

BUSHFIRE BEHAVIOUR

Understanding how bushfire behaves and destroys houses is important when planning, designing and selecting suitable plants for a garden. There are three major factors that influence bushfire behaviour: topography, weather conditions and vegetation.

TOPOGRAPHY (OR SLOPE)

Fire burns faster uphill. As the slope increases so does the speed of the fire and its intensity.

Flames and radiant heat preheat the vegetation ahead of the fire. This dries it out, making it easier to burn.

WEATHER

Hot, dry and windy days provide ideal conditions for a bushfire. In summer, these are common weather conditions that increase the flammability of vegetation.

Low humidity and high temperatures, which are fuelled by hot winds, dry out vegetation, allowing it to readily ignite.

VEGETATION (FUEL)

Plants are the primary source of fuel for a bushfire.

The amount of fuel available to a bushfire and where the fuel is located can directly impact on house survival. Understanding how vegetation influences fire behaviour is important when planning a garden.

Within a property, vegetation management and the placement of other flammable objects around the house can determine the amount of fuel available to a bushfire.

The amount, type (flammability) and arrangement of vegetation affects how easily a bushfire will spread throughout a garden.

Fine fuels such as leaf litter readily dry out, ignite and can be carried as embers. Shrubs, vines and other elevated fuel can act as ladder fuels, allowing fire to climb into the canopies of trees, significantly increasing bushfire intensity.

Breaking up the continuity of the vegetation can limit the spread of fire within the garden.

Remember there are no 'fire proof' plants. All plants can burn under the right conditions – typically in extreme fire weather following extended drought.

See Section 4 for more information about how to minimise bushfire risk through garden design.



Leaf litter and dead plant material on and around houses and gardens can be cleared to reduce the risk of them catching fire or becoming burning embers.

HOW BUSHFIRE DESTROYS HOUSES

House survival is influenced by many interacting factors. The four main ways houses are destroyed during a bushfire are:

- ember attack
- radiant heat
- direct flame contact
- wind.

Ember attack is the most common way houses catch fire during a bushfire. Ember attack occurs when small burning twigs, leaves and bark are carried by the wind, landing in and around houses and their gardens.

If they land on or near flammable materials, such as leaf litter and dead plant matter, they can develop into spot fires. Embers can also ignite a house if they land on or near vulnerable parts of the building.

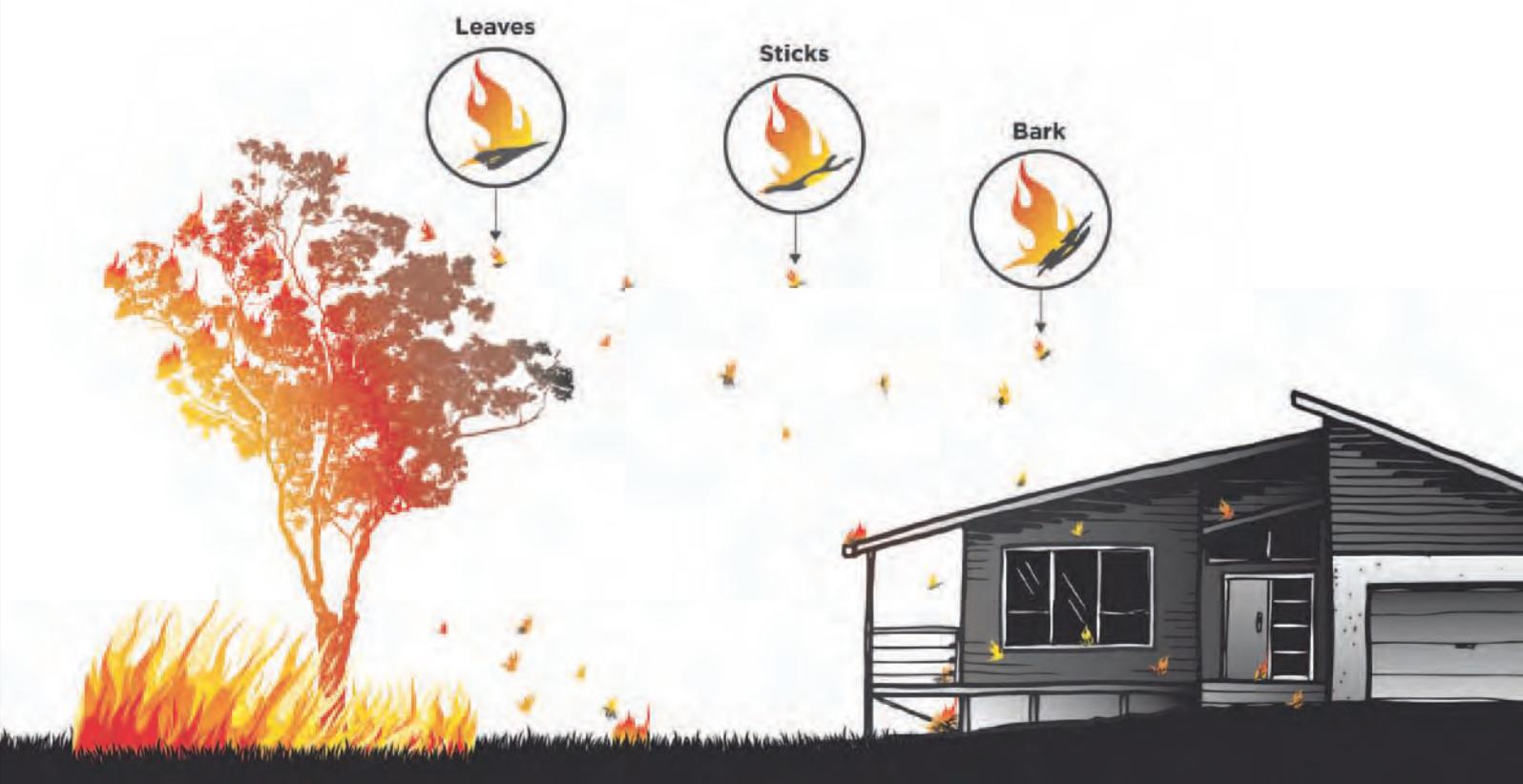
Radiant heat is the heat created from combustion during a bushfire. It can:

- ignite surfaces without direct flame contact or ember attack. This is due to the heat being received from the fire
- dry out vegetation ahead of the bushfire so that it burns more readily
- crack and break windows, allowing embers to enter a building
- distort and melt materials such as plastic.

Flame contact occurs when flames touch a house. Any burning vegetation can directly ignite a house if it is planted too close.

Wind can be very destructive to houses in a bushfire because it:

- carries embers
- can cause trees to fall onto buildings
- can break windows
- can loosen roof tiles
- can blow roofs off houses under severe conditions.



Ember attack