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# Bush on your farm



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# About this kit

This kit is the first in a series designed to help you manage remnant native bush on your property.

The topics covered in this kit include:

Benefits of native bush
Tasmanian bush types
Condition of your bush
Planning your bush management
Monitoring your bush management.

This kit includes a key that will help you decide what type of bush you have on your property. It does not provide guidelines for managing your bush. General guidelines on the principles of managing native bush can be found in **Kit 2 Managing Your Bush**. Guidelines for managing the specific bush types are found in **Kits 6-9**. The key that helps you work out what bush type you have will direct you to the relevant kit.

When you have read this kit you will need to read **Kit 2 Managing Your Bush** and the kit for your particular bush type. You may also need to refer to parts of the following kits for specific information on weeds, revegetation and threatened species:

- **Kit 3 Weeds in Your Bush**
- **Kit 4 Revegetating Your Farm**
- **Kit 5 Threatened Plant Species in Your Bush.**



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# Benefits of native bush

The benefits of maintaining and improving the health of native bush are numerous but they are not always obvious.

## Biodiversity

Biodiversity is the variety of life, including genetic variation, species, and assemblages of species called communities. Over the last 200 years most of the natural vegetation of the drier parts of Tasmania has been converted to improved pastures, semi-natural pastures, crop land, roads, dams, gardens and buildings. This has meant that the types of natural vegetation that occurred on the flattest and most fertile land have been largely destroyed. Many species that were once common are now found in a few small populations. If we are to maintain the variety of life on our small planet we must look after those species and communities that have been most depleted. In Tasmania most of these occur on private land.

## Personal well-being

Most owners of remnant bush appreciate its natural beauty. They feel personal satisfaction knowing that they are helping maintain native species and preserving some of the original landscape settled by their forebears.

## Heritage value

Rural landscapes of rolling pastures interspersed with remnant native bush are part of our national heritage and are as much a part of the Australian identity as icons like Tasmania's wilderness. With changing land use, land degradation and rural tree decline we are losing that landscape.

## Cost reductions

Farmers who understand and appropriately use native bush for grazing reap a number of benefits even though native pasture supports fewer sheep per hectare than improved pasture. It does not require expensive inputs such as fertiliser or insecticides, and it is associated with fewer animal health problems. It also requires less maintenance than improved pastures and expensive works like erosion rehabilitation are generally unnecessary.

## Additional income

Many rural properties supplement their income by offering farm or colonial accommodation. The people who use this type of accommodation are often nature lovers who appreciate the opportunity for bush walks. Properties with remnant bush are more likely to attract visitors than those that are purely farming operations.

## Real estate values

Land containing native bush is aesthetically attractive which increases its real estate value.

## Bush products

With the high cost of firewood, fence posts and construction timber any wood that can be collected from the bush on a property will help save money. Wood gathered from remnants can be sold for firewood, timber or pulp. However, some trees with hollows should be left standing to provide nesting sites for native birds. Florists sell the flowers and foliage of many of the plants found in bush remnants. The sale of seed for horticulture and forestry can provide good financial returns to the landholder. There is also a growing market for native grass seed.

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## **Increased productivity**

Livestock and crop production can be increased when remnant vegetation acts as a windbreak, providing shade and preventing soil moisture loss. Remnant vegetation reduces cold and heat stress in livestock, increases wool production and stock live weight, and reduces birth mortality.

## **Grazing value**

Native bush is valuable for grazing as sheep grazed on it produce highly-valued fine and superfine wool. It can be used to help prevent scouring and worm infestations in sheep. Native grasses are more drought resistant than introduced pasture grasses so rough grazing country can provide valuable drought relief. In native pastures the cover of perennial grasses is often higher than that in improved pastures. The main native perennial grass, kangaroo grass, grows best in summer when introduced grasses are dying back.

## **Soil conservation**

Remnant bush offers soil conservation benefits. The higher ground cover in native and semi-native vegetation results in less loss of topsoil than when the ground is ploughed. Native forest or woodland keeps the watertable low which helps to prevent dryland salting of crop land and improved pastures.

## **Natural protection against pests and diseases**

Trees in larger patches of remnant bush can better withstand dieback, insect attack and disease. The soils of native pastures contain insects that break down soils and litter, and eat pests. Native pastures are less susceptible to damage from pasture grubs than improved pastures. Native vegetation may also provide future biological controls for pest species such as the corby grub. In Victoria a parasitic species found on prickly box is thought to help control cockchafer beetles. Bush along streams acts as a filter for contaminants and may reduce the transport of diseases into watercourses.

## **Retention of plant nutrients**

Large amounts of nutrients are held in the leaf and other litter on the ground. Deep-rooted trees can use nutrients leached from the surface soil layers.

## **Genetic resources**

Some of the relatives of important agricultural crops are found in the Tasmanian bush. These plants may provide valuable genetic material in the future. For example, soya beans are the world's main protein crop. Fourteen of the 16 soya bean species grow only in Australia and three of these grow in Tasmania. The Australian species do not suffer from rust so they may provide important genetic material for drought or frost resistant varieties. Many of our rare herbs such as the paper daisy are widely used in horticulture. Other native plants such as the native pepper and the yam daisy may prove to be profitable crops in view of the diversification of Australian cuisine. Their survival in the wild will ensure that their genetic resources are available for future development.

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# Tasmanian bush types

The keys in this section will help you identify the bush type on your property. They will also direct you to the kit that discusses your particular bush type and its management.

## Keys to bush types

To identify your bush type go to a typical patch of the bush and work through the steps outlined below.

### Key 1: A broad description of your bush

Which of the following sentences best describes your bush? When you have decided which one fits best go to the relevant key and follow the directions given there.

BROAD DESCRIPTION	GO TO	PAGE
Bush along watercourses or around wetlands.	<b>Key 2</b>	5
Bush that is treeless.	<b>Key 3</b>	5
Bush with a tree layer made up of eucalypt trees.	<b>Key 4</b>	8
Bush with a tree layer made up of trees that are not eucalypts.	<b>Key 5</b>	11



## Key 2: Bush along watercourses or around wetlands

Bush found along rivers, creeks, streams and wetlands is known as riparian bush regardless of the type of vegetation present.

The management of riparian bush depends on the bush type present. Therefore, you will need two kits in order to find out how you can manage your riparian bush. The first is **Kit 6 Riparian Bush** which discusses riparian bush and its management in general. The second kit will depend on the bush type present. To determine which bush type makes up your riparian bush go through the last three sentences in Key 1 again and find the one that best describes your riparian bush. Then go to the relevant key and follow the instructions given there.

SUMMARY	BUSH TYPE	DESCRIPTION
<p>Bush found along watercourses or around wetlands</p> 	<b>Riparian bush</b>	<p>Riparian bush is vegetation found along streams, creeks, rivers and wetlands. A variety of bush types make up riparian vegetation, including rainforest, wet forest, dry forest and scrub. Riparian bush may have a grassy, heathy, sedgey or shrubby understorey. Some riparian vegetation may be treeless and many rivers in Tasmania have extensive river flats of silver tussock grass as riparian vegetation. Alongside the stream there is often a strip of vegetation containing moisture-loving herbs, sedges, rushes and reeds that are periodically inundated. Within the stream are aquatic plants that are often referred to as macrophytes, which may float on the surface or emerge through it.</p> <p><b>Kit 6 Riparian Bush</b></p>

## Key 3: Bush that is treeless

All the bush types in Key 3 are treeless or almost treeless.

Go through the key until you find the summary that best describes your bush. Then go to the corresponding description to see if it accurately describes the bush. If it sounds correct go to the relevant kit for more detailed information about the bush type and its management. If the description does not fit repeat the process until you find the bush type that most closely describes your bush. If you need help contact a Bushcare officer or a Parks and Wildlife Service botanist on (03) 6233 6556.

SUMMARY	BUSH TYPE	DESCRIPTION
<p>Vegetation dominated by succulent herbs and shrubs, and tussocky plants. Subject to occasional inundation by the sea.</p> 	<b>Saltmarsh</b>	<p>Saltmarsh occurs in areas that are periodically inundated by the sea. It is therefore largely confined to estuaries and inlets. Near the mouths of estuaries and inlets, where the inundating water is highly saline, saltmarshes are dominated by succulent herbs and shrubs. Where inflowing rivers and streams make the water less saline, tussock rushes, tussock sedges, tussock grasses and non-succulent herbs are more prominent.</p> <p><b>Kit 9 Other Bush Types</b></p>

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Vegetation dominated by species confined to the coastal zone. Found on coastal sand dunes, cliffs and rocky shores.



**Dry coastal vegetation**

Dry coastal vegetation occurs on well-drained soils along the coast. It can occur on sand dunes, cliffs and rocky shores. It is dominated by plants that are confined to the coastal zone. The most common dominant species are sea rockets, marram grass, coast fescue, coast spinifex, blue daisy-bush, boobyalla, coast wattle, coast beard-heath and coastal tea-tree.

**Kit 9 Other Bush Types**

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Vegetation usually dominated by aquatic herbs, sedges and rushes. Area usually flooded for at least part of the year.



**Wetland**

Wetlands are areas of shallow water that are usually flooded for at least part of the year. They are distributed from the coast to inland areas and may occur at low and high altitudes. They include areas of marsh, fen and peatland, and may be found in streams and around lakes. On some farms a small wetland may simply be a swampy area that has reeds and rushes. Many wetlands have dried out during the drought periods of the last 15 years. However, they may refill in the future.

**Kit 9 Other Bush Types**

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Vegetation dominated by native grasses in the tallest layer. Land less than 600 m above sea level.



**Lowland grassland**

There are two types of lowland grassland: lowland silver tussock grassland and kangaroo grass tussock grassland. Lowland silver tussock grassland is generally found on alluvial river flats less than 600 m above sea level. It also occurs in coastal areas on sand ridges or next to wetlands. The dominant grass is silver tussock which is a narrow-leaved species that forms dense tussocks up to 1 m in height. Kangaroo grass tussock grassland is found on well-drained, fertile valley floors in low rainfall, low altitude areas. It is also found on shallow soils on well-drained hilltops and ridges. Kangaroo grass tussock grassland is dominated by kangaroo grass which is a deep-rooted, summer-growing, perennial grass. It has a distinctly-shaped flowering head and its foliage is red-green during the non-growing season.

**Kit 7 Grassy Bush**

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Vegetation dominated by sedges and rushes. Buttongrass hummocks prominent.



**Buttongrass moorland**

Buttongrass moorland is found on poorly-drained and infertile soils. It is the most common vegetation type in lowland western Tasmania. It can also occur on poorly-drained infertile flats elsewhere in the state. Buttongrass moorland is less than 2 m tall and is dominated by buttongrass hummocks with a rich mixture of shrubs, sedges and rushes in the gaps between the hummocks.

**Kit 9 Other Bush Types**

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Vegetation dominated by small-leaved prickly shrubs less than 2 m tall. Land less than 1000 m above sea level.



**Heath**

Heath is usually found close to the coast on highly infertile sandy plains. The most extensive areas of heath in the state are found in the Furneaux Group of islands and in the north east. Small areas of heath are occasionally found on poorly-drained inland sites and rock plate hill tops. Heath is dominated by shrubs less than 2 m tall in the tallest layer. The most common dominant species are tea-tree, paperbark, banksia, casuarina and grass-tree.

**Kit 9 Other Bush Types**

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Vegetation dominated by native grasses in the tallest layer. Land higher than 600 m above sea level.



**Highland grassland**

Highland grassland is found in fertile valleys and plains between 600 m above sea level and the lower limit of alpine vegetation (approximately 1000 m above sea level). The dominant grass is silver tussock which is a narrow-leaved species that forms dense tussocks up to 1 m in height. A rich variety of wildflowers can often be found in the gaps between the tussocks.

**Kit 7 Grassy Bush**

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Land higher than 1000 m above sea level.



**Alpine vegetation**

Alpine vegetation is found above the tree line, in treeless areas and among subalpine forests. It is less than 2 m tall. The alpine vegetation of Tasmania is extremely unusual globally in that most of it is dominated by small-leaved shrubs or hard cushion plants. However, there are also substantial areas dominated by grasses, herbs or sedges.

**Kit 9 Other Bush Types**

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## Key 4: Bush with a tree layer made up of eucalypt trees

All the bush types in Key 4 have a tree layer or canopy of eucalypt trees. However, the shrub and ground layers that make up the understorey vary depending on the bush type. When trying to determine your bush type do not worry about the canopy at this stage. Instead, focus your attention on the understorey.

Go through the key until you find the summary that best describes your bush. Then go to the corresponding description to see if it accurately describes the bush. If it sounds correct go to the relevant kit for more detailed information about the bush type and its management. If the description does not fit repeat the process until you find the bush type that most closely describes your bush. If you need help contact a Bushcare officer or a Parks and Wildlife Service botanist on (03) 6233 6556.

SUMMARY	BUSH TYPE	DESCRIPTION
Understorey dominated by grasses, saggis and wildflowers. Shrubs over 2 m tall sparse.	<b>Grassy woodland and forest</b> (also known as dry sclerophyll forest)	Grassy woodland and forest occurs naturally on fertile soils, usually in low rainfall areas. This vegetation type is one of the most characteristic bush types of the Midlands and the central east coast. The understorey is dominated by a diversity of grasses, saggis, lilies, daisies, orchids, peas and other wildflowers. The canopy can be dominated by a range of eucalypts.  <b>Kit 7 Grassy Bush</b>
		
Understorey dominated by grasses and small-leaved shrubs less than 2 m tall. Bush is a mixture of grassy and heathy woodland or forest.	<b>Grassy/heathy woodland and forest</b> (also known as dry sclerophyll forest)	Grassy/heathy woodland and forest has an understorey in which small-leaved shrubs and grasses make up more than 30% of the cover in the layer that is less than 2 m in height. Typical shrubs include heaths, acacias and legumes. Typical grasses include wallaby, plume, spear and tussock grasses. There may be a taller subsidiary layer in which wattles and she-oaks are prominent. This layer is sparser than the lower one. The canopy may be dominated by a range of eucalypts.  <b>Kit 8 Eucalypt Bush</b>
		

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Understorey dominated by small-leaved shrubs less than 2 m tall and/or bracken.

**Heathy woodland and forest**  
(also known as dry sclerophyll forest)

Heathy woodland and forest has an understorey that is less than 2 m tall and dominated by small-leaved shrubs and/or bracken. Typical shrubs include acacias, heaths and legumes. The canopy may be dominated by a range of eucalypts. It is usually associated with nutrient-poor sandy soils that form on sandstone, quartzite and sand sheets. Heathy understoreies can also be found on shallow soils on dolerite where the rainfall is moderate to high.

**Kit 8 Eucalypt Bush**



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Understorey dominated by small-leaved shrubs more than 2 m tall.

**Shrubby forest**  
(also known as dry sclerophyll forest)

The understorey of shrubby forest is dominated by small-leaved shrubs more than 2 m tall, such as tea-trees and wattles. The canopy can be dominated by most types of eucalypt forest. It is usually found in moist conditions that are intermediate between those of wet forest and either heathy forest or grassy woodland and forest.

**Kit 8 Eucalypt Bush**



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Understorey dominated by broad-leaved tall shrubs and small trees.

**Wet forest**  
(also known as wet sclerophyll forest)

Wet forest has an understorey in which broad-leaved tall shrubs and small trees, such as dogwood, musk and blanket leaf, form a prominent layer. The shrub understorey is often dense. Alternatively, wet forest can have a ground layer in which ferns, excluding bracken, are dominant, or an understorey dominated by temperate rainforest trees, such as myrtle beech, sassafras and celerytop pine. The canopy of wet forest may be dominated by a range of eucalypts. Wet forests occur on moderately fertile to fertile well-drained soils in areas of high rainfall.

**Kit 8 Eucalypt Bush**



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Myrtle, sassafras, horizontal, leatherwood or celerytop pine prominent in the understorey.

**Mixed forest**

Mixed forest has an understorey of rainforest species and an overstorey of eucalypts that becomes sparse as the forest matures. Mixed forest is often dominated by gum-topped stringybark, brown-topped stringybark, giant ash or alpine yellow gum. The eucalypts are usually taller than 30 m and the rainforest understorey is typically 10-20 m tall, except in some subalpine situations. Mixed forests are extensive throughout the state, with the exception of the Midlands. They tend to occur on sites that are protected from fire. In many locations they form a band between rainforest and wet forest. Mixed forests occur in reserves such as the Hartz Mountains, Cradle Mountain-Lake St Clair, Mount Field and Wild Rivers National Parks.

**Refer to Wet forest in Kit 8 Eucalypt Bush**



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Tree layer dominated by she-oak but eucalypts also present.

**She-oak woodland and forest**

She-oak is a small, drooping tree. Because it reaches a lower maximum height and has a slower growth rate than eucalypts it usually only dominates native vegetation in places where eucalypts find it hard to grow. These are generally north-facing slopes with shallow and rocky soils in areas receiving less than 700 mm of rainfall. Therefore, she-oak woodland and forest is widespread in dry eastern Tasmania and on the eastern Bass Strait islands, most commonly near the coast. She-oaks can be found as the dominant trees in woodland and forest. However, they can also form a major understorey component of eucalypt forest.

**Kit 9 Other Bush Types**



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Tree layer dominated by Oyster Bay pine or South Esk pine but eucalypts also present.

**Oyster Bay pine and South Esk pine woodland and forest**

Tasmania has two native cypress pine species. Oyster Bay pine woodlands and forests occur along the east coast from Cape Pillar to the Douglas-Apsley National Park and in the Furneaux Group. The threatened Tasmanian endemic, South Esk pine, is found near a few rivers in the east of the state, including the Apsley, Swan, St Pauls and South Esk Rivers, where it forms a low woodland or forest community. Native cypress pines can be found as the dominant trees in woodland and forest. However, they can also form a major understorey component of eucalypt forest, and they occasionally occur in heath.

**Kit 9 Other Bush Types**



## Key 5: Bush with a tree layer made up of trees that are not eucalypts

All the bush types in Key 5 have a tree layer or canopy that is dominated by trees other than eucalypts. When trying to determine your bush type focus your attention on the trees in the canopy. Do not worry about the understorey at this stage.

Go through the key until you find the summary that best describes your bush. Then go to the corresponding description to see if it accurately describes the bush. If it sounds correct go to the nominated kit for more detailed information about the bush type and its management. If the description does not fit repeat the process until you find the bush type that most closely describes your bush. If you need help contact a Bushcare officer or a Parks and Wildlife Service botanist on (03) 6233 6556.

SUMMARY	BUSH TYPE	DESCRIPTION
Tree layer dominated by banksia.	<b>Banksia scrub and woodland</b>	Banksia varies in appearance, forming a shrub or small tree. It is widespread in Tasmania. It forms scrub and woodland on coastal sand dunes where the fire frequency is low. Banksia trees also form groves in the Midlands, usually on sandy soils. Some of these groves are extensive, up to 2 km in length with magnificent old trees, although the majority are small copses.  <b>Kit 9 Other Bush Types</b>
		
Tree layer dominated by she-oak.	<b>She-oak woodland and forest</b>	She-oak is a small, drooping tree. Because it reaches a lower maximum height and has a slower growth rate than eucalypts it usually only dominates native vegetation in places where eucalypts find it hard to grow. These are generally north-facing slopes with shallow and rocky soils in areas receiving less than 700 mm of rainfall. Therefore, she-oak woodland and forest is widespread in dry eastern Tasmania and on the eastern Bass Strait islands, most commonly near the coast.  <b>Kit 9 Other Bush Types</b>
		
Tree layer dominated by Oyster Bay pine or South Esk pine.	<b>Oyster Bay pine and South Esk pine woodland and forest</b>	Tasmania has two native cypress pine species. Oyster Bay pine woodlands and forests occur along the east coast from Cape Pillar to the Douglas-Apsley National Park and in the Furneaux Group. The threatened Tasmanian endemic, South Esk pine, is found near a few rivers in the east of the state, including the Apsley, Swan, St Pauls and South Esk Rivers, where it forms a low woodland or forest community.  <b>Kit 9 Other Bush Types</b>
		

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Tea-tree or paperbark dominant with a closed canopy.

**Tea-tree and paperbark wet scrub and forest**

Tea-tree and paperbark wet scrub and forest are dominated by manuka, soft-fruited tea-tree, shiny tea-tree, woolly tea-tree, swamp paperbark and scented paperbark. This bush type usually has an understorey containing rainforest species. In northern Tasmania and the Bass Strait islands dense forests dominated by swamp paperbark are widespread.

**Kit 9 Other Bush Types**



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Blackwood dominant with a closed canopy.

**Blackwood forest**

Blackwood forest is widespread in lowland Tasmania, except on the most infertile soils. It may dominate forests in well-drained areas and in swamps.

**Kit 9 Other Bush Types**



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Dense canopy dominated by native olive, pinkwood or dogwood.

**Dry rainforest**

Dry rainforest is rare. It is confined to deep, south-facing rocky gullies in the driest parts of the state. It has a dense, closed upper canopy of small trees, most notably native olive, pinkwood, and dogwood, with the occasional emergent blackwoods.

**Kit 9 Other Bush Types**



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Canopy dominated by myrtle, sassafras, King Billy pine, pencil pine, horizontal, leatherwood, or Huon pine.

**Temperate rainforest**

Temperate rainforest is most extensive in western Tasmania and in the north east highlands. It also occurs sporadically in most mountain ranges in eastern Tasmania. The canopy is dominated, either singly or in combination, by myrtle beech, deciduous beech, sassafras, King Billy pine, pencil pine, leatherwood, horizontal, Huon pine, celerytop pine and Cheshunt pine.

**Kit 9 Other Bush Types**



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# Condition of your bush

Once you have determined the type of bush you have on your property you will need to assess its health or condition. The overall condition of the bush will help you decide what management is necessary.

## Threatened species

Threatened plants and animals are not necessarily found in bush in excellent condition. Gorse provides shelter for bandicoots and prevents the grazing of some threatened plant species such as Gunns stackhousia (*Stackhousia gunnii*) and spur velleia (*Velleia paradoxa*). In areas where the habitat has been extensively modified only degraded habitat may remain for some species. Lowland silver tussock grassland, a community that is almost extinct in Tasmania, is often represented by badly degraded remnants. Despite the degradation these remnants are essential habitat for the threatened Ptunarra brown butterfly.

If you suspect that you may have threatened species on your property please contact the Threatened Species Unit of the Department of Primary Industries, Water and Environment on (03) 6233 6556. Descriptions and illustrations of the threatened plants you may find on your property are given in **Kit 5 Threatened Plants Species in Your Bush**.

## General assessment of bush condition

Bush in all types of condition can be important. An area of bush in poor condition may be one of the few examples of its type that has survived and it may contain threatened species. Nevertheless, it is obviously better to have bush in excellent condition than bush in poor condition — as long as you do not destroy a population of threatened species in the process of improving it.

The condition of bush relates closely to its management needs. Bush in excellent condition has obviously been managed well and generally requires only a continuation of that management. Bush in good condition can generally be improved by modifying current management practices. Bush in poor condition usually requires active restoration measures to improve it.

To determine the condition of your bush you need to consider a number of things, including:

- the health of the bush;
- the presence or absence of widespread dead or dying trees;
- the presence or absence of weeds, pests and diseases;
- the presence or absence of soil erosion and land degradation;
- the impact of your present management practices, including stocking levels, fire regimes, drainage of wetlands, gravel and sand mining, and nutrient drift from adjacent land.

## Excellent condition

Bush in excellent condition is entirely or almost entirely composed of native species in all its layers. There may be occasional exotic annual grasses such as hair grass (*Aira* species) or quiverry grass (*Briza* species), or exotic herbs such as flatweed (*Hypochoeris* species and *Leontodon* species). However, exotic shrubs such as gorse or broom are absent or rare. Woodlands and forests in excellent condition have a healthy tree layer, a healthy understorey, and some evidence of younger trees emerging in the gaps. Treeless vegetation in excellent condition has sufficient spaces between the tussocks or shrubs to allow smaller species to survive.

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## **Good condition**

Bush in good condition has native species providing more than half the cover in all the layers. The exotic grasses and herbs can generally be distinguished from the native grasses and herbs by their greener and wider leaves. Most of these exotic species are found in pastures and as weeds in gardens. The most common exotic shrubs are gorse, broom, hawthorn and briar rose. Woodlands and forests in good condition may have unhealthy trees and little evidence of tree regeneration in the gaps but the understorey will be dominated by a rich variety of native plants. Treeless vegetation in good condition may be dominated by natives but may have little space for smaller species between the tussocks or shrubs.

## **Poor condition**

Bush in poor condition has exotic species comprising more than half the cover in at least one layer. If the trees are healthy there may be little or no regeneration in the gaps and an understorey dominated by exotics. If the trees are dying or dead there will also be little or no regeneration and the understorey will be dominated by exotic species.

Where native species comprise less than ten percent of the cover in all layers the area is no longer regarded as bush. However, some such areas may have populations of threatened species and will therefore be worthy of attention.

# Characteristics of healthy bush

The characteristics of healthy bush vary with the different vegetation types. For example, bush is often considered to be in good condition if there is a diversity of tree and shrub species, habitat provided by old trees and logs, and a rich ground layer of twigs and small branches. In grasslands and wetlands, where there are no trees, these components will not be present but the bush may still be in excellent condition. Similarly, you may wish to maintain the grassiness of your understorey and reduce the number of shrubs. Their absence does not mean that the bush is in poor condition. Rather, its condition is the result of the management option you have chosen. Nevertheless, healthy bush generally has a number of characteristics that are described below.

## Made up of layers

Healthy bush is usually made up of a number of layers.

A thin layer of mosses and lichens on the ground is considered to be an important component of healthy bush, particularly in grasslands and grassy woodland. This layer, known as the cryptogamic mat, appears as a fine speckling of white, brown and green on the soil surface.

A litter layer helps protect the soil from rain and wind, and provides important habitat for invertebrates, spiders and reptiles. This layer is made up of twigs, sticks and leaves. In treeless grassy vegetation there is still usually a thick litter layer of dead grasses. Bacteria and fungi are important components of the litter layer as they break down the litter and release nutrients. Larger branches, limbs and logs are other important components of the litter layer because they provide habitat for a range of species. Old fence posts left lying on the ground along the edges of paddocks can also provide valuable habitat.

A rich and diverse ground layer made up of grasses, lilies, sedges and wildflowers is usually considered to be an indicator of healthy bush, particularly in grassy bush. Bush with a healthy and diverse grassy understorey is relatively rare — the understorey is often reduced to a few species such as wallaby grass and spear grass. In bush where shrubs and heaths dominate the understorey the ground layer may be less developed. In some situations such as in the saline herb fields that fringe wetlands only one or two species may be dominant. The absence of a diverse ground layer does not necessarily indicate poor condition. In some bush types the ground layer may be dominated by ferns, particularly in wet forests along creek lines and in damp gullies, or a dense layer of bracken may be prominent. This is not necessarily a problem and may reflect the use of frequent cool burns as a management tool. Dense bracken can protect young seedlings from grazing and in some bush it is the only place where young saplings can grow. It can also be important in preventing soil erosion.

An understorey of native shrubs is an important component of many bush types. This layer can be in poor condition in bush that is heavily grazed, particularly by cattle or goats. It may also be in poor condition in bush that has been burned so frequently that the shrubs have been eliminated because they were unable to flower and set seed between fires. Even shrubs that resprout after fire will eventually be weakened and killed by too many fires in quick succession. A shrub layer is less prominent in grassy vegetation although some low shrubs are still present. Shrubs are important as a nectar and food source for many insects and some birds. On a warm day, species such as ants delight are covered in ants, flies, beetles, wasps, moths and spiders. Shrubs also offer habitat for small animals. Prickly shrubs help protect some species, such as wrens, from predators. They are also important structural components for web-building spiders, particularly in heavily-grazed areas.

The tree canopy in most Tasmanian bush consists of an upper layer of a dominant eucalypt and a few co-dominant eucalypts. A lower layer of small trees and shrubs such as wattles, native cherry and she-oak is often also present.

## **Range of habitat**

Healthy bush provides a range of habitat for small mammals, birds and invertebrates. Types of habitat found in remnant bush include:

- large old trees and dead trees
- tree hollows for nesting
- bush of different fire ages
- areas of dense vegetation — even gorse patches can be important habitat for bandicoots
- riparian vegetation
- logs and branches on the ground
- twigs and leaves
- thin soils on rock plates, particularly on dolerite
- rocky areas
- wetlands.

## **Regenerates itself**

Healthy bush regenerates itself. The bush is likely to be in good condition if the ground layer, the understorey of shrubs and small trees, and the tree canopy are being replaced by young seedlings and saplings. This is particularly important in long-lived vegetation. The lack of regeneration is a major concern in the Midlands where rural tree decline is occurring and no young trees are replacing the dying canopy eucalypts.

## **Surrounding landscape**

The nature of the surrounding landscape will affect the health of a patch of bush. If it is surrounded by bushland or is adjacent to a neighbour's bush it is likely to be in better condition than if isolated. If bush is surrounded by cropping land or pasture it is more likely to suffer from weed invasion and other problems.

## **Links to other bush**

Bush that has a compact shape is more likely to be in good condition than bush that is long and thin with a high perimeter to area ratio. Long thin strips of bush are more prone to weed invasion, disturbance, accidental fertiliser drift, and the effects of wind. However, such strips can remain in good condition with appropriate management.

The habitat value of a patch of bush may be enhanced if it is linked to or is close to other patches, particularly if it is small. Small patches of bush close to each other provide an opportunity to establish vegetation buffers through strategic planting. These can also act as shelterbelts. There is much potential for landowners to work together to jointly manage their bush.

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# Planning your bush management

Managing your bush requires careful planning based on the priorities you have determined are most appropriate for your property. The following section outlines a few ideas that may be helpful when developing a long-term management plan for your bush.

## Whole farm nature maps

Developing a whole farm nature map is the first step towards developing a management plan for your bush. The primary purpose of the map is to show the location of the different types of bush on your property. It is also used to show areas of weed invasion.

The best way to map the vegetation on your property is to use aerial photographs. Aerial photographs can be readily obtained from the Department of Primary Industries, Water and Environment. The colours, tones and textures on these photographs should help you identify the different types of bush on the ground. For example, she-oaks and eucalypts have different crown shapes and textures, and heathy bush appears dark compared to grassy bush. If the photograph was taken in the wetter part of the year the colour of the vegetation can be used to gauge the degree of weed invasion. Exotic weeds tend to be blue-green in colour whereas native vegetation tends to be pastel.

It is also extremely important to map the location of any significant vegetation types and populations of threatened species. You will probably need to identify these using your knowledge of the property as they will not be obvious from the aerial photographs. If you suspect that you may have any significant vegetation types or threatened species on your property contact the Threatened Species Unit of the Department of Primary Industries, Water and Environment on (03) 6233 6556.

## Management maps

You will need to develop a management map that shows your different management zones and compartments. This map can be cross-referenced with your usual system for recording management details on your farm, such as a notebook, computer spreadsheet or card index system.

### Grazing compartments

If you have different types of bush or the same type of bush in varying condition you may need to apply different grazing regimes. Using your nature map you can plan new fences to accommodate these different needs. For example, you may have an existing paddock that is half native grassland and half heathy forest. If you are fencing this area the fence would be best placed between the two vegetation types.

### Burning compartments

Burning compartments need to be defined by barriers to the movement of fire. These can be as inconspicuous as a stock track or they may be a road or firebreak. Burning compartments should usually be smaller than grazing compartments, following the principle that not all of a vegetation type should be burnt at once. Most burning compartments should be in the range of 1-5 ha.

### Special management zones

If you have a population of threatened species that needs a different management regime from the surrounding area, the area should be marked on the management map. Similarly, if you have an area that you want to manage for a special purpose such as tree regeneration it should also be indicated on your map.

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# Monitoring your bush management

It is important to monitor the impact of your management practices on the bush so that you can change them if you are not achieving your goals.

## Threatened plants

If you have threatened plant species on your property and they are in low number you can simply count the number of seedlings and adult plants. If the number is large you can gain an impression of any changes in number by walking through the centre of the population and counting the number of individuals in a selected area. If the area is large enough to show up on an aerial photograph you can map the distribution on your whole farm nature map.

## Changes in bush vegetation

The simplest and quickest way of getting a reliable indication of changes in the vegetation making up your bush is to do a transect. To do a transect mark a line 50 m long with several stakes and lay a measuring tape between them. Walk along the line recording the distance in metres the thing you are measuring underlying the line, add up the distances for each attribute, and multiply by two. This will give you the percentage cover of any vegetation or environmental attribute. Useful attributes to measure include the cover of weeds, cover of bare ground, cover of shrubs or young trees, and the cover of large tussocks.

## Tree health

One quick and simple way of gaining a broad picture of the health of trees in a stand is to take a photograph from a fixed point on a regular basis. The condition of the trees in the photographs can then be compared from year to year. If the proportion of trees in the poorer health classes increases through time you have an ongoing dieback problem. If this proportion decreases then the stand is recovering.