Environment, Climate Change & Water

# Robertson Basalt Tall Open Forest in the Sydney Basin Bioregion

## Introduction

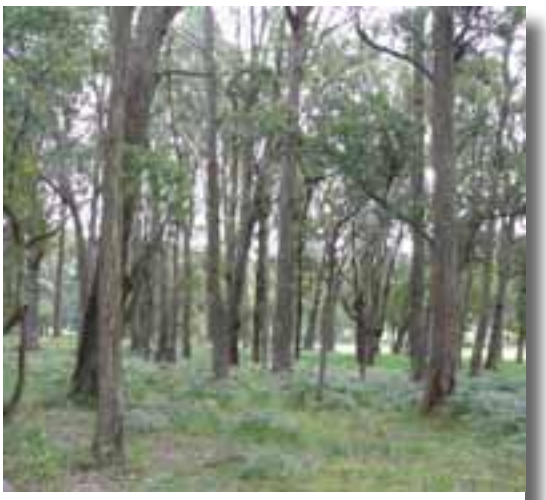
These guidelines provide background information to assist landholders to identify remnants of Robertson Basalt Tall Open Forest (known here as Robertson Basalt Forest) in the Sydney Basin Bioregion. For more detailed information, refer to the NSW Scientific Committee's Determination Advice at www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10732

### What is an endangered ecological community?

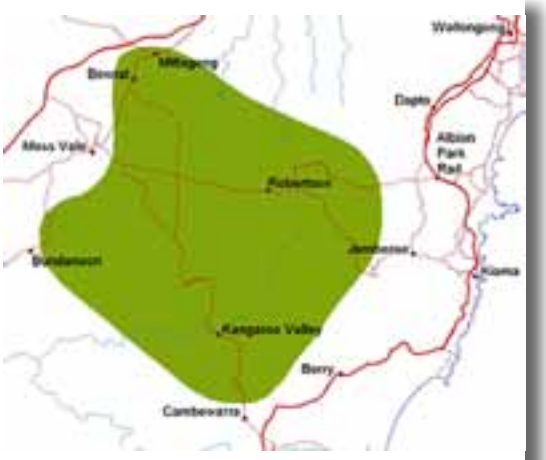
An ecological community is a unique and naturally occurring assemblage of plants and animals. The presence of an ecological community can be determined by factors such as soil type, position in the landscape, climate and water availability, all of which influence species composition.. An endangered ecological community (EEC) is an ecological community listed under the *Threatened Species Conservation Act 1995* as being at risk of extinction unless threats affecting these areas are managed and reduced.

### What is Robertson Basalt Forest?

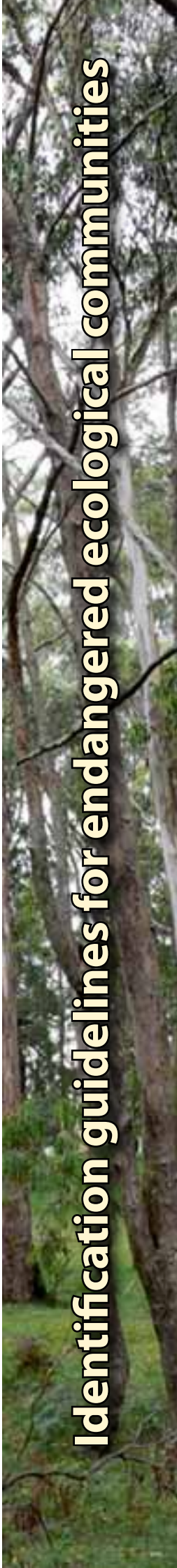
Robertson Basalt Forest is an open forest or woodland up to 30 m tall with a sparse to moderately dense shrub layer and a dense ground layer dominated by herbs. It occurs on high-fertility basalt-derived soils in areas of relatively high rainfall (about 1000–600 mm annually). The most common canopy tree species are brown barrel (*Eucalyptus fastigata)*, ribbon gum (*E. viminalis)*, narrow-leaved peppermint (*E. radiata* subsp. *radiata)* and river peppermint (*E. elata*). Blackwood (*Acacia melanoxylon)* is a common small tree species and shrubs that often occur include prickly currant bush (*Coprosma quadrifida)* and the native daisy *Senecio linearifolius*. The composition of the community varies across its distribution, largely reflecting a gradient of decreasing rainfall from east (near the Illawarra Escarpment) to west (near Bundanoon). Robertson Basalt Forest grades into three floristically similar and sometimes adjoining EECs - Mount Gibraltar Forest in the Sydney Basin Bioregion, Southern Highlands Shale Woodlands in the Sydney Basin Bioregion and Tableland Basalt Forest in the Sydney Basin and South Eastern Highlands Bioregion. Vegetation with characteristics that are intermediate between Robertson Basalt Tall Forest, Mount Gibraltar



*Robertson Basalt Forest–Avoca*
*Photograph: P Richards*




*Potential occurence of Robertson Basalt Tall Open Forest*



Forest, Southern Highlands Shale Woodlands and Tableland Basalt Forest are covered collectively under these communities.

### Where is Roberston Basalt Forest found?

Robertson Basalt Forest is chiefly restricted to occurrences of Robertson Basalt on the Southern Highlands of NSW but is also found on the Cambewarra Range to the south. It is found in the Wingecarribee and Shoalhaven local government areas, but may occur elsewhere in the Sydney Basin Bioregion (refer to map).

### Why is it important?

Robertson Basalt Forest has been extensively cleared for agriculture and rural development. Only about 400 hectares (or less than 15%) of its original occurrence is estimated to remain, often in small and isolated remnants. Remaining sites are often threatened by clearing, logging, firewood collection, inappropriate fire regime, weed invasion and disturbance related to grazing practices.

## Description of the community

### The tree layer

The most common trees occurring in the canopy are brown barrel (*Eucalyptus fastigata*), ribbon gum (*E. viminalis*), narrow-leaved peppermint (*E. radiata* subsp. *radiata*) and river peppermint (*E. elata*). Other eucalypt species may occasionally be present, such as mountain grey gum (*E. cypellocarpa*) and forest red gum (*E. tereticornis*).

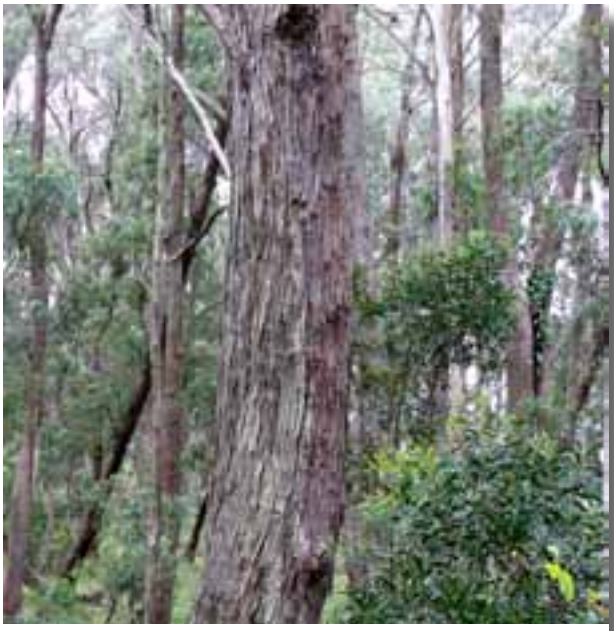
### The shrub layer

The shrub layer varies at different sites from sparse to moderately dense and consists of a diversity of small tree and shrub species including blackwood (*Acacia melanoxylon)*, black wattle (*A. mearnsii*) prickly currant bush (*Coprosma quadrifida*), fireweed groundsel (*Senecio linearifolius*), native raspberry (*Rubus parvifolius*), orange thorn (*Pittosporum multiflorum)* and rice flower (*Pimelea ligustrina*).

### The ground layer

There is usually a dense ground layer comprising a variety of herbs, grasses, ferns and twiners in Robertson Basalt Forest. Common ground layer species include spiny-headed mat-rush (*Lomandra longifolia)*, tussock grass (*Poa labillardierei),* weeping grass (*Microlaena stipoides)*, bracken fern (*Pteridium esculentum)*, old man's beard (*Clematis aristata)* and bearded tylophora (*Tylophora barbata*).

*Robertson Basalt Forest–Avoca Photograph: P Richards*



*Brown Barrel* (Eucalyptus fastigata) *Photograph: P Richards*

## Characteristic species

A list of plants that characterise a patch of Robertson Basalt Forest is provided in the table below. Note that not all the species listed need to occur at any one site for it to be considered Robertson Basalt Forest, and there may also be additional species that are not included in the table. The species present at any site will be influenced by the size of the site, the recent rainfall or drought conditions and by its disturbance (including fire and logging) history.

| Scientific Name | Common name |
|---|---|
| Trees | |
| *Doryphora sassafras* | Sassafras |
| *Eucalyptus elata* | River peppermint |
| *Eucalyptus fastigata* | Brown barrel |
| *Eucalyptus radiata* subsp. *radiata* | Narrow-leaved peppermint |
| *Eucalyptus tereticornis* | Forest red gum |
| *Eucalyptus viminalis* | Manna or ribbon gum |
| *Eucalyptus cypellocarpa* | Mountain grey gum |
| Shrubs/small trees | |
| *Acacia mearnsii* | Black wattle |
| *Acacia melanoxylon* | Blackwood |
| *Acronychia oblongifolia* | Common acronychia |
| *Pittosporum multiflorum* | Orange thorn |
| *Coprosma quadrifida* | Prickly currant bush |
| *Hedycarya angustifolia* | Native mulberry |
| *Melicytus dentatus* | Tree violet |
| *Notelaea venosa* | Veined mock-olive |
| *Pimelea ligustrina* | Rice flower |
| *Pittosporum undulatum* | Sweet pittosporum |
| *Polyscias sambucifolia* | Elderberry panax |
| *Rubus parvifolius* | Native raspberry |
| *Senecio linearifolius* | Fireweed groundsel |
| *Solanum aviculare* | Kangaroo apple |
| Grasses | |
| *Microlaena stipoides* | Weeping grass |
| *Poa labillardierei* | Tusssock |
| *Themeda australis* | Kangaroo grass |
| Herbs/ferns | |
| *Australina pusilla* | Small shade nettle |
| *Coronidium scorpioides* | Button everlasting |
| *Galium propinquum* | Bedstraw |
| *Geranium homeanum* | Native geranium |
| *Lomandra longifolia* | Spiny-headed mat-rush |
| *Pellaea falcata* | Sickle fern |
| *Plantago debilis* | Plantain |
| *Pteridium esculentum* | Bracken fern |
| *Stellaria flaccida* | - |
| *Urtica incisa* | Stinging nettle |
| *Veronica plebeia* | Trailing speedwell |
| *Viola hederacea* | Native violet |

| Scientific Name | Common name |
|---|---|
| Vines | |
| *Aphanopetalum resinosum* | Gum vine |
| *Clematis aristata* | Old man's beard |
| *Desmodium varians* | Slender tick-trefoil |
| *Eustrephus latifolius* | Wombat berry |
| *Geitonoplesium cymosum* | Scrambling lily |
| *Marsdenia rostrata* | Common milk vine |
| *Pandorea pandorana* | Wonga vine |
| *Parsonsia straminea* | Common silkpod |
| *Rubus rosifolius* | Rose-leaf bramble |
| *Smilax australis* | Native sarsparilla |
| *Tylophora barbata* | Bearded tylophora |

*Bracken fern* (Pteridium esculentum) *Photograph: P Richards*

*Old man's beard* (Clematis aristata) *Photograph: P Richards*

Frequently burnt sites may support a very dense ground layer of bracken fern.

### Variation in the community

At heavily disturbed sites only some of the species which characterise this community may be present. In addition, above ground individuals of some plants may not be present, but the species may be represented below ground in the soil seed banks or as bulbs, corms, rhizomes or rootstocks. As such, disturbed remnants may still be considered part of the community. This includes sites where either the shrub layer and/or tree layer would respond, under appropriate management, to natural regeneration (i.e. where the natural soil and associated seed bank are still mostly intact).

## How can I identify an area of Robertson Basalt Forest?

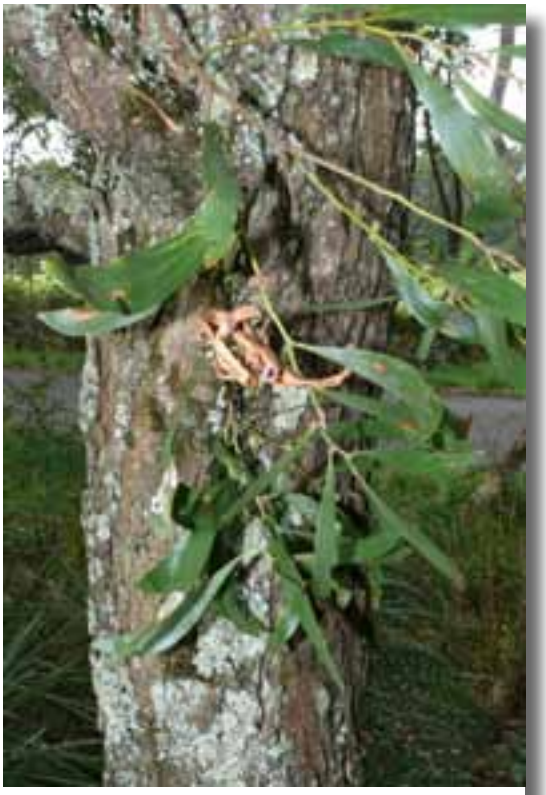
The following is a list of key characteristics to help identify an area of Robertson Basalt Forest.

- Is the site in the Sydney Basin Bioregion?
- Is the site on fertile soils derived generally from basalt in areas of high rainfall (c. 1000–1600 mm per annum)?
- Does the site contain brown barrel, manna gum, narrow-leaved peppermint, river peppermint or mountain grey gum trees?

If you answer yes to the above questions, the area may be Robertson Basalt Forest. Where difficulties arise with decisions on whether particular sites are Robertson Basalt Forest, expert advice may be needed.

### What does this mean for my property?

As a listed endangered ecological community under the *Threatened Species Conservation Act 1995*, Robertson Basalt Forest has significant conservation value and some activities may require consent or approval. Please contact the Department of Environment, Climate Change and Water (DECCW) for further information.



*Blackwood* (Acacia melanoxylon) *foliage, fruits and bark Photograph: P Richards*

### Determining the conservation value of remnants

The degree of disturbance (i.e. condition) of many remnants can vary, from almost pristine to highly modified. It is important to note that even small patches or areas that have had past disturbance such as selective logging, fire or grazing may still be important remnants of Robertson Basalt Forest and be considered the EEC. Where difficulties arise with decisions on whether particular sites are Robertson Basalt Forest, expert advice may be needed.

Retaining mature native vegetation or EECs for conservation purposes may attract incentive funding. Funding is allocated to landholders by the local Catchment Management Authority (CMA) according to the priorities set out in their Catchment Action Plan and strategies. For more information contact your local CMA or email: info@nativevegetation.nsw.gov.au

To protect and manage remnants of Robertson Basalt Forest: manage or eliminate fire, exclude firewood collection, remove and fence out stock, control weeds, remove other disturbances and link remnants to existing vegetated areas with corridors of native vegetation.

## For further assistance

This and other EEC guidelines are available on the DECCW website at

http://threatenedspecies.environment.nsw.gov.au/tsprofile/home_tec.aspx or

http://www.environment.nsw.gov.au/pnf/eecfieldidguidelines.htm

The resources listed below also provide information on NSW plants, native vegetation and EECs.

- Botanic Gardens Trust plant identification assistance: www.rbgsyd.nsw.gov.au/plant_info/identifying_plants/
- Department of Environment, Climate Change and Water threatened species profiles: www.threatenedspecies.environment.nsw.gov.au/tsprofile/home_species.aspx
- Information on bioregions of New South Wales: www.environment.nsw.gov.au/bioregions/Bioregions.htm
- NSW Scientific Committee Determinations: www.environment.nsw.gov.au/committee/ListofScientificCommitteeDeterminations.htm
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*Mountain grey gum* (Eucalyptus cypellocarpa) *Photograph: P Richards*

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*Old man's beard* (Clematis aristata)
*Photograph: P Richards*

*Weeping grass* (Microlaena stipoides)
*Photograph: P Richards*

*Prickly currant bush* (Coprosma quadrifida)
*Photograph: P Richards*

*Blackwood* (Acacia melanoxylon) *foliage*
*Photograph: P Richards*

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