

Edition 2 *From Forest to Fjaeldmark*

The Vegetation Communities

Non-eucalypt forest and woodland



Non-eucalypt forest and woodland

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<i>Melaleuca ericifolia</i> swamp forest (NME)	28
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General description

These forest and woodland communities are grouped together either because they are native forests and woodlands not dominated by eucalypt species or because they do not fit into other forest groups. If there is a functional attribute most share, it is the widespread initiation of even-aged stands by fire and the ability of many of them to form closed-canopy forests. Some of these communities have been referred to as “dry rainforests”.

Some of these communities are probably seral or disturbance-disclimax forms of other communities. Examples are *Leptospermum scoparium*–*Acacia mucronata* forest (NLA) (which may have resulted after burning of *Athrotaxis rainforest* (RKP, RKS), and *Bursaria-Acacia* woodland (NBA) (resulting from rural tree decline and other disturbance to Dry eucalypt forest and woodland, primarily DVG). Many of the communities are climax forms and typically regenerate episodically following fire and thus form even-aged stands (e.g. *Acacia dealbata* forest (NAD), *Callitris rhomboidea* forest (NCR), *Allocasuarina verticillata* forest (NAV) and *Melaleuca*

ericifolia swamp forest (NME)). In fact, all the communities in the *Non-eucalypt forest and woodland* section may be maintained by episodic fire. The boundaries between many of these communities are gradational, but some are sharply marked, often by changes in topography that reinforce different fire intervals.

Some communities are distinctive in the field because one species dominates the canopy and forms a pure stand. The understorey in all these communities is generally sparse. The species dominating these communities are common components of many eucalypt-dominated communities and rainforest communities.

The ecology of some communities is relatively well known; for example *Acacia melanoxylon* swamp forest (NAF) and *Melaleuca ericifolia* swamp forest (NME) (Pannell 1992) and *Callitris rhomboidea* forest (NCR) (Harris and Kirkpatrick 1991a, 1991b). The communities dominated by *Leptospermum* are the least known, probably because they are often seral stages and have not been surveyed systematically.

Section revision

This section was subject to minor revisions in 2015 following a review of the forest/non-forest attributes for TASVEG mapping units. As a result of this process *Bursaria-Acacia* woodland and scrub (**NBA**) has been restricted to describe the core woodland component, and renamed *Bursaria-Acacia* woodland (**NBA**). The Subalpine *Leptospermum nitidum* woodland (**NLN**) unit was also restricted to focus on the woodland component, excluding the scrub facies. A minor revision of *Allocasuarina littoralis* forest (**NAL**) to allow dominance by *Allocasuarina* species other than *A. verticillata* is reflected in the key to this section.

General management issues

The communities in this group may be subject to various threats and impacts. For example, *Acacia dealbata* forest may be converted to another forest type. *Acacia dealbata* is host to a native defoliator, the fireblight beetle (*Pyrgoides orphana*), which commonly inflicts partial or complete defoliation on individual trees or whole stands. In some situations after repeated attacks, it can cause the death of the tree and conversion to another forest type (Elliott 1990).

Some communities have been identified as highly susceptible to degradation by the plant pathogen *Phytophthora cinnamomi*. Infection by the pathogen can result in a general decrease in plant diversity; species from the families Dilleniaceae, Epacridaceae, Fabaceae, Proteaceae and Rutaceae are particularly susceptible (Schahinger et al. 2003). Closing access to infected areas is crucial to restricting its spread and avoiding the creation of new tracks through the bush reduces the vulnerability to infection (Kirkpatrick & Harris 1999). Plants on peaty soils are much more susceptible than those plants on sandy soils.

Banksia serrata is listed rare under the *Tasmanian Threatened Species Protection Act 1995* due to its restricted distribution in Tasmania. Very high fire frequency is likely to cause a long-term change from *Callitris rhomboidea* forest to a different vegetation type (Williams 1991).

Swamp forests such as a *Acacia melanoxylon* swamp forest (**NAF**) are able to regenerate in the absence of heavy disturbance such as fire, however fire has been noted to cause mass germination of soil stored seed, and is commonly used in silvicultural

management of this forest type. Native animal browsing of seedlings is considered to be a significant issue for regeneration (Wells and Hickey 1999).

Allocasuarina verticillata forest (**NAV**) has been degraded through attrition from high fire frequency and excessive grazing resulting in erosion problems in some inland areas. Grazing and firing are incompatible with conservation management of **NAV** (Williams 1991).

The vegetation previously mapped as *Notelaea-Pomaderris-Beyeria* forest (**NNP**) is now included in Broad-leaf scrub (**SBR**) within the *Scrub, heathland and coastal complexes* section.

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Key to Non-eucalypt forest and woodland

	Page
I Forests and woodlands where <i>Leptospermum</i> species are prominent	
2 <i>Leptospermum lanigerum</i> with a significant proportion of <i>Melaleuca squarrosa</i> in the canopy, common in the north-west and north-east on low-lying swampy land <i>Leptospermum lanigerum–Melaleuca squarrosa</i> swamp forest (NLM)	24
2 <i>Leptospermum lanigerum</i> and/or <i>L. glaucescens</i> and/or <i>L. scoparium</i> and/or <i>L. nitidum</i> dominated forest with negligible <i>Melaleuca squarrosa</i> <i>Leptospermum</i> forest (NLE)	22
2 Forests dominated by <i>Leptospermum scoparium</i> with <i>Acacia mucronata</i> , often in association with other sclerophyllous species such as <i>Banksia marginata</i> and <i>Melaleuca squarrosa</i> <i>Leptospermum scoparium–Acacia mucronata</i> forest (NLA)	26
2 Open woodland in subalpine areas dominated by a sparse cover of spreading <i>Leptospermum nitidum</i> trees Subalpine <i>Leptospermum nitidum</i> woodland (NLN)	30
I Forests and woodlands where <i>Acacia</i> is dominant	
2 <i>Acacia dealbata</i> forming forests up to 30 m in height, sometimes in riparian strips, or on valley flats in pasture areas, otherwise resulting from fire in areas of wet eucalypt forest <i>Acacia dealbata</i> forest (NAD)	6
2 <i>Acacia melanoxylon</i> forming pure stands in flat, swampy or seasonally inundated areas particularly in north-west Tasmania <i>Acacia melanoxylon</i> swamp forest (NAF)	10
2 <i>Acacia melanoxylon</i> forming pure stands on hillsides, especially in western Tasmania, and usually resulting from burnt rainforest <i>Acacia melanoxylon</i> forest on rises (NAR)	8
2 Woodlands (dominated by <i>Bursaria spinosa</i> , <i>Acacia</i> species and/or <i>Dodonaea viscosa</i> (occasionally with emergent eucalypts) <i>Bursaria–Acacia</i> woodland (NBA)	18
I Forests and woodlands where <i>Banksia serrata</i> is dominant or co-dominant <i>Banksia serrata</i> woodland (NBS)	16
I Vegetation of any height where <i>Melaleuca ericifolia</i> is dominant <i>Melaleuca ericifolia</i> swamp forest (NME)	28
I Forests and woodlands dominated by <i>Callitris rhomboidea</i> <i>Callitris rhomboidea</i> forest (NCR)	20
See next page of key	

- I Forests where *Allocasuarina* is dominant
 - 2 Forests usually coastal or on dry inland slopes, dominated by *Allocasuarina verticillata*
Allocasuarina verticillata forest (NAV) 14
 - 2 Forests dominated by *Allocasuarina* spp. (predominantly *A. littoralis*) other than *A. verticillata*
Allocasuarina littoralis forest (NAL) 12
 - I Non-eucalypt forests and woodlands not dominated by *Leptospermum*, *Allocasuarina*, *Banksia*, *Callitris* or *Melaleuca*
 - 2 Forests (or scrubs) dominated by *Notelaea ligustrina* and/or *Pomaderris apetala*
See Key to Scrub, heathland and coastal complexes (Broad-leaf scrub (SBR))
-

Acacia dealbata forest (NAD)

General description

Acacia dealbata forest (NAD) is a successional community found on disturbed sites, e.g. on old areas of improved pasture, stream banks and riparian corridors subject to flood disturbance and replaces wet forests and damp sclerophyll forest after fire. The canopy is variable in cover, but is most often composed purely of *Acacia dealbata* trees that can reach 20 m in height. The understorey is variable reflecting the diverse disturbance situations in which the community arises.



Arthur River. Stephen Harris.

Example localities

Stream corridors and old fields of the Northwest Bay and Huon River valleys.

Distinguishing features and similar communities

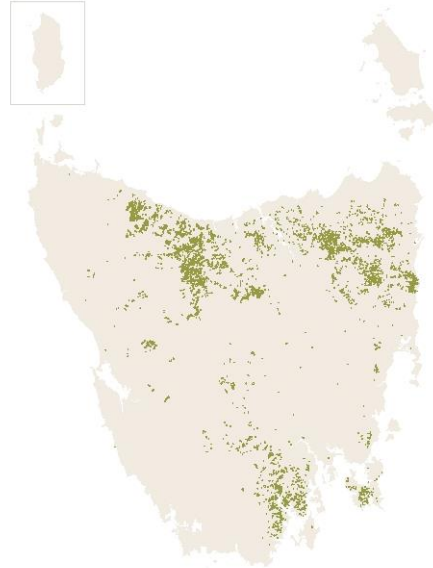
Characterised by the dense canopy of *Acacia dealbata* with occasional remnants of pre-disturbance forest. *Acacia dealbata* can be present as a minor component of *Bursaria-Acacia* woodland (NBA), but where this species forms a dominant canopy it is always mapped as NAD.

RFA mapping unit

NAD is equivalent to RFA SI.

Distribution

Widespread up to 1000 m in elevation in all areas of mainland Tasmania.



Bioregional occurrence

All bioregions.

Site characteristics, habitat and ecology

This community is most common on sites disturbed by fire, past vegetation clearing or floods. Generally, stands are less than 5 ha in size but are occasionally more extensive. The community occupies sites from flats to steep slopes and ridges on a variety of substrates, but most often is found on relatively fertile areas.

Vegetation composition and structure

The canopy is most often composed of purely of *Acacia dealbata* although other species may sometimes be present as a minor component (e.g. eucalypt or broad leaf wet sclerophyll or rainforest species, < 5%).

Trees can reach 20 m in height, but typically the community is short-lived and replaced by other wet forest communities (e.g. rainforest or wet eucalypt forest). Canopy cover can vary from dense in younger stands to sparse in more disturbed or older stands.

Understoreys are variable and range from *Pteridium esculentum* and shrub species, representative of disturbed sites, to regenerating wet forest species such as *Olearia lirata* and *O. argophylla*, to rainforest species such as *Nothofagus cunninghamii*. The understorey often reflects the vegetation present before the disturbance. Except in riparian corridors subject to regular floods, the community reverts to the pre-disturbance community (e.g. wet eucalypt forest, rainforest) if left undisturbed and appropriate seed sources are present.

Floristic communities known to occur in this mapping unit

No systematic botanical survey has been carried out for *Acacia dealbata* dominated vegetation communities in Tasmania.

Additional communities (Forest Botany Manual)

OTHER 10 *Acacia dealbata* closed forest

Riparian communities (Daley & Kirkpatrick 2004)

16 *Acacia dealbata*–*Pomaderris apetala*–*Olearia argophylla*–*Dicksonia antarctica* ferny-sedgy closed-scrub; also occurs in SRE

Acacia melanoxylon forest on rises (NAR)

General description

Acacia melanoxylon forest on rises (NAR) is often a fire-induced seral rainforest or mixed-forest community dominated by regrowth *Acacia melanoxylon* trees of even height; it typically forms a closed forest. The understorey ranges from relatively open to dense. A diversity of species may be present, including eucalypts (which may be co-dominant) or rainforest and wet sclerophyll species (including other species of *Acacia*) over a fern-dominated ground layer.



Mawbanna. Micah Visoiu.

Example locality

Hills around Rosebery.

Distinguishing features and similar communities

NAR is characterised by the almost complete dominance of *Acacia melanoxylon*, which has followed fire in rainforests and mixed forests. It occurs on soils of moderate to high fertility on slopes of hills and mountains of western Tasmania. While it may be structurally and floristically similar to *Acacia melanoxylon* swamp forest (NAF), NAF is only mapped in lowland river flats mainly in the north-west. It intergrades with, and is replaced, by *Acacia dealbata* forest (NAD) on fertile substrates that have been cleared or cultivated, or by *A. mucronata* and *Leptospermum* species post-fire scrub and forest communities on less fertile substrates. Where *A. melanoxylon* is only locally dominant, especially where the understorey is

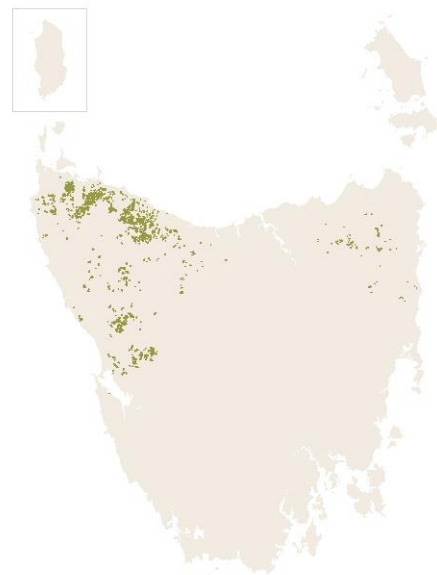
sclerophyllous, it is better mapped as the surrounding forest type than as NAR.

RFA mapping unit

NAR is equivalent to RFA BR.

Distribution

This unit predominantly occurs in the west and north-west, but small areas may be found on moist sites throughout the State.



Bioregional occurrence

BEL, FUR, KIN, TCH, TNS, TWE.

Site characteristics, habitat and ecology

This community grows mainly on soils of moderate to high fertility, often on fire-disturbed lowland slopes and spurs that previously supported callidendrous or thamnian rainforest or mixed forest (eucalypts over rainforest).

Vegetation composition and structure

Acacia melanoxylon is the dominant tree species, with *Eucalyptus obliqua*, *E. nitida* and *Nothofagus cunninghamii* sometimes present.

Most stands of this community consist of regrowth that forms a dense forest. A single age-class of *A. melanoxylon* is usually present, with the age relating to a major disturbance event. As the stand matures, the density of *A. melanoxylon* decreases and rainforest species become more prominent in the understorey and secondary tree layer. A prolonged period without fire (> 200 years) will result in the *A. melanoxylon* forests succeeding to pure rainforest. The long viability of *A. melanoxylon* seed enables this species to regenerate after disturbance to forest communities (e.g. rainforest) that have no living *A. melanoxylon* at the time they are burnt or otherwise disturbed.

The understorey is a mixture of wet sclerophyll shrubs (e.g. *Nematolepis squamea*, *Pomaderris apetala*, various species of *Leptospermum*) and rainforest species (including *Nothofagus cunninghamii*, *Atherosperma moschatum* and *Eucryphia lucida*). Ferns and occasionally *Gahnia grandis*, are the main groundcover species.

Floristic communities known to occur in this mapping unit

Other forest/scrub communities:

- D1 Riparian blackwood/paperbark forest; also occurs in **NAF & NME**
- D2 Riparian blackwood/wattle forest; also occurs in **NAF**
- D3 Riparian blackwood/*Olearia* forest
- D4 Riparian blackwood/dogwood forest; also occurs in **NAF**
- D5 Riparian blackwood/myrtle/dogwood forest; also occurs in **NAF & RMT**
- D6 Riparian blackwood rainforest; also occurs in **NAF & RMT**
- D7 Riparian blackwood/leatherwood rainforest; also occurs in **NAF & RMT**

Riparian communities (Daley & Kirkpatrick 2004)

- 14 *Acacia-Nothofagus-Atherosperma* woodland and forest over *Olearia* shrubland and *Dicksonia antarctica* fernland; also occurs in **NAF**
- 17 *Acacia melanoxylon-Nothofagus cunninghamii-Eucryphia lucida-Acacia mucronata* mossy-sedgy-ferny closed-scrub; also occurs in **NAF**

Acacia melanoxylon swamp forest (NAF)

General description

This community is typically a tall closed forest (> 30 m in height) dominated by *Acacia melanoxylon*, with a relatively open and variable understorey.



Dismal Swamp. Leanne Rabjohns.

Example locality

Dismal Swamp, between Smithton and Marrawah.

Distinguishing features and similar communities

NAF intergrades with, and is replaced by, *Acacia dealbata* dominated types (e.g. NAD) on fertile substrates that have been cleared or cultivated, or by *A. mucronata* and *Leptospermum* post-fire scrub and forest communities on less fertile substrates. On rises, while the community may be structurally, ecologically and floristically similar to NAF, it is mapped as *Acacia melanoxylon* forest (NAR). It is associated with other swamp forest communities (NLM and NME) from which it is distinguished by the prominence of *A. melanoxylon*. Where paddock trees of *A. melanoxylon* occur these are better mapped as Agricultural land (FAG).

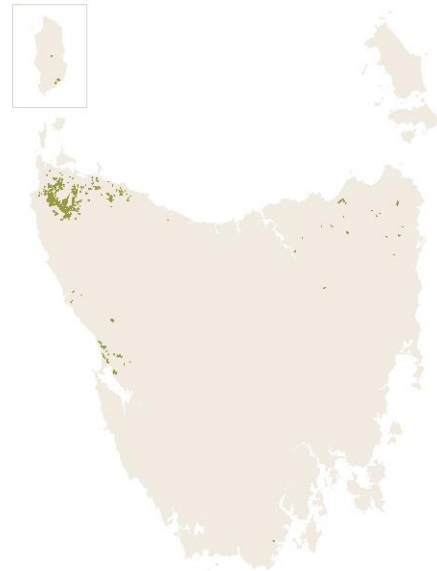
RFA mapping unit

NAF is equivalent to RFA BF

Distribution

Most occurrences are in the west and north-west of the State (e.g. Dismal and Welcome swamps) and on King Island, invariably on coastal plains at altitudes of less than 100 m. The community also occurs locally in the east, south-east and north-east (e.g.

Little Forester River), where most sites are less than 200 m altitude.



Bioregional occurrence

BEL, FUR, KIN, TNM, TNS, TSR, TWE.

Site characteristics, habitat and ecology

This community occurs extensively on alluvial flats that are generally inundated, and locally on poorly-drained flats. Drainage channels meandering through the swamp are characteristic.

Vegetation composition and structure

Acacia melanoxylon is the dominant tree species, with *Nothofagus cunninghamii* and other rainforest species co-occurring at some sites that have not had major disturbance for many years.

On more recently disturbed sites, *Melaleuca squarrosa*, *M. ericifolia* and one or more species of *Leptospermum* may be present. *Eucalyptus obliqua* and *E. brookeriana* occur in adjacent forests.

In successional advanced stands, the structure of the forest consists of mature, spreading rainforest species and large *Acacia melanoxylon* trees, often with conspicuous eucalypts. In younger stands, dense stands of paperbark and tea-tree rarely exceeding 20 m in height with an open understorey (due to the density of the canopy) are characteristic.

The composition and structure of the understorey tends not to be dense, although this depends on the site and disturbance history (e.g. flood, fire).

The most conspicuous components are the sedges, including *Gahnia grandis*, *G. sieberiana*, *Lepidosperma ensiforme*, *L. elatius* and *Carex appressa*, and the water ferns *Blechnum wattsi*, *B. minus* and *B. nudum*. Hummocks of *Sphagnum* species associated with myrtle logs occur in successional advanced forest.

Floristic communities known to occur in this mapping unit

Other forest/scrub communities:

- A1 Depauperate callidendrous swamp forest; also occurs in **NLM**
- A2 Callidendrous sassafras swamp forest; also occurs in **NLM**
- A3 Depauperate callidendrous fern swamp forest
- A4 Callidendrous myrtle swamp forest
- A5 Callidendrous fern swamp forest
- B1 Thamnic leatherwood swamp forest; also occurs in **NLM**
- B2 Thamnic fern swamp forest; also occurs in **NLM**
- B3 Thamnic horizontal swamp forest; also occurs in **NLM**
- B4 Thamnic leatherwood/*Trochocarpa* swamp forest; also occurs in **NLM**
- B5 Thamnic Celery Top pine swamp forest; also occurs in **NLM**
- C3 Coastal paperbark/*Carex* swamp forest; also occurs in **NME**
- C4 Coastal tea-tree/*Carex* swamp forest; also occurs in **NLM & NLE**
- C5 Coastal sassafras swamp forest; also occurs in **NLM**
- C6 Coastal myrtle swamp forest; also occurs in **NME**
- D1 Riparian blackwood/paperbark forest; also occurs in **NME & NAR**
- D2 Riparian blackwood/wattle forest; also occurs in **NAR**
- D6 Riparian blackwood rainforest; also occurs in **NAR & RMT**
- D7 Riparian blackwood/leatherwood rainforest; also occurs in **NAR & RMT**

Riparian communities (Daley & Kirkpatrick 2004)

- 14 *Acacia-Nothofagus-Atherosperma* woodland and forest over *Olearia* shrubland and *Dicksonia antarctica* fernland; also occurs in **NAR**
- 17 *Acacia melanoxydon-Nothofagus cunninghamii-Eucryphia lucida-Acacia mucronata* mossy-sedgy-ferny closed-scrub; also occurs in **NAR**

Allocasuarina littoralis forest (NAL)

General description

Allocasuarina littoralis forest is characterised by a very dense stratum (12–18 m high) of *A. littoralis*, sometimes overtopped by occasional eucalypts. Shrubs grow in gaps in the canopy and at the margins of the community. It includes patches of forest dominated by *Allocasuarina crassa* (e.g. Tasman Peninsula) or *A. duncanii* (e.g. on Snug Tiers). This mapping unit occurs in small patches.



Lime Bay Nature Reserve. Stephen Harris.

Example locality

Banca Road, near Winnaleah.

Distinguishing features and similar communities

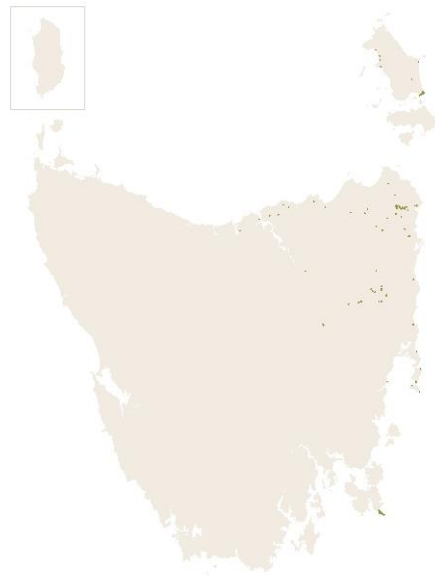
Distinctive, usually dominated by one species, with a sparse to dense sedgy understorey and heavy leaf litter. The community may occur as an understorey or in patches that are too small to map separately in dry sclerophyll *Eucalyptus* communities. Where *Allocasuarina verticillata* is dominant the vegetation is mapped as *Allocasuarina verticillata* forest (NAV).

RFA mapping unit

Not covered by RFA mapping.

Distribution

Allocasuarina littoralis forest occurs in the State's north-east, e.g. in the Great Musselroe River catchment, near Old Chum Dam. Small patches are also found throughout the drier parts of the State.



Bioregional occurrence

BEL, FUR, TNM, TNS, TSE.

Site characteristics, habitat and ecology

This community occurs locally on broad ridges or flats, and on undulating country. The soils normally have a high sand content and are well-drained, though on some sites the community grades into woodland or scrub growing on sites with impeded drainage. Fire frequency is > 30 years.

Vegetation composition and structure

This community is characterised by a very dense stratum (12–18 m high) of *Allocasuarina littoralis*, overtopped by occasional eucalypts (*Eucalyptus amygdalina*, *E. viminalis*). The density of *A. littoralis*, coupled with the presence of a deep litter layer, inhibits the development of an understorey, except under gaps in the canopy and at the margins of the community. The main shrub species include *Banksia marginata*, *Leptospermum scoparium* and *Lomatia tinctoria*. Any of the following may be scattered in the ground layer: *Pteridium esculentum*, *Diplarrena moraea*, *Gahnia grandis*, *Ehrharta distichophylla* and *Goodenia lanata*. *Lycopodium deuterodensum* is occasionally present.

Floristic communities known to occur in this mapping unit

No systematic botanical survey has been carried out for *Allocasuarina littoralis* dominated vegetation communities in Tasmania.

Additional communities (Forest Botany Manual)

DRY-LIT *Allocasuarina* low forest

Allocasuarina verticillata forest (NAV)

General description

Allocasuarina verticillata forest varies from pure stands with 100% litter layer or with little else but leaf litter beneath the trees, to woodlands in which umbrageous trees are interspersed in a species-rich sward dominated by tussock grasses. These woodlands and forests are on very dry sites. Some have emergent eucalypts or *Callitris rhomboidea*.



Closed forest facies. Flinders Island, Bass Strait. Stephen Harris.

Example locality

Waterhouse Protected Area.

Distinguishing features and similar communities

The dominant tree, *Allocasuarina verticillata*, distinguishes this community and is distinctive because of the rounded forms to the trees. This community has a propensity to form dense stands.

The community may grade into *Callitris rhomboidea* dominated forest (NCR) in some parts of eastern Tasmania. It may also include emergents from adjacent eucalypt forest.

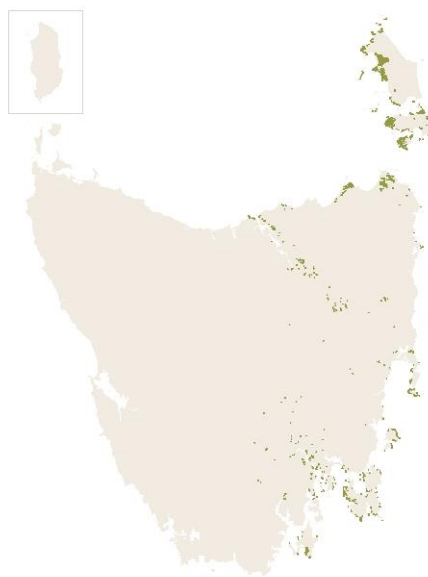
RFA mapping unit

NAV is equivalent to RFA AV.

Distribution

Allocasuarina verticillata forest occurring inland and woodland is widespread in dry areas of eastern Tasmania and on the eastern Bass Strait islands at altitudes generally below 500 m, and most commonly near the coast. In fact, a narrow belt of

NAV grows on the coastward margin around much of the eastern and northern Tasmanian coast where the native vegetation sequence has not been destroyed. The most extensive occurrences are on the eastern Bass Strait islands and eastward of Waterhouse Island in north-east Tasmania.



Bioregional occurrence

BEL, FUR, TNM, TSE, TSR.

Site characteristics, habitat and ecology

Allocasuarina verticillata forest usually grows on heavy, black clay soils derived from dolerite on north-facing slopes in some of the lowest rainfall country in the midlands and south-east Tasmania. The most extensive examples of NAV however, are on calcareous or siliceous sand and gravel in north-east Tasmania and the Bass Strait islands. In the south east it is characteristic of dry rocky dolerite slopes adjacent to *Eucalyptus pulchella* and *E. globulus* forests.

Vegetation composition and structure

A. verticillata forest varies from an almost closed forest, with little else but leaf litter beneath the trees, to a woodland in which spreading trees are interspersed in a species-rich sward dominated by tussock grasses.

A. verticillata is more drought-resistant than the eucalypts, and can form pure stands on the driest sites in Tasmania. *Acacia mearnsii*, *A. dealbata*, *Dodonaea viscosa* and *Bursaria spinosa* are common understorey shrubs, becoming dense in the absence of fire. Emergent eucalypts can occur up to a density of 5%.

Floristic communities known to occur in this mapping unit

Dry sclerophyll forests and woodlands:

Ia Coastal *Allocasuarina* low forest; also occurs in **DVC**

Ib Inland *Allocasuarina verticillata* low forest

Ic Island *Allocasuarina* low forest

Grasslands and grassy woodlands:

T8 *Austrodanthonia* spp.-*Poa rodwayi*-*Agrostis aemula* tussock grassland; also occurs in **GRP, GCL, GTL & DGL**

Banksia serrata woodland (NBS)

General description

These woodlands are dominated by *Banksia serrata* and may be open and heathy, as in Wingaroo Nature Reserve and parts of Rocky Cape National Park and the Shakespeare Hills, or grow in dense stands, as around the Sisters Beach area. It occurs mainly on flat areas or subdued slopes and some hill slopes.



Wingaroo Nature Reserve, Flinders Island. Stephen Harris.

Example localities

Sisters Beach, and the start of the track at the end of Irbys Road, Rocky Cape.

Distinguishing features and similar communities

The community is distinguished by the presence of *Banksia serrata* as the canopy dominant, in either a woodland or forest density.

RFA mapping unit

NBS is equivalent to RFA BS.

Distribution

The community grows in a few small areas near Sisters Beach, the northern end of the Dip Range and Shakespeare Hills on the north-west coast. A very small stand grows in the Wingaroo Nature Reserve on Flinders Island. Note that for this distribution image the symbology has been emphasised to improve visibility of community distribution.



Bioregional occurrence

FUR, KIN.

Site characteristics, habitat and ecology

The community occurs on peat soils on slopes underlain by quartzite, on sand plains near the Sisters Beach township or on granite-derived siliceous soils as at Wingaroo. Almost all sites face north or west and are exposed to the prevailing winds; they tend to have frequent fires.

Vegetation composition and structure

This community is dominated by *Banksia serrata*, but *Eucalyptus nitida* may form a sparse canopy. East of Sisters Beach, *E. nitida* and a little *E. ovata* overtop *B. serrata*, *B. marginata*, *Monotoca glauca* and *Acacia melanoxylon*. Further east, the canopy emergents are *E. nitida*, *E. obliqua* and *E. viminalis*, but *B. serrata* does not persist far into this tall forest.

B. serrata trees may reach 8 m in height, with thick, twisted trunks, which are often scarred where branches have broken off. In any stand, tree ages vary from seedlings to old growth.

Banksia serrata woodland has a heathy understorey that includes various graminoids and *Allocasuarina monilifera*, *Philothea virgata*, *Dillwynia glaberrima* and *Leptospermum scoparium*. *Xanthorrhoea australis* is sometimes present.

On the sand plains, coastal heathlands show very high diversity. *Leptospermum glaucescens* and/or *Monotoca glauca* may dominate tall heathlands. *Acacia terminalis* and *M. glauca* in some areas co-dominate a shrub layer, with little more than *Pteridium esculentum* underneath. There is an abrupt boundary between *B. serrata* woodland (NBS) and the adjacent *Gymnoschoenus sphaerocephalus*–*Melaleuca squamea* moorlands (MBS). Transition into *E. obliqua*-dominated wet forest is more gradual.

Floristic communities known to occur in this mapping unit

Other forest/scrub communities:

8 *Banksia serrata* open-forest/scrub

Bursaria-Acacia woodland (NBA)

General description

The community is characterised by scattered small (< 10 m) trees of *Bursaria spinosa*, *Acacia dealbata*, *A. mearnsii*, *A. melanoxyton*, *A. verticillata*, *Dodonaea viscosa* and other small trees and shrubs. These form a sparse to dense layer over a grassy sward dominated by *Themeda triandra* or *Austrodanthonia* species.



Near Orford. Stephen Harris.

Example locality

Lisdillon Hills.

Distinguishing features and similar communities

NBA is distinguished from Regenerating cleared land (FRG) by being dominated by small trees such as *Bursaria spinosa*, *Acacia* spp. and/or *Dodonaea viscosa* and including native grasses in the ground layer.

NBA is distinguished from native grassland units by the prominence of a small tree layer of > 5% cover.

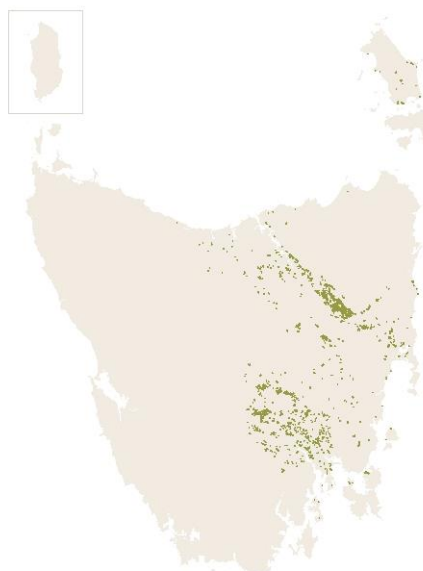
Acacia dealbata can be present as a minor component of *Bursaria-Acacia* woodland (NBA), but where this species forms a dominant canopy it is always mapped as NAD.

RFA mapping unit

NBA is not covered by RFA mapping.

Distribution

NBA grows on small hills and lower slopes marginal to grazing land, particularly in rural districts in drier areas of the east and Midlands.



Bioregional occurrence

BEL, FUR, TCH, TNM, TNS, TSE, TSR.

Site characteristics, habitat and ecology

The community occurs on dry slopes at low altitude (< 600 m) often on dolerite or basalt, and generally in areas that have been ploughed or disturbed.

Successional pathway

Bursaria-Acacia woodland (NBA) occupies sites that were previously *Eucalyptus viminalis* and *E. amygdalina* woodland and forest. The virtual elimination of eucalypts from these sites resulted from rural tree decline and/or tree removal. Recolonisation by *Bursaria spinosa*, *Acacia dealbata*, *A. mearnsii*, *A. melanoxyton*, *A. verticillata*, *Dodonaea viscosa* and other small trees and shrubs has given rise to current NBA areas. NBA may be transitional *Acacia dealbata* forest (NAD). Recovery to *Eucalyptus viminalis* grassy forest and woodland (DVG) or to *Eucalyptus amygdalina* forest and woodland on dolerite (DAD) may occur where a eucalypt canopy develops.

Vegetation composition and structure

Scattered small trees of *Bursaria spinosa*, *Acacia dealbata*, *A. mearnsii*, *A. melanoxylon*, *A. verticillata*, *Dodonaea viscosa* subsp. *spatulata*, and other small trees and shrubs form a sparse to dense layer over a grassy sward dominated by *Themeda triandra*, *Lomandra longifolia* or *Austrodanthonia* species. Other grasses, herbs and small heathy shrubs may occur, as may scattered trees of *Eucalyptus viminalis*, *E. pauciflora*, *E. amygdalina* and *E. globulus*.

The floristic complexity can vary enormously. Some sites reflect a disturbed management history and can be depauperate and weedy. At other sites NBA may be floristically diverse and can include threatened species that are characteristic of *Themeda* grassland.

Floristic communities known to occur in this mapping unit

No systematic botanical survey has been carried out for non-coastal scrub communities in Tasmania.

Grasslands and grassy woodlands:

- I7 *Eucalyptus viminalis*/*Allocasuarina verticillata*–*Acacia mearnsii* grassy; also occurs in **DVG**
- T6 *Themeda triandra*–*Austrostipa stiposa*–*Chrysocephalum apiculatum* tussock grassland; also occurs in **GTL**
- T7 *Themeda triandra*–*Veronica gracilis*–*Solenogyne* spp. tussock grassland; also occurs in **GTL**

Additional communities (Forest Botany Manual)

Dry sclerophyll forests and woodlands:

- DRY–gVIM Grassy *Eucalyptus viminalis* woodland; **NBA** has close floristic affinities with the understorey of this community

Callitris rhomboidea forest (NCR)

General description

This community ranges from dense stands with pure *Callitris rhomboidea* in the canopy to woodlands and forests where *C. rhomboidea* is a major component of the canopy, sometimes co-dominant with *Allocasuarina verticillata* and such eucalypts as *E. viminalis*, *E. nitida*, *E. pulchella* and *E. tenuiramis*. The forest may be dominated by trees up to 30 m in height and can have a shrubby, grassy or heathy understorey.



Freycinet National Park. Sophie Underwood.

Example locality

Freycinet National Park.

Distinguishing features and similar communities

The distinguishing feature of this community is the presence of *Callitris rhomboidea*. *C. oblonga* is the only other conifer that occurs in dry forests in eastern Tasmania, but is mainly riparian and is shorter than *C. rhomboidea*. It is not mapped separately.

RFA mapping unit

NCR is equivalent to RFA CR.

Distribution

It is found from Cape Pillar to the Denison River on the east coast, and also in the Furneaux Group. It occurs from sea level to 600 m in altitude.



Bioregional occurrence

FUR, TSE.

Site characteristics, habitat and ecology

Callitris rhomboidea is a fire-sensitive species, generally confined to infrequently burned vegetation in eastern Tasmania. It is a garden escapee in native vegetation at Sisters Beach, Moorinna and Margate. *C. rhomboidea* is tolerant of a wide range of soil types, but does not grow in poorly-drained soil.

Vegetation composition and structure

C. rhomboidea is the dominant tree species in both forest and woodland, but is also a major understorey component of eucalypt forest (and occasionally occurs in Coastal heathland SCH).

C. rhomboidea is drought-resistant and establishes readily in moderately shaded, undisturbed areas. The understorey may be heathy, shrubby or grassy.

Dense stands are now uncommon, but there are examples on the east coast of Flinders Island, on the eastern shelf of Maria Island and on talus slopes at Cape Bernier.

C. rhomboidea may co-occur with *Eucalyptus ovata*, *E. rodwayi*, *E. globulus*, *E. amygdalina*, *E. tenuiramis*, *E. nitida*, *E. regnans*, *E. obliqua*, *E. amygdalina* and *E. viminalis*. A variety of species dominate the small-tree layer, including *Bursaria spinosa*, *Allocasuarina verticillata*, *A. monilifera*, *Dodonaea viscosa*, *Leptospermum laevigatum*, *Bedfordia salicina* and *Cassinia aculeata*.

Floristic communities known to occur in this mapping unit

Other forest/scrub communities:

- 4 *Callitris rhomboidea*–*Leptospermum* spp. closed-forest/scrub; also occurs in Eastern scrub on dolerite (SED)
- 5 *Callitris rhomboidea*–*Bedfordia salicina* closed-forest/scrub

Leptospermum forest (NLE)

General description

One or more of *Leptospermum lanigerum*, *L. scoparium*, *L. glaucescens* or *L. nitidum* dominates *Leptospermum* forests (5–10 m tall) with semi-closed or closed canopies. Mid- and ground layers may be sparsely shrubby and sedgy, or the ground may be bare or covered by deep litter. Coastal **NLE** has *L. glaucescens* and sometimes *L. scoparium* in the canopy, and may be diverse and uneven in height where it has suffered patchy effects of fire or windthrow. Inland **NLE** below about 400 m altitude may also be uneven, with up to three *Leptospermum* species sharing the canopy with *Banksia marginata* and sometimes *Monotoca glauca* and *Acacia mucronata* over *Bauera rubioides* and *Gahnia grandis*. Highland **NLE** is usually closed-canopy *L. lanigerum* (sometimes *L. scoparium*) and straggling *Banksia* with little understorey. Short, dense and tangled highland forests in the west may be dominated by *L. nitidum*, with some *Eucryphia milliganii*, *Nothofagus cunninghamii*, *Agastachys odorata* and *Cenarrhenes nitida*.



Inland highland facies. Scotts Peak Road. Nepelle Temby.

Example localities

Slopes below Moonlight Flats (Southern Ranges); coastal form at Rocky Boat Harbour (south coast); Ralfs Falls track in the north-east, near Ringarooma.

Distinguishing features and similar communities

Tall *Leptospermum glaucescens* may be the dominant mid-storey species in *Eucalyptus nitida* wet forest **WNU**, but emergent eucalypts are sparse or

absent from **NLE**. On ridge crests in the west and south-west, **WNU** grades into **NLE** between 600 m and 750 m altitude. Coastal forms of both **NLE** and **WNU** may be diverse or have an understorey dominated by *Gahnia grandis* and/or *Lepidosperma ensiforme* (coastal **NLE** lacks *Eucalyptus nitida*). **NLA** is short *Leptospermum* forest mapped around Queenstown and distinguished from **NLE** by its clearly defined floristics: *L. scoparium* and *Acacia mucronata* dominate, often with a dense and tangled structure. *Nothofagus–Leptospermum* short rainforest (**RML**), which has strong rainforest affinities, has co-dominant *Nothofagus cunninghamii* and species of *Leptospermum*, and typically grades into **NLE** with altitude.

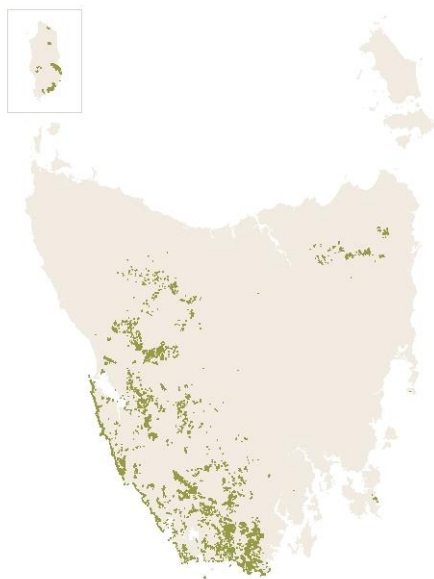
Leptospermum forest dominated by *L. nitidum* occurs above about 400 m in parts of south-west Tasmania and around the West Coast Range, where it has affinities with western rainforests and rainforest scrubs, particularly those that include *Athrotaxis selaginoides*. **NLE** near south-west rivers has clear boundaries with riverine rainforest and *Leptospermum lanigerum–Melaleuca squarrosa* swamp forest (**NLM**) in which *Melaleuca squarrosa* is important. The coastal form of **NLE** may grade into Coastal heathland (**SCH**) with similar floristics, but **NLE** is taller and usually has a closed or nearly closed canopy, leading to much lower diversity. Scrub dominated by *Leptospermum* species (*Leptospermum lanigerum* scrub (**SLL**), *Leptospermum scoparium* heathland and scrub (**SLS**), *Leptospermum glaucescens* heathland and scrub (**SLG**)) is generally less than 5 m in height, while **NLE** grows to 10 m. **SLL**, **SLS** and **SLG** can be successional to **NLE**. **NLM** is similar in height to **NLE**; there is usually more *Melaleuca squarrosa* in **NLM**.

RFA mapping unit

NLE would often be classed as a non-forest community in the RFA, however some facies may occur in RFA L.

Distribution

NLE is widespread, but with its stronghold in the west and south of the state. **NLE** is mapped up to 1250 m in elevation in the central highlands; elsewhere it is usually below 950 m.



Floristic communities known to occur in this mapping unit

Other forest/scrub communities:

C4 Coastal tea-tree–*Carex* swamp forest

E1 Depauperate montane tea-tree forest

- 1 *Leptospermum nitidum* closed-forest/scrub; also occurs in SRF, SSW, SWW & RML
- 2 *Leptospermum glaucescens*–*L. scoparium* closed-forest/scrub; also occurs in *Leptospermum glaucescens* heathland and scrub (SLG)

Bioregional occurrence

BEL, KIN, TCH, TNS, TSE, TSR, TWE.

Site characteristics, habitat and ecology

Leptospermum forests grow on moderately fertile soils in sheltered sites in high rainfall areas. Substrates vary from stable sand dunes to sedimentary rocks. Some forms of NLE grow in south-west Tasmania where quartzite mountain slopes meet the plains and soil has accumulated, and also on the better-drained parts of swamps round the big south-west rivers. *Leptospermum* forests also grow on the slopes below sandstone plateaus and on ascending ridge crests up to about 800 m altitude. *L. lanigerum* prefers relatively fertile, sheltered, well-watered and sometimes poorly-drained sites, *L. glaucescens* grows on skeletal soils and *L. scoparium* prefers good drainage.

Vegetation composition and structure

Below mature *Leptospermum* forest, the understorey may be sparse with a few shrubs, sedges, bryophytes and ferns. Forests may be fringed by bands of small *Leptospermum*, *Gahnia grandis* and low shrubs.

Leptospermum lanigerum–Melaleuca squarrosa swamp forest (NLM)

General description

Swamp forests dominated by *Leptospermum lanigerum* and/or *Melaleuca squarrosa* are common in the north-west and west and occur occasionally in the north-east and east, where *L. lanigerum* usually predominates. There are also extensive tracts on alluvial flats of the major south-west rivers. The forests are dominated by various mixtures of *L. lanigerum* and *M. squarrosa*, but with varying lesser amounts of *Acacia* species. Rainforest species are also present. Trees are usually > 8 m in height.



Lake Shelf, west of Lots Wife, Mt Anne area. Sib Corbett.

Example localities

Montagu and Duck River catchments in north- west Tasmania.

Distinguishing features and similar communities

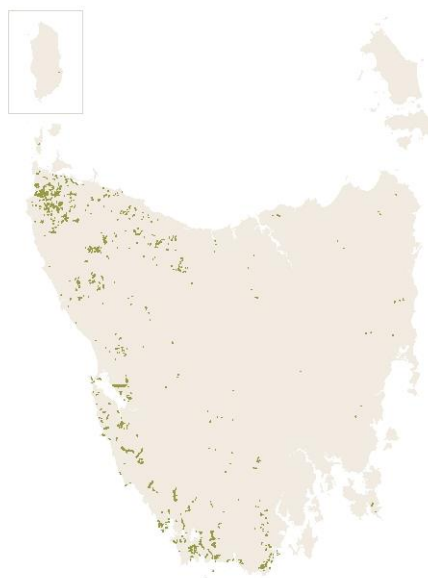
The forests are floristically similar to, and intergrade with, *Acacia melanoxylon* swamp forests (NAF). The forests also intergrade in the north-west with the predominantly coastal *Melaleuca ericifolia* swamp forest (NME). NLM is taller than *Leptospermum* with rainforest scrub (SRF) and generally lacks a scrubby understorey. Some of these swamp forests have younger successional growth stages that may be described in the section on scrub, heathland and coastal complexes. Refer, in particular, to the descriptions for *Leptospermum lanigerum* scrub (SLL), *Melaleuca squarrosa* scrub (SMR) and *Banksia marginata* wet scrub (SBM).

RFA mapping unit

NLM is equivalent to RFA L.

Distribution

Common in the north-west and west including the World Heritage Area (WHA), this community occurs more sporadically elsewhere in the state.



Bioregional occurrence

BEL, FUR, KIN, TCH, TNS, TSE, TSR, TWE.

Site characteristics, habitat and ecology

These forests are characteristically found in the high-rainfall area of the west and north-west on low-lying swampy flats and river terraces. There are mapped occurrences also at higher altitudes in the WHA, and in the north-east, again in swampy areas of higher rainfall. The floristic composition of the forests depends on the elapsed time since broad-scale disturbance, and on soil fertility, drainage and site elevation. While the canopies of the forests may be even-aged – indicating a single regeneration event – there is also some evidence that the dominants are able to regenerate via gap-phase replacement to give continuous regeneration in long-undisturbed stands.

Vegetation composition and structure

The dominant species are *Leptospermum lanigerum* and *Melaleuca squarrosa*. The understorey is locally very variable in species composition.

Floristic communities known to occur in this mapping unit

Other forest/scrub communities:

- A1 Depauperate callidendrous swamp forest; also occurs in **NAF**
- A2 Callidendrous sassafras swamp forest; also occurs in **NAF**
- B1 Thamnic leatherwood swamp forest; also occurs in **NAF**
- B2 Thamnic fern swamp forest; also occurs in **NAF**
- B3 Thamnic horizontal swamp forest; also occurs in **NAF**
- B4 Thamnic *Trochocarpa* swamp forest; also occurs in **NAF**
- B5 Thamnic celery top pine swamp forest; also occurs in **NAF**
- B6 Thamnic Huon pine swamp forest; also occurs in **RHP**
- C4 Coastal tea-tree/*Carex* swamp forest; also occurs in **NAF & NLE**
- C5 Coastal sassafras swamp forest; also occurs in **NAF & NME**
- F2 Depauperate tea-tree/paperbark scrub forest; also occurs in **NME**

Buttongrass moorland:

- B13 Wet copses; also occurs in **MBS, SWW, WNL, DOV & SMR**

Riparian communities (Daley & Kirkpatrick 2004)

- 5 *Melaleuca squarrosa*–*Leptospermum lanigerum* heathy-ferny-sedgy closed scrub; also occurs in **SMR**

Leptospermum scoparium-Acacia mucronata forest (NLA)

General description

This community is a dense, closed-canopy, dwarf forest generally 5–8 m tall when mature. It is characterised by *Leptospermum scoparium* forming 50–95% of the canopy, but most commonly in nearly equal proportions with *Acacia mucronata*. **NLA** includes all seral stages from the most recent burns to forest probably 30–50 years old.



Lyell Highway, near Queenstown. Nepelle Temby.

Example locality

Western slopes of Mount Huxley.

Distinguishing features and similar communities

The community is the result of severe and repeated fires and has been mapped in recovery stages from short (< 1 m) scrub to mature *Leptospermum* short forest up to 8 m high. **NLM** is a generalised tall *Leptospermum* class, and is variable, but usually has *Melaleuca squarrosa* as an important component. In contrast, *M. squarrosa* is seen only on the fringes of **NLA**. **NLA** is defined as having no eucalypt canopy, although it appears much of the present area of **NLA** was once *Eucalyptus nitida* over tea-tree (**WNL**). There are transitions from **NLA** to **WNL** in a few places, and also into Western wet scrub (**SWW**), which is more diverse and variable than **NLA** and contains *E. nitida* saplings. **NLM** is taller than *Leptospermum* with rainforest scrub (**SRF**) and generally lacks a scrubby understorey. *Leptospermum scoparium* heathland and scrub (**SLS**) may be transitional to **NLA** and Western subalpine scrub (**SSW**) may develop into **NLA** in the

absence of fire. **NLE** is short *Leptospermum* forest without appreciable *Acacia mucronata* or *A. melanoxylon*, while *A. mucronata* may make up to 50% of **NLA** and *A. melanoxylon* is important in **NLA** transitional forms. Some forms of **RML** have similarities with **NLA**, but lack *A. mucronata* and *A. melanoxylon*, and are more diverse, with strong rainforest affinities. **RML** in all its forms is a long-undisturbed community.

RFA mapping unit

Some facies of **NLA** may occur in RFA **L**.

Distribution

NLA is mapped on both sides of the West Coast Range as far north as Dundas and westwards across the Henty Surface nearly to the coast. Its distribution reaches the western border of the Tasmanian Central Highlands Bioregion.



Bioregional occurrence

TCH, TWE.

Site characteristics, habitat and ecology

NLA occurs in frequently burnt areas up to altitudes of generally about 450 m on the west coast. The substrates are generally weathered Cambrian volcanic rocks and siliceous rocks that have developed peat soils, though repeated burning has

rendered these soils skeletal in most areas. Most **NLA** grows on moderate slopes.

Vegetation composition and structure

This community appears to result from frequent burning over the last 100 years. The original vegetation may have been *Eucalyptus nitida* wet forest and possibly also *E. nitida* mixed forest. In some places, Huon pine stumps and logs have been found beneath the tea tree, so it is likely that some of the original vegetation was rainforest, like that preserved at Newell Creek.

NLA is a dense, closed-canopy, dwarf forest generally 6–8 m tall when mature. **NLA** is characterised by *Leptospermum scoparium* forming 50–95% of the canopy, but most commonly *L. scoparium* is in nearly equal proportion to *A. mucronata*. *A. melanoxylon* may be scattered in the canopy. There are generally no eucalypts, but columnar tops of *L. glaucescens* may be seen as emergents along some ridgetops. Other species sometimes seen in the canopy in mature forest are *Banksia marginata* and *M. squarrosa*, but these are not common. *Nematolepis squamea* is usual as a sub-canopy species with *Monotoca glauca* and sometimes occasional *Dicksonia antarctica* and *Cenarrhenes nitida*. The ground layer may be very sparse, generally with *Blechnum wattsi* and occasionally *Dicksonia antarctica*, and also *Bauera rubioides*, *Calorophus elongatus*, *C. erostris*, *Gahnia grandis*, tangled *Gleichenia dicarpa* and *Sticherus tener*. Shrubs include *Olearia stellulata*, *O. personioides* and occasionally *Oxylobium arborescens*, *Telopea truncata*, *Cenarrhenes nitida*, *Leptecophylla juniperina* and *Pimelea linifolia* (west coast form).

All stages in the development of **NLA** are seen on the Strahan Airstrip and Lake Margaret roads. Patch burns in mature forest are uneven in texture, with small *Banksia marginata* and *Acacia mucronata* over *Sprengelia incarnata*, *Gleichenia dicarpa*, *Bauera rubioides* and *Gahnia grandis*. *Leptospermum* regrowth 1–2 m high consists of thick *Leptospermum scoparium*, *L. glaucescens*, *Acacia mucronata*, *Melaleuca squarrosa* and *Olearia stellulata* with *Gahnia grandis*, *Baloskion tetraphyllum* and *Lepidosperma filiforme*. The openings are rich in sedges and monocotyledons. Mounds with improved drainage within burnt *Leptocarpus tenax* moorland or disturbed *Baloskion tetraphyllum* hillsides may be more diverse.

There may be *Bauera rubioides*, *Acacia mucronata* and *Leptospermum scoparium* seedlings, *Monotoca glauca*, *M. submutica*, *Leptecophylla juniperina*, *Phyllocladus aspleniifolius*, *Atherosperma moschatum*, *Oxylobium arborescens*, *Dillwynia glaberrima*, *Nematolepis squamea*, *Epacris impressa* and *E. lanuginosa*, *Sprengelia incarnata* and *Comesperma retusum* plus ferns, sedges and monocotyledons.

As shelter, moisture and probably fertility increase, the forest becomes dominated by *Acacia melanoxylon*, with *Leptospermum scoparium* and *Nematolepis squamea* still important, and an intermediate or ground layer of *Eucryphia lucida*, *Atherosperma moschatum*, *Anopterus glandulosus* and ferns. Where *Nothofagus cunninghamii* appears, there is a transition to rainforest communities.

Floristic communities known to occur in this mapping unit

Other forest/scrub communities:

F1 Depauperate tea-tree scrub forest; also occurs in **SWR & SSK**

F3 Tea-tree mesophytic scrub forest; also occurs in **SWR**

Melaleuca ericifolia swamp forest (NME)

General description

The community typically occurs as pure or almost pure stands of *Melaleuca ericifolia* with trees generally 10–12 m in height (but reaching 20 m) forming a dense canopy over a simple, sedgy understorey. It includes all successional growth stages.



Near Stanley. Micah Visoiu.

Example locality

The Nook Swamp, King Island.

Distinguishing features and similar communities

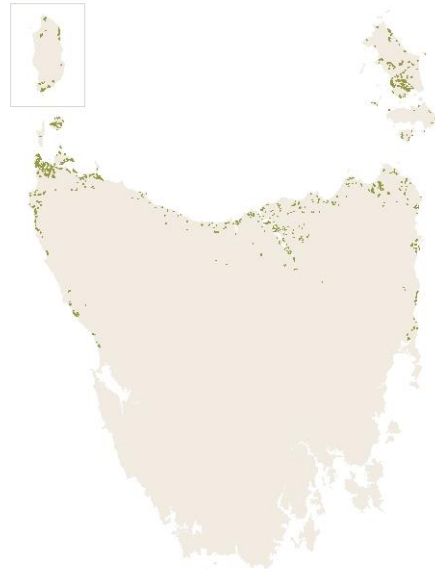
The community is characterised by a dense, typically even-aged canopy of *Melaleuca ericifolia* over a ground layer of sedges, grasses and sometimes bare ground. The dominant species distinguishes this community. Small patches of shorter (< 8 m) but pure *M. ericifolia* are considered to be immature *M. ericifolia* and are mapped as NME.

RFA mapping unit

NME is equivalent to RFA ME.

Distribution

The community is generally restricted to coastal or near-coastal areas, particularly in the north-west and Bass Strait Islands, but also in the north-east (e.g. Great Forester River).



Bioregional occurrence

BEL, FUR, KIN, TNM, TNS, TSE, TWE.

Site characteristics, habitat and ecology

Dense stands of *Melaleuca ericifolia* commonly occur as narrow strips fringing saltmarsh, lagoons and rivers. They occupy a particular edaphic zone that is frequently poorly-drained or intermittently-waterlogged. Stands often appear even-aged, but there may be regeneration in mature stands as a result of a tree falling or wind-throw gaps. Old-growth stands that demonstrate a long history of regeneration in the absence of catastrophic disturbance are very rare.

Vegetation composition and structure

The dominant tree species is *M. ericifolia*, with *Acacia melanoxylon* (in north-west swamps) and *Leptospermum lanigerum* occasionally subdominant or dominant in small areas of disturbance. Emergent eucalypts (mainly *Eucalyptus ovata* and *E. brookeriana*) may be subdominant to sparse.

The understorey is generally simple and devoid of shrubs because of low light levels and/or frequent flooding. It is most often dominated by *Carex appressa* and/or *Gahnia grandis*, and *Blechnum watsii* and *Lepidosperma elatius* may be present. Weeds and other herbaceous species may be present, depending on the level of disturbance.

Floristic communities known to occur in this mapping unit

Other forest/scrub communities:

- C1 Coastal *Poa* swamp forest
- C2 Depauperate coastal paperbark swamp forest
- C3 Coastal paperbark–*Carex* swamp forest; also occurs in **NAF**
- C6 Coastal myrtle swamp forest; also occurs in **NAF & NLM**
- D1 Riparian blackwood–paperbark forest; also occurs in **NAF & NAR**
- F2 Depauperate tea-tree/paperbark scrub forest; also occurs in **NLM**

Riparian communities (Daley & Kirkpatrick 2004)

- 4 *Melaleuca ericifolia*–*Lomandra longifolia*–*Juncus kraussii* estuarine forest and scrub

Subalpine *Leptospermum nitidum* woodland (NLN)

General description

Subalpine *Leptospermum nitidum* woodland (NLN) is defined by the presence of *Leptospermum nitidum* as small, umbrageous trees scattered over subalpine *Melaleuca squamea* sedgy moorland that may include *Gymnoschoenus sphaerocephalus* and *Lepidosperma filiforme*. *Eucalyptus coccifera* and *Athrotaxis cupressoides* may occur as emergents. Above the upper limits for *Melaleuca*, umbrageous *Leptospermum nitidum* may be scattered over moorland. NLN is restricted to flats and gentle slopes on quartzite and siliceous flat-lying sediments in subalpine areas of western and south-western Tasmania, including sandstone shelves in the Southern Ranges.



Lake Sydney, Southern Ranges. Keith Corbett.

Example locality

Plateau east of Adamsons Peak.

Distinguishing features and similar communities

The NLN community is distinguished from other mapping units by the presence of umbrageous *Leptospermum nitidum* emergent over western subalpine sedgy moorland or sedge/scrub. *Eucalyptus coccifera*, and in a few places *Athrotaxis cupressoides* may also form scattered emergents.

The understorey (usually <1m high) may have floristic similarities with SSW and SMM or be dominated by *Eurychorda complanata*.

Subalpine shrubland with mallee-form *Nothofagus cunninghamii*, dwarf *Eucryphia* species and *Eucalyptus vernicosa* with *Leptospermum nitidum* over a tangle of *Richea milliganii* and *R. scoparia* are included in RSH.

The absence of *Eucalyptus nitida* differentiates NLN from Western wet scrub (SWW).

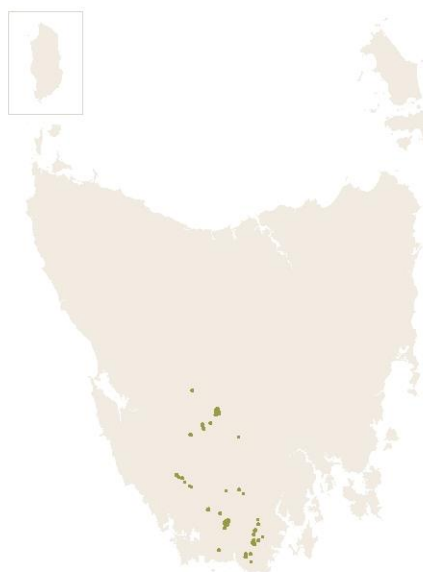
NLN may occur in mosaics with *Athrotaxis selaginoides* rainforest scrub (RKS) or *Athrotaxis selaginoides*–*Nothofagus gunnii* short rainforest (RKF).

RFA mapping unit

NLN is mainly a woodland community; some facies may occur in RFA L or PP depending on the prevalence of secondary species.

Distribution

NLN is an uncommon subalpine community, found above 700m on ledges and moorland fringes on some western and south-western mountains where fire has been absent for at least 50 years. Note that for this distribution image the symbology has been emphasised to improve visibility of community distribution.



Bioregional occurrence

TSR, TWE.

Site characteristics, habitat and ecology

NLN is restricted to gentle slopes on infertile soils over siliceous, flat-lying rocks in high-rainfall subalpine areas of western Tasmania, including sandstone shelves in the Southern Ranges.

It appears that at least 50 fire-free years are needed for *Leptospermum nitidum* to develop the characteristic “umbrella” forms.

Vegetation composition and structure

This subalpine community has dominant *Leptospermum nitidum* trees (4-10 m). The understorey is typically *Melaleuca squamea* and often *Persoonia gunnii* over a mixture of graminoids and small heath plants, which usually include *Erychorda complanata* and *Empodisma minus* plus any of *Astelia alpina*, *Milligania* spp., *Oreobolus* spp., *Dracophyllum milliganii*, *Isophysis tasmanica*, *Carpha alpina*, *Anemone crassifolia*, *Leucopogon milliganii*, *Planocarpa petiolaris*, *Bauera rubioides* and *Sprengelia incarnata*.

Orites acicularis may occur on more nutrient-rich sites, while *Eucryphia milliganii* is typically found on quartzite and may have closer affinities with **RKS** thickets in a mosaic with **NLN**.

On fertile sites (usually underlain by Permian mudstones) *Eucalyptus coccifera* may occur as scattered emergents and there may be a few *Athrotaxis cupressoides*.

Floristic communities known to occur in this mapping unit

No systematic botanical survey has been carried out for *Leptospermum nitidum* dominated vegetation communities in Tasmania, and no equivalent floristic communities identified.