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. These 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 different plant type 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 useful to test both green and dead samples. Plants with broad leaves and 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 the 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, 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 garden to see if they work.

Planting these species close to the structure and planting the natives further away also reduces the risk of these exotic species 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 considered 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.

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 chock 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 DPIPWE 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.
fire retardant garden plants

for the urban fringe and rural areas

Introduction

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

Flammability Groups

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.

Acacia dealbata
Acacia saligna
Acacia verticillata
Acacia pycnantha
Acmena smithii
Acacia hexagonantha
 Allocasuarina curvula
Argyrodendron forsteri
Bambusa vulgaris
Banksia integrifolia
Banksia marginata
Betula pendula
Buddleja davidi
Callistemon citrinus
Callistemon rhodanthus
Cassia javanica
Chamaecyparis lawsoniana
Cinnamomum camphora
Citrus limon
Clerodendrum splendens
Corymbia maculata
Cupressus funebris

Dodonaea viscosa
Elaeagnus reticulata
Eucalyptus amygdalina
Eucalyptus globulus
Eucalyptus obliqua
Eucalyptus pellita
Eucalyptus punctata
Eucalyptus urophylla
Exocarpos cupreus
Foeniculum vulgare

Flammability

High Flammability

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

Acacia salicina
Acacia dealbata
Agapanthus praecox
Albizia julibrissin
Alocasia macrorrhiza
Amaranthus retroflexus
Aniba rosa
Anigozanthos manglesii
Araucaria heterophylla
Artocarpus altilis
Atherosperma moschatum

Moderate Flammability

These plants should be avoided in the Fire Modification Zone. They are acceptable in the Building Protection Zone, however, not all vegetation has the same flammability and there is great potential for people living in bushfire prone areas to reduce the fire risk by changing the plants in their gardens.

Acacia baileyana
Acacia pycnantha
Actinidia chinensis
Actinidia delicosa
Agapanthus praecox
Albizia julibrissin
Anigozanthos manglesii
Atherosperma moschatum

Low Flammability

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

Aristotelia cassiniana
Aristotelia sericea