

fire retardant garden plants for the urban fringe and rural areas

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Why Plant Flammability is Important

During a bushfire, the type, amount and arrangement of vegetation is critically important for the survival of your house. The fuel for bushfires is the main danger factor that people can control. Hazard reduction activities such as clearing and fuel reduction burning, aim to lower the vegetation hazard to a safe level. Because some plants have a higher resistance to burning than others, we can use low flammability plants for added protection in addition to normal maintenance and hazard reduction activities.

There are two basic factors to be considered in determining a plant's flammability: the first is how readily its parts burn and the second is how the form of the whole of the growing plant influences the burning of the whole plant. "Flammability" then is, or should be, the outcome of these two factors. There are many lists of plants in books but unfortunately most should be treated with suspicion because they haven't been tested in an acceptable way. The trouble with a lot of the books is they don't tell us which aspects of flammability are included and how they are combined.

Testing the flammability of individual pieces of plant is usually done by taking a section of leaf and subjecting it to a flame and measuring how quickly it burns. If you are wondering about the flammability of a few different plants, you can get a good idea using an LPG torch on pruned branches. Plants will of course burn differently once they are dead and dry and so it is usual to test both green and dead samples. Plants with broad fleshy leaves are better than those with fine hard leaves (sclerophyll). Those with significant amounts of volatile oils, like the eucalypt family which includes eucalypts and tea-trees, should be avoided.

The influence of plant shape is a lot more subjective: low growing plants and ground covers are better than shrubs; plants with dense foliage are better than those with open airy crowns; plants which don't retain dead material are better than those which hold up lots of fuel; plants with smooth bark are better than those with ribbon and rough bark.

The Role of Replacement Planting

Fire retardant plants can absorb more of the heat of the approaching bushfire without burning than more flammable plants. They can trap

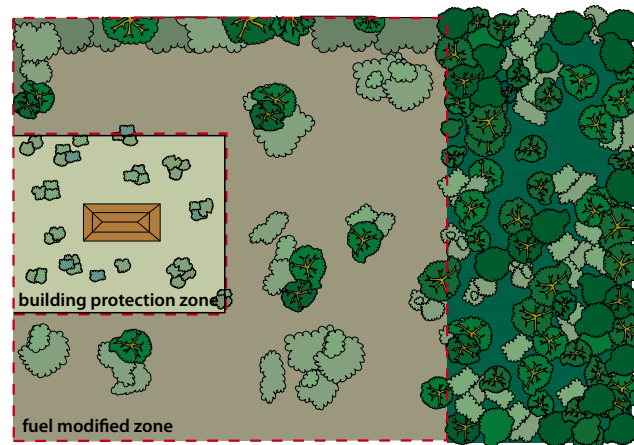
burning embers and sparks and reduce wind speeds near your house if correctly positioned and maintained. Fire resistant ground covers can be used to slow the travel of a fire through the litter layer and fire resistant shrubs can be used to separate the litter layer from the trees above.

If the low flammability plants sound like ornamentals and vegetables and the highly flammable ones sound like dry bush and scrub: then you've got the idea. Obviously, on dry sites it will be very difficult to grow wet forest plants so consider planting useful non-natives such as vegetables and fruit trees (most of which have very low flammabilities) or some of the less flammable ornamentals as part of your fire proofing strategy.

Planting these species close to the structure and planting the natives further away also reduces the risk of these exotics escaping into the bush. Tasmania Fire Service recommends that around every house in bushfire prone areas there should be a zone where vegetation and other fuels are minimal (the **Building Protection Zone**) and that this zone should be surrounded by a further zone where fuels are maintained at a low level (the **Fuel Modified Zone**). The widths of these zones vary with slope from 10 to 50 metres, and

descriptions, widths and other information can be found in the Tasmania Fire Service publication "*Guidelines for Development in Bushfire Prone Areas of Tasmania*" (2005). When choosing fire retardant plants, other attributes should be taken into consideration such as their aesthetic appeal, growth rate, resistance to drought and frost, and possibly their ability to regenerate following fire.

If fire retardant plants are to be grown, a firm commitment must be made to regularly maintain them or they may become a fire hazard. This includes sufficient watering, so a high leaf moisture content is maintained, the removal of dead material and regular pruning of lower branches. Water availability is likely to be a problem in the drier months when the threat of fire is greatest. When choosing fire retardant species their water requirements need to be considered. There is no point growing plants as a protective measure against fire if they are going to die when they are most needed. Indeed, all dead plant material will be a fire hazard.



It is also necessary to realise that establishing a fire retardant garden will take time, money and lots of hard work. Many plants do not reach maturity for up to 15 years and therefore will not provide effective fire protection for sometime. In comparison, other plants have shorter life spans and may continually need to be replaced.

Environmental Weeds

All gardeners should be aware that some plants are not wanted in the bush even if they are valued in the garden. Unfortunately there are many ornamental plants which can really take off when they get into the bush. Some do so well they choke out the natives, like blackberries, or become a fire hazard, like gorse.

Many environmental weeds were brought to Tasmania as ornamental or food plants and have found conditions to their liking. Most are not particularly affected by pests and diseases and so have a head start over the local plants. Predicting whether a plant will become an environmental weed is not easy so it's good practice to use native plants in gardens close to bushland. **Known environmental weeds in Tasmania that have moderate or higher flammability should be doubly avoided and are shown on the plant flammability list.**

For further information consult your local DPI/PWE or Council weed management officers. A useful pamphlet is "*Garden Plants are Going Bush... and Becoming Environmental Weeds*" published by the Society for Growing Australian Native Plants.

Protecting Your Home

Replacement planting with low flammability plants is not sufficient protection on its own. People living on the urban fringe and in rural areas need to be aware of the risk of bushfire and prepare themselves and their homes for when the fire comes.



The Tasmania Fire Service DVD and booklet "*Bushfire - Prepare to Survive*" provides good advice for householders on the urban fringe and rural areas who want to prepare themselves and their homes for bushfires. The DVD, booklet and other fire safety advice is available from any Tasmania Fire Service office.



For further information
Freecall 1800 000 699
www.fire.tas.gov.au



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Introduction

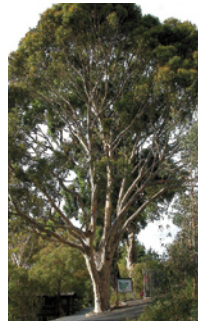
All vegetation will burn in a bushfire and pose a hazard to people and their homes. However, not all vegetation has the same flammability and there is great potential for people living in bushfire prone areas to reduce their fire hazard by changing the plants in their gardens.

Flammability Groups

In the following list E denotes an exotic plant, TN a plant native to Tasmania, AN a plant native to mainland Australia and X a known environmental weed.

High Flammability

These plants have been shown to be highly flammable and should not be planted or allowed to remain inside your house's Building Protection Zone. They should also be avoided in the Fuel Modified Zone. Move these plants away from your house and replace them with less flammable plants.



Corymbia maculata
- Spotted Gum

<i>Acacia dealbata</i>	TN	Silver Wattle
<i>Acacia stricta</i>	TN	Hop Wattle
<i>Acacia verticillata</i>	TN	Prickly Moses
<i>Acer palmatum</i>	E	Japanese Maple
<i>Acmena smithii</i>	AN	Lilly Pilly
<i>Aesculus hippocastanum</i>	E	Common Horse Chestnut
<i>Allocasuarina cunninghamiana</i>	AN	River Sheoak
<i>Angophora floribunda</i>	E	Rough-barked Apple
<i>Bambusa vulgaris</i>	E	Bamboo
<i>Banksia integrifolia</i>	AN	Coast Banksia
<i>Banksia marginata</i>	TN	Honeysuckle
<i>Betula pendula</i>	E	Silver Birch
<i>Buddleia davidii</i>	E	Butterfly Bush
<i>Callistemon citrinus</i>	AN	Common Red Bottlebrush
<i>Callitris rhomboidea</i>	TN	Oyster Bay Pine
<i>Cassia javanica</i>	E	Pink Cassia
<i>Chamaecyparis lawsoniana</i>	E	Lawson Cypress
<i>Cinnamomum camphora</i>	E	Camphor Laurel
<i>Citrus limon</i>	E	Lemon
<i>Cortaderia argentea</i>	E X	Pampas Grass
<i>Corymbia maculata</i>	AN	Spotted Gum
<i>Cupressus funebris</i>	E	Mourning Cypress

<i>Dodonaea viscosa</i>	TN	Native Hop
<i>Elaeocarpus reticulatus</i>	TN	Blueberry Ash
<i>Eucalyptus amygdalina</i>	TN	Black Peppermint
<i>Eucalyptus globulus</i>	TN	Blue Gum
<i>Eucalyptus obliqua</i>	TN	Brown Stringybark
<i>Eucalyptus paniculata</i>	AN	Grey Ironbark
<i>Eucalyptus pulchella</i>	TN	White Peppermint
<i>Eucalyptus viminalis</i>	TN	White Gum
<i>Exocarpos cupressiformis</i>	TN	Native Cherry
<i>Flindersia australis</i>	AN	Crow's Ash
<i>Gahnia grandis</i>	TN	Cutting Grass
<i>Gleditsia tricanthos</i>	E	Honey Locust
<i>Grevillea x Poorinda</i>	AN	Poorinda Cultivars of Grevilleas
<i>Grevillea robusta</i>	AN	Silky Oak
<i>Grevillea rosmarinifolia</i>	AN	Rosemary Grevillea
<i>Ilex aquifolium</i>	E X	Holly
<i>Lepidosperma laterale</i>	AN	Sword Rush
<i>Leptospermum lanigerum</i>	TN	Woolley Teatree
<i>Leptospermum scoparium</i>	TN	Manuka, Teatree
<i>Lomandra longifolia</i>	TN	Saggs
<i>Melaleuca alternifolia</i>	AN	Paperbark
<i>Monstera deliciosa</i>	E	Monstera
<i>Nandina domestica</i>	E	Sacred Bamboo
<i>Nicotiana glauca</i>	AN	Tobacco Bush
<i>Pinus elliptii</i>	E	Slash or Elliott's Pine
<i>Pinus patula</i>	E	Mexican or Weeping Pine
<i>Pittosporum undulatum</i>	AN X	Sweet Pittosporum
<i>Platanus x acerifolia</i>	E	Plane Tree
<i>Poa sp.</i>	AN	Poa Grass
<i>Populus sp.</i>	E	Poplar
<i>Quercus robur</i>	E	English oak
<i>Spiraea catoniensis</i>	E	May
<i>Tasmania lanceolata</i>	TN	Native Pepper
<i>Ulex europaeus</i>	E X	Gorse
<i>Viburnum opulus</i>	E	Guelder Rose

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Moderate Flammability

These plants should be avoided in the Building Protection Zone. They should not be allowed to dominate your garden and should be well maintained, being especially careful to remove dead material before it accumulates.



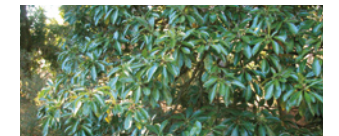
Acacia melanoxyylon - Blackwood

<i>Acacia baileyana</i>	AN X	Cootamundra Wattle
<i>Acacia decurrens</i>	AN	Green Wattle
<i>Acacia mearnsii</i>	TN	Black Wattle
<i>Acacia melanoxyylon</i>	TN	Blackwood
<i>Acacia podalyrifolia</i>	AN	Mt Morgan Wattle
<i>Actinidia chinensis</i>	E	Kiwi Fruit
<i>Araucaria heterophylla</i>	AN	Norfolk Island Pine
<i>Atherosperma moschatum</i>	TN	Sassafras
<i>Bedfordia salicina</i>	TN	Blanket Bush
<i>Beyeria viscosa</i>	TN	Pinkwood
<i>Brachychiton acerifolius</i>	AN	Illawarra Flame Tree
<i>Brachychiton discolor</i>	AN	Lacebark
<i>Brachychiton rupestris</i>	AN	Bottle Tree
<i>Calodendrum capense</i>	E	Cape Chestnut
<i>Canna indica</i>	E	Canna Lily
<i>Cassia floribunda</i>	E	Smooth Cassia
<i>Ceanothus papillosus</i>	E	Pacific Blue
<i>Chaenomeles japonica</i>	E	Flowering Quince
<i>Chrysanthemum indicum</i>	E	Chrysanthemum
<i>Citrus nobilis</i>	E	Mandarin
<i>Coleonema pulchrum</i>	E	Diosma
<i>Cotoneaster glaucophyllus</i>	E X	Cotoneaster
<i>Cucurbita maxima</i>	E	Pumpkin
<i>Cymbopogon citratus</i>	E	Lemon Grass
<i>Cyphomandra betacea</i>	E	Tamarillo
<i>Delonix regia</i>	E	Poinciana
<i>Dicksonia antarctica</i>	TN	Man Fern
<i>Diospyros sp.</i>	E	Persimmon
<i>Eriobotrya japonica</i>	E	Loquat
<i>Escallonia macrantha</i>	E	Escallonia
<i>Euryops pectinatus</i>	E	Yellow Daisy Bush
<i>Genista monspessulana</i>	E X	Montpellier Broom
<i>Koeleruteria paniculata</i>	E	Golden Rain Tree
<i>Lantana camara</i>	E	Lantana
<i>Ligustrum lucidum</i>	E	Large-leaved Privet
<i>Liquidambar styraciflua</i>	E	Liquidambar

<i>Magnolia grandiflora</i>	E	Magnolia
<i>Morus sp.</i>	E	Mulberry
<i>Myoporum insulare</i>	AN	Boobyalla
<i>Nerium oleander</i>	E	Oleander
<i>Olearia argophylla</i>	TN	Musk
<i>Photinia glabra var. rubens</i>	E	Chinese Fire Bush or Red-leafed Photinia
<i>Pittosporum bicolor</i>	TN	Cheesewood
<i>Pteridium esculentum</i>	TN	Bracken Fern
<i>Rhododendron sp.</i>	E	Rhododendron
<i>Rosa sp.</i>	E X	Roses, Briars
<i>Salix babylonica</i>	E	Weeping Willow
<i>Salix chilensis</i>	E	Pencil Willow
<i>Sorbus aucuparia</i>	E	Rowan
<i>Spathodea campanulata</i>	E	African Tulip Tree
<i>Syringa vulgaris</i>	E	Lilac
<i>Weigela florida</i>	E	Fairy Trumpets
<i>Zieria arborescens</i>	TN	Stinkwood

Low Flammability

These plants are acceptable in the Building Protection Zone and will be valuable replacements for more flammable plants.



Hymenosporum flavum - Native Frangipanni

<i>Artemisia sp.</i>	E	Wormwood or Angels Hair
<i>Camellia sp.</i>	E	Camellias
<i>Capsicum annum var. fasciculatum</i>	E	Chilli
<i>Diplarrena moraea</i>	TN	White Flag Iris
<i>Gazania hybrida</i>	E	Treasure Flower
<i>Hebe speciosa</i>	E	Veronica
<i>Hemerocallis aurantiaca</i>	E	Day Lilly
<i>Hydrangea macrophylla</i>	E	Hydrangea
<i>Hymenocallis littoralis</i>	E	Spider Lily or Spider Flower
<i>Hymenosporum flavum</i>	AN	Native Frangipanni
<i>Lampranthus aurantiacus</i>	E	Pigface or Iceplant
<i>Lavendula angustifolia</i>	E	English Lavender
<i>Passiflora herbertiana</i>	AN	Native Passionfruit
<i>Pelargonium peltatum</i>	E	Geranium
<i>Pomaderris apetala</i>	TN	Dogwood
<i>Prunus sp.</i>	E	Plum
<i>Solanum melongera</i>	E	Eggplant