FIREWISE

Shelterbelt Design

Strategically located and designed Fire Wise shelterbelts can mitigate the local danger of fire

Radiant heat is the heat you feel when standing near a fire. It is the biggest risk to life in bushfires.

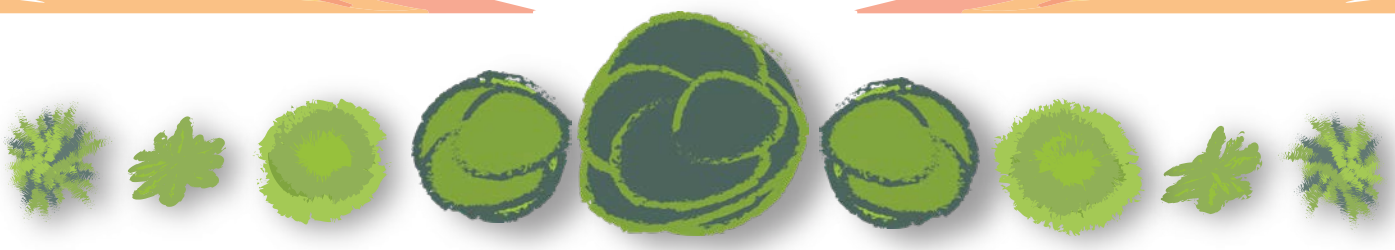
The best protection from radiant heat is distance and/or a fire-resistant physical barrier. Fire Wise trees and shrubs can be used as a barrier to radiant heat.

Less wind and more shade.

Fire Wise trees and shrubs can slow local wind speeds and provide shade. This helps to retain moisture in nearby soil and adjoioning vegetation. Less wind and more moisture reduces the chance of fire ignition and can slow rate of fire spread.

Ember attack is the most common way buildings catch alight.

As well as slowing local winds, Fire Wise trees and shrubs can deflect and trap embers that might otherwise ignite a building. Fire Wise ground covers such as succulents and salt bushes can be used (better than most grasses) to retain moisture, trap embers and slow down the rate of fire spread.



'Correctly selected and located trees can reduce wind speed, absorb radiant heat, and filter embers'.

CFA, Landscaping for Bushfire www.cfa.vic.gov.au

Bass Coast Landcare Network

South Gippsland Landcare Network

Australian Government

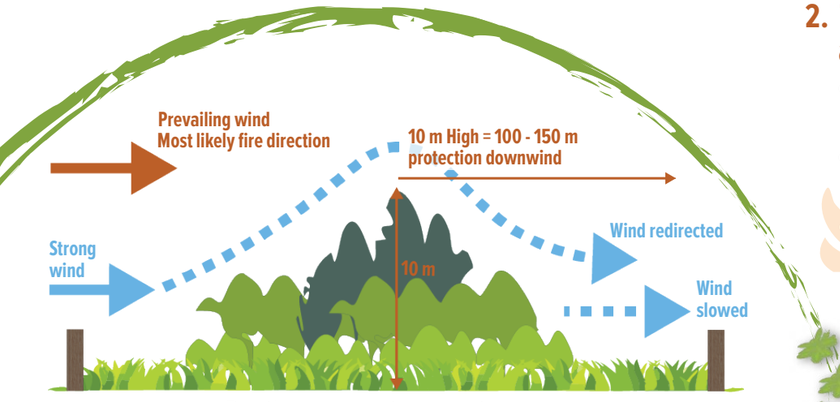
Foundation for National Parks & Wildlife

Important: The list of plants in this guide was endorsed by experts in ecology and fire management. No plant is completely fireproof and can burn given extreme heat, particularly during extreme or catastrophic fire events. Always follow official advice and leave early if instructed.

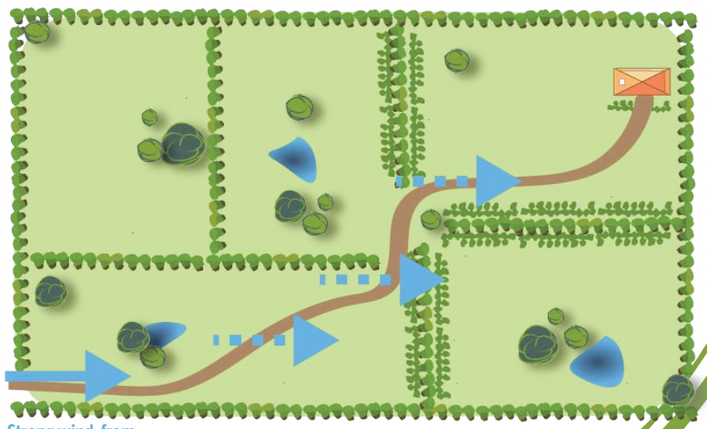
FIREWISE Shelterbelt Design Essentials

1. Increased tree height increases area of downwind protection

- Plant tallest tree species in the centre of shelterbelt
- Shelter belts can reduce downwind wind speeds by up to 10 -15 times their height (eg 10 m high trees reduce wind speeds 100 to 150 metres downwind)



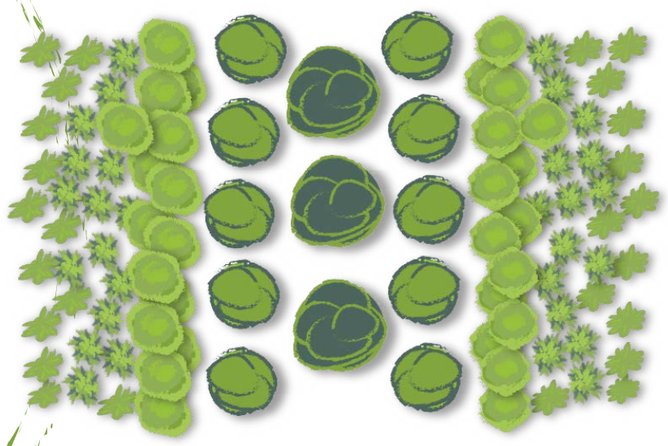
Planting succulents and salt bushes on the side of likely fire can slow progression



Avoid long straight roads. They can funnel wind and fire through a property.

2. The wider the shelter belt leads to less wind tunnelling and wind damage over time.

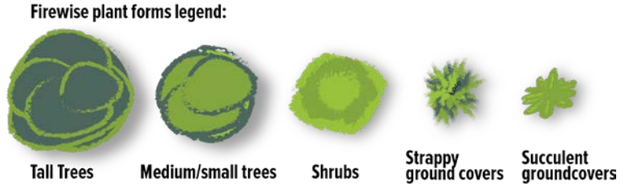
- Plant a minimum of 3 to 5 staggered rows with large trees spaced at 3 to 4 metres apart.
- Smaller plants can be spaced closer together as required and several rows planted on either side of the large tree rows.
- Spacing may need to change depending on plant species, proximity to assets and individual circumstances.



Spacing General Guide:

- Tall Trees minimum 5 t apart
- Medium/small trees 2-3 m apart
- Shrubs 2-2.5 m apart

Firewise plant forms legend:



3. Increased diversity provides multiple benefits

- Plant multiple species and forms for multiple benefits such as shade and shelter, habitat and food for wildlife.

4. Longer and linked shelterbelts reduces wind turbulence.

- Shelterbelts should be at least 10 times as long as they are tall when mature.
- Shorter shelter belts have reduced effect on wind speed and direction. A 100 m minimum is recommended, dependant on property size.

5. Planting at the correct plant density is essential

- 20% plant density is too sparse and will not reduce wind speed and alter direction.
- 40-60% is the recommended plant density that will provide appropriate downwind protection.
- 80% plant density is not recommended as it can cause excessive wind turbulence and shelterbelt damage.

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Fire-wise native plants of Bass Coast and South Gippsland

Tall Trees

Acacia dealbata
Silver wattle 2-30 m

Acacia mearnsii
Black wattle 5-15 m

Acacia melanoxylon
Blackwood 6-30 m

Medium/ small trees

Allocasuarina verticillata
Drooping sheoak 4-10 m

Banksia integrifolia
Coastal banksia 5-15m

Banksia marginata
Silver banksia 1-12 m

Bursaria spinosa
Sweet bursaria 1-8 m

Lomatia fraseri
Tree lomatia 2-8 m

Myoporum insulare
Common boobialla 1-6 m

Myrsine howittiana
Muttonwood 3-10 m

Olearia argophylla
Musk daisy dush 3-10 m

Pomaderis aspera
Hazel pomaderris 3-8 m

Shrubs

Atriplex species
Salt bushes

Correa alba
White correa

Goodenia ovata
Hop goodenia

Indigofera australis
Austral indigo

Olearia lirata
Snowy daisy bush

Rhagodia candolleana
Sea berry salt bush

Solanum aviculare
Kangaroo apple

Viminaria juncea
Golden spray

Succulent groundcovers

Carprobrotus rossi
Karkalla

Dichondra repens
Kidney weed

Disphyma crassifolium
Rounded noon flower

Tetragonia implexicoma
Bower spinach

Viola hedearaceae
Native violet

Strappy ground covers

Bulbine bulbosa
Bulbine lily

Carex appressa
Tall sedge

Dianella tasmanica
Tasman flax-lily

Dianella revoluta
Black anther flax-lily

Ficinia nodosa
Nobby Club rush

Juncus pallidus
Pale rush

Juncus procerus
Giant rush

Lomandra longifolia
Spiny mat rush

Pattersonia sp.
Purple flag

FIREWISE

Shelterbelt Design

Agricultural Benefits

- Reduced windspeeds and wind chill
- Boosts pasture production for livestock
- Reduce mortality of calves and young lambs
- Promote beneficial insects and reduce populations of pest invertebrates like the red-legged earth mite
- Helps to provide ecosystem services like pollination and natural pest control

Biodiversity benefits

- Can help connect vegetation, providing food, habitat and safe passage for native wildlife
- Provides a different kind of habitat compared to old growth and natural regrowth woodland
- A farm with both shelterbelts and remnant woodland is likely to support more species

Refer to the following Australian National University website for further information.
www.sustainablefarms.org.au

Native Plant Nurseries

- BCLN Nursery - Bass - 0459 464 979
- Barb Martin Bushbank - Phillip Island - 0421 923 914
- Melaleuca Native Plant Nursery - Inverloch - 0487 335 606
- Grand Ridge Nursery - Grand Ridge - 0419 006 176
- Strezeleckii Plant Farm - Allambee South - 0428387 344
- Smoulders Nursery - Fish creek - 0438 609 285
- Wonthaggi Seed Bank - Wonthaggi - 0402 210 020

This guide is accompanied by a multimedia resource with further information at: www.basscoastlandcare.org.au/firewise.html

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Bass Coast Landcare Network

South Gippsland Landcare Network

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Important: This information has been designed to assist you in your planning but it is only a guide. Bass Coast Landcare Network and South Gippsland Landcare Network do not guarantee that this publication is without flaw and recognises that the information contained may not be applicable in all situations. Therefore we do not accept any liability.