

Focus on Safety

by Dr. Martin E. Alexander, RPF

Surviving a Wildland Fire Entrapment or Burnover

Would you know what to do if you were caught in a forest or grass fire? With an average of 8,600 wildfires in Canada annually, the danger of being entrapped or burned over by a wildfire is a real threat for people living, working, or visiting in rural areas and wildlands.

There are four main survival options if you ever become trapped by a wildfire:

- retreat from the fire and reach a safe haven,
- burn out a safety area,
- hunker in place, or
- pass through the fire edge into the burned-out area.

In considering these options, bear in mind that synthetic clothing (including undergarments) can readily melt and ignite.

A person's initial reaction when faced with being entrapped or overrun by a wildland fire is to run, which is one of the available survival options - retreat from the fire and reach a safe haven. A safe area is an area with light or no fuels, such as a rocky surface, marsh, or recently burnt area. This option only works if the distance between the fire and safety area is short, the fire is advancing slowly, and it is easy to reach the safe area (i.e., there are no obstacles that would impede foot travel).

Fire travels more quickly than most people realize and can reach rates of 200 metres a minute (12 km/h) in forests, and nearly twice this rate in grasslands. Even the fittest person cannot outrun a fire for long.

If there isn't a safe area close by, another option is to burn out a safety area. Carrying wind-resistant matches is a good safety precaution when visiting rural or wildland areas. This option only works well in a grassy area and when there is sufficient time to burn out a safety area.

Burning away light fuels, such as grass, will provide a safe area for surviving being overrun by a wildfire. However, this option does not work well in forested locations because of the generally heavier fuel conditions, which in turn lead to prolonged smouldering combustion.

When there is no way to reach a safe area or create your own, another option is to hunker in place. This involves trying to find an area that has little or no fuel - the bigger the better. It is important to lie completely flat, with your nose to the ground while the fire is burning over and around you. Lying flat will minimize body exposure to radiant heat.



Photo by D. Mortimer
If you are caught in the open and about to be entrapped or burned over by a wildfire you may have no choice but to "hunker in place".



Radiant heat is the "invisible heat" emitted from the flames of a fire. It will usually kill you long before flames directly reach you.

When a fire passes over and around you, heating of body tissues from thermal radiation can be unbearable. Staying calm and not getting up until the fire has substantially dissipated is critical. During the burnover, remember the following:

- Protect yourself from radiant heat at all costs
- Protect your airways from heat and minimize smoke exposure
- Try to stay as calm as possible

Although one will likely receive serious burns, many people have survived using this technique even under extremely arduous conditions. The alternative is almost certain death. People commonly use their hands to protect parts of the body from radiant heat - especially the face, neck, and ears. Thus, wearing leather gloves will decrease the severity of the burns suffered by the hands and in turn lessen the tendency to get up and aimlessly run about.

Survivors of entrapments and burnovers have commonly concentrated on thinking about their family in order to get through the ordeal.

The fourth option to escape an entrapment or burnover by a wildland fire is to pass through the fire edge into the burned-out area. Generally this technique should not be attempted if the flames are more than about 1.5 metres in height or depth. While running through the flame front of a fire is considered dangerous, people have survived by picking their spots and avoiding areas of uniform flame development.

The survival options as outlined here are not presented in any particular order. Circumstances may dictate that you try more than one or all of them. Wildland fires are precarious phenomena and each situation is different. Use the best option that will, ultimately, get you out alive. Don't ignore the obvious - safety could be nearby.

These wildland fire survival options are explored more fully in a chapter entitled "Wildland Fires: Dangers and Survival", that appears in *Wilderness Medicine*, a textbook for medical emergency responders published this spring by Mosby, Inc.

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