolled.

One thing that can be confusing is that the media usually uses the term “controlled burn”, which for them can be anything from someone burning trash in their back yard to a federal agency conducting a 5,000-acre prescribed fire that has been planned for four years.

Q. How can I obtain certification so that I can use prescribed fire on my own land?

Check with your state forestry or wildland fire agency and ask if they have a program for land owners to use prescribed fire. For example, Texas has a law, HB 2599, that guarantees landowners the right to burn on their own property, then sets up a prescribed burn manager certification system administered by the Texas Department of Agriculture under the direction of the Prescribed Burning Board. For a fire department employee to become qualified as a prescribed fire burn boss requires many years of experience and training. There are numerous prerequisite positions and courses that are required. As they move up from one position to the next, the firefighter must document satisfactory performance on a fire or prescribed fire in each position. It can take 10 to 20 years of full time employment as a firefighter to move up from being a firefighter to a prescribed fire burn boss.

Keep in mind that the use of fire as a tool requires a great deal of knowledge and experience, and it is as much an art as a science. Many things can go wrong that can have catastrophic consequences. Anyone setting fire to the landscape, a private landowner or a government employee, should have liability insurance.

Q. How do I keep my home from burning in a wildfire?

Briefly, your home needs to be “fire safe”. That is, the flammable vegetation within 100 feet of the structures must be reduced to the point where fire can not easily spread from the natural vegetation to your home. And the structures must be of fire-resistant materials and design. Firewise.org has much more information.

Q. What types of airplanes and helicopters are used to put out fires?

Well, first, aircraft don't put out fires. The best they can do is to slow down a fire to allow firefighters on the ground to get in close and actually put out the fire by applying water from hoses or to physically cut the vegetation away at the perimeter of the fire with hand tools so the fire runs out of fuel to burn.

Q. What is defensible space? And how do I create a defensible space?

Defensible space is an area at least 30 feet of lean, clean and green space surrounding your home. This space gives firefighters room to fight fires. Make your yard firewise by pruning shrubs and tree branches within 15 feet of your chimney or stovepipe. Remove dead tree branches that extend over the roof. Make your yard clean by raking leaves and removing dead tree limbs and twigs. Stack firewood at least 100 feet away from your home. Make your yard green by removing flammable vegetation and replacing it with fire-resistant plants.