Planting in Bushfire Areas

Please note that the information contained in this brochure is only a guide. Remember that all plants will burn when subjected to sufficient heat.

The main aim when landscaping for bushfire is to keep the area around the house and any other structures free of plants that can easily catch fire and then ignite the buildings.

When selected and located correctly, plants can help protect your home by:

- Reflecting and filtering embers
- Providing shelter from radiant heat
- Reducing wind speed
- Reducing the spread of fire
- Reducing the chance of direct flame contact on the house.

However, poorly located vegetation that burns readily can increase the fire risk to your home by:

- Providing a continual fuel path to the house to allow direct flame contact
- Dropping leaf litter which can readily ignite and can become embers
- Dropping tree limbs or branches onto the house
- Producing radiant heat that may ignite the house or cause windows to break
- Increasing the intensity of the fire by acting as a ladder from the ground into tree canopies.

Therefore when gardening in bushfire areas, careful attention must be paid to vegetation placement, continuity, maintenance and species selection.

Create defendable space

One of the most important aspects of vegetation placement is to create an area of “defendable space” around the house and other structures. This area should be designed and managed to reduce the effects of flame contact and radiant heat on the house, by breaking up continuity and reducing the amount of fuel available to a bushfire.

Some recommendations for creating defendable space include:

- Don't allow trees to overhang the roof, or touch walls or other parts of a building. Trees should be located a distance equal to 1.5 times their mature height from the house
- Don't locate flammable objects (eg plants, mulches and fences) within 10 m of vulnerable parts of the building such as windows, decks and eaves
- Do not place plants greater than 10 cm in height at maturity in front of windows or other glass features
- Don’t use organic mulch. Alternative mulches include gravel, scoria, pebbles or recycled bricks
- Incorporate materials such as brick, earth, stone, concrete and galvanised iron, as these can act as radiant heat barriers
- Place driveways and paths against the house to create separation between vegetation and the house, using materials such as clay, concrete, gravel and pebbles
- Use non-combustible materials for fencing and retaining walls

- If possible, position pools, tennis courts, etc between the house and the line of fire threat
- Remove flammable objects such as caravans, outdoor furniture, barbeques, gas bottles and wood piles from an area at least 10 m around the house, and keep them well separated from other flammable objects, including plants
- Use non-combustible, movable containers and pots that can be relocated in the summer.

Break up vegetation continuity

When a plant catches fire it can pre-heat and ignite the vegetation around it through radiant heat or direct flame contact. Grouping plants and garden beds with areas of low fuel between them can help avoid this by breaking up fuel continuity.

Some recommendations for reducing fuel continuity include:

- Space trees so there is a canopy separation of 2 m at maturity
- Space shrubs so they are in clumps of less than 10 sq m, with clumps separated from each other by at least 10 m
- Don't plant shrubs under trees, as they can act as a ladder and carry fire into the canopy
- Don't allow shrubs and trees to form a continuous canopy. Break them up with areas of low fuel, such as gravel paths, non-flammable mulch or mown grass.

Undertake regular garden maintenance

Regular maintenance of your garden is imperative to minimise its bushfire risk. Some recommendations for garden maintenance include:

- Remove tree branches below 2 m from ground level, to increase vertical separation between fuel at ground level and the canopy
- Regularly remove all leaf litter, bark, branches and other debris from under trees around the house
- Keep grass mown - no more than 5 cm height
- Keep areas under fences, fence posts, gates and trees raked and cleared of fuel.

"Don't allow shrubs and trees to form a continuous canopy – break them up with areas of low fuel"

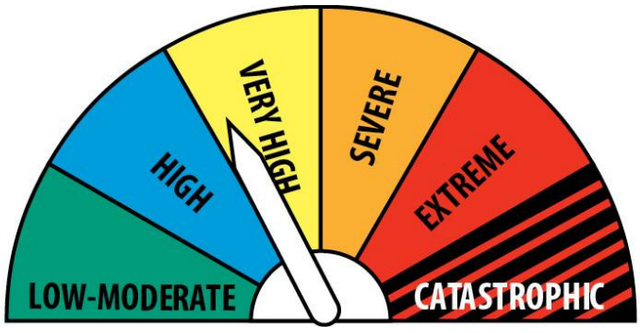
Plants for bushfire areas

Plant flammability relates to the time taken for a plant to ignite, how readily it burns when the ignition source is removed, how much material there is to burn, and how long it takes for all available fuel to be consumed.

The flammability of a plant in a bushfire can vary depending on factors such as the plant's age, health and climatic variations.

Foliage moisture content is a critical factor in plant flammability, as it influences how readily a plant will ignite. Plants with high foliage moisture content won't burn until sufficient moisture in its foliage has been removed, while plants with low moisture content will ignite more rapidly and continue to burn when the ignition source is removed.

Remember that plants in the path of an oncoming bushfire will dry out as a result of the radiant heat and wind generated by the fire, so even fully hydrated plants will eventually dry out and burn if they are exposed to bushfire heat for long enough.



The Bush Fire Danger Ratings give you an indication of the possible consequences of a fire, if one was to start

Some characteristics to consider when selecting plants for gardens in bushfire areas include:

- Choose plants with open and loose branching, and leaves that are thinly spread. Plants with closely packed leaves and branches have more fuel available, so are usually more flammable

- Choose plants with branches at least 2 m above the ground, as those with continuous foliage from the ground to the canopy can act as ladder fuels (however pruning can be used to increase separation)

- Choose plants with a coarse texture, ie plants where it is easy to distinguish each branch or leaf from a distance of 3 m. These plants have a lower surface area to volume ratio, making them less flammable than plants with a fine texture

- Choose plants that are less dense. A dense plant is difficult to place your hand into, and is not easy to see through. These plants have a higher fuel load readily available, so are often more flammable

- Choose plants with wide, flat and thick leaves, as these leaves have a lower surface area to volume ratio, meaning they tend to take longer to dry out than small, thin and narrow leaves

- Choose plants with leaves that are soft and fleshy, as these usually have a higher moisture content, so take longer to dry out and therefore longer to catch fire

- Choose plants with smooth bark that is attached tightly to the trunk. Bark that is loose, stringy or fibrous can ignite easily, and break off to create burning embers, or act as a ladder fuel to carry fire into the canopy of the tree, for example stringybark eucalypts, some paperbarks and manna gums

- Avoid plants with high amounts of resins, waxes or oils, such as many Eucalyptus, Melaleuca and Leptospermum species, as these increase a plant's flammability

- Avoid plants that are structured such that they retain dead leaves, twigs, bark and branches, or where these accumulate on the ground or in shrubs. For example, dead pine needles are caught readily in other plants, increasing flammability as the leaves dry out and ignite readily.

The smooth bark of trees such as this Smooth-Barked Apple (Angophora costata) is less likely to ignite than loose, stringy bark

References & further reading

Australian Native Plant Society, Australian plants for fire-prone areas - www.anpsa.org.au

Habitat Network, Habitat in your garden in a bush fire prone area - www.habitatnetwork.org

NSW Rural Fire Service, Planning for bushfire protection - www.rfs.nsw.gov.au

VIC Country Fire Authority, Landscaping for bushfire: Garden design and plant selection - www.cfa.vic.gov.au

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A selection of local plants which are generally thought to be more suitable in bushfire areas

Trees

Silver Wattle	*(Acacia dealbata)*
Green Wattle	*(Acacia decurrens)*
Black Wattle	*(Acacia mearnsii)*
Blackwood	*(Acacia melanoxylon)*
Weeping Myall	*(Acacia pendula)*
Drooping She Oak	*(Allocasuarina verticillata)*
Smooth-Barked Apple	*(Angophora costata)*
Kurrajong	*(Brachychiton populneus)*
River She Oak	*(Casuarina cunninghamiana)*
Swamp She Oak	*(Casuarina glauca)*
Spotted Gum	*(Corymbia maculata)*
White Sallee	*(Eucalyptus pauciflora)*

Shrubs

Gold Dust Wattle	*(Acacia acinacea)*
Box Leaf Wattle	*(Acacia buxifolia)*
Wyalong Wattle	*(Acacia cardiophylla)*
Knife Leaf Wattle	*(Acacia cultriformis)*
Deane's Wattle	*(Acacia deanei)*
Western Silver Wattle	*(Acacia decora)*
Hickory Wattle	*(Acacia implexa)*
Flinders Range Wattle	*(Acacia iteaphylla)*
Buffalo Wattle	*(Acacia kettlewelliae)*
Sandhill Wattle	*(Acacia ligulata)*
Umbrella Wattle	*(Acacia oswaldii)*
Ovens Wattle	*(Acacia pravissima)*
Cooba	*(Acacia salicina)*
River Cooba	*(Acacia stenophylla)*
Hairy Wattle	*(Acacia vestita)*
Old Man Saltbush	*(Atriplex nummularia)*
River Saltbush	*(Atriplex rhagodioides)*

Shrubs (continued)

Silver Banksia	*(Banksia marginata)*
Sweet Bursaria	*(Bursaria spinosa)*
Smooth Flax Lily	*(Dianella longifolia)*
Spreading Flax Lily	*(Dianella revoluta)*
Hop Bush	*(Dodonaea spp)*
Ruby Saltbush	*(Enchylaena tomentosa)*
Winter Apple	*(Eremophila debile)*
Grevillea	*(Grevillea spp)*
Small Leaf Bluebush	*(Maireana microphylla)*
Fragrant Saltbush	*(Rhagodia parabolica)*
Hedge Saltbush	*(Rhagodia spinescens)*
Senna	*(Senna spp)*
Kangaroo Apple	*(Solanum aviculare)*

Groundcovers

Berry Saltbush	*(Atriplex semibaccata)*
Bladder Saltbush	*(Atriplex vesicaria)*
Daisy	*(Brachyscome spp)*
Frosted Goosefoot	*(Chenopodium desertorum)*
Wild Fuchsia	*(Correa spp)*
Gold Emu Bush	*(Eremophila kalbarri)*
Spotted Emu Bush	*(Eremophila maculata)*
Purple Coral Pea	*(Hardenbergia violacea)*
Mat Rush	*(Lomandra spp)*
Short Leaf Bluebush	*(Maireana brevifolia)*
Common Bluebush	*(Maireana decalvans)*
Heathy Bluebush	*(Maireana oppositifolia)*
Black Bluebush	*(Maireana pyramidata)*
Western Boobialla	*(Myoporum montanum)*
Creeping Boobialla	*(Myoporum parvifolium)*