

Where to take refuge in your home during a bushfire

Written by Douglas Brown, PhD candidate (approved), University of Sydney



Fire threatening a house in Pelican Bay in 2006. If you need to shelter from a fire in your house, know where your exits are and be aware of surrounding vegetation. [thinboyfatter/Flickr](#) , [CC BY-SA](#)

When you live in a bushfire-prone area you can't ignore the danger. Most individuals and families address this necessity by preparing a [bushfire survival plan](#) . The best way to [survive a bushfire](#) is not to be there when it arrives.

For most Australian fire agencies the “ [leave early](#) ” policy has largely replaced the previous “stay and defend or leave early” one. This reflects an emphasis on preserving human life during a bushfire event – an emphasis that has strengthened since the 2009 Black Saturday bushfires.

Read more: [How to prepare your home for a bushfire – and when to leave](#)

Even when planning to leave early, unexpected events can occur. Not being able to find a child or family pet may delay departure until it's no longer safe to travel. Taking refuge in your home then becomes a last resort, a worst-case scenario. But this contingency is worth considering as part of your bushfire survival plan.

If you do need to take refuge inside your home during a bushfire, which parts are likely to be the safest? As part of my PhD research, I asked 252 residents living in bushfire-prone areas which parts of their houses they would shelter in during a bushfire, which parts they would avoid, and why. I then analysed the features of these locations against the known places [where people died in their home during bushfires in Australia from 1901 to 2011](#)

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Determining the safer places to shelter is further complicated as all houses are not the same. There are many different types, with large variations in design, construction materials, location and surrounding vegetation. It is therefore not possible to give absolute answers on where people should take shelter in their homes during a bushfire, but some general guidelines can be given.

Where are the safer spaces to shelter?

Upstairs is generally a more dangerous space to seek shelter during a bushfire. Upstairs levels are more difficult to escape from. Often they have large windows and sliding glass doors which are designed to capture views, but due to radiant heat and strong winds can crack and implode. Upper levels are often constructed of lightweight materials that are more flammable and vulnerable to direct flame contact from burning trees.

The ground floor is generally a safer space to shelter. The ground level usually has more external doors from which the occupant can escape. On a sloping block, however, the easiest level from which to exit may be the first floor. The ground level often has smaller windows (except those leading to entertainment areas). From the ground floor it is easier to get to the driveway and closer to an external water source such as a water tank.

People often suggest the bathroom as a good place to shelter during a bushfire. However, the bathroom can also be dangerous. During a bushfire, mains water is often cut or the pressure is reduced to a trickle. Despite having tiled walls, non-combustible fittings and a water supply, bathrooms like other rooms are vulnerable to the collapse of a burning ceiling when embers have ignited in the roof cavity.

Most bathrooms do not have an external door that residents can use to exit the house. In a bathroom it can be difficult to see the progress of a fire. And as bathrooms are small enclosed spaces they may be more vulnerable to carbon monoxide poisoning.

Read more: [Low flammability plants could help our homes survive bushfires](#)

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My advice is to look at all the external ground floor doors (while remembering that glass doors can be dangerous because of their vulnerability to radiant heat), and determine which of them provide access to adjoining outside paved, gravel, concrete or other non-combustible areas. You should also see if there is a small window from which you can observe the progress of the bushfire, and if there is a sink close by to store water. Where possible consider installing a fire alarm that has a carbon monoxide sensor with audible and visual alerts.

When you have identified the most suitable place in the house to actively shelter during a bushfire, follow the bushfire preparation activities provided by [fire authorities](#). Some of these will include looking out of a window to follow the progress of the fire and being aware of current bushfire updates on the radio and via mobile phone. There is no such thing as passive sheltering.

Being inside your home as the fire passes offers more protection than being outside. But it should be seen as a last resort, with leaving early the preferred action. Fire agencies work hard to inform residents of days when bushfires are likely, and to provide updates on fires that do break out. Residents in bushfire-prone areas should take these warnings and updates seriously and leave their properties when advised to do so, especially when catastrophic fires are expected.

The advice given in this article is general and may not suit every circumstance.

Douglas Brown is the Principal of Bushfire Architecture a research consultancy which provides design advice to building professionals with clients in bushfire-prone areas. He also works as a casual academic at Western Sydney University. He was the recipient of a PhD scholarship from Bushfire CRC.

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