The Vegetation Communities

Rainforest and related scrub

Eucryphia lucida
## Rainforest and related scrub

<table>
<thead>
<tr>
<th>Community (Code)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athrotaxis cupressoides-Notofagus gunnii short rainforest (RPF)</td>
<td>7</td>
</tr>
<tr>
<td>Athrotaxis cupressoides open woodland (RPW)</td>
<td>9</td>
</tr>
<tr>
<td>Athrotaxis cupressoides rainforest (RPP)</td>
<td>11</td>
</tr>
<tr>
<td>Athrotaxis selaginoides-Notofagus gunnii short rainforest (RKF)</td>
<td>13</td>
</tr>
<tr>
<td>Athrotaxis selaginoides rainforest (RKP)</td>
<td>15</td>
</tr>
<tr>
<td>Athrotaxis selaginoides subalpine scrub (RKS)</td>
<td>17</td>
</tr>
<tr>
<td>Coastal rainforest (RCO)</td>
<td>19</td>
</tr>
<tr>
<td>Highland low rainforest and scrub (RSH)</td>
<td>21</td>
</tr>
<tr>
<td>Highland rainforest scrub with dead Athrotaxis selaginoides (RKX)</td>
<td>23</td>
</tr>
<tr>
<td>Lagarostrobos franklinii rainforest and scrub (RHP)</td>
<td>25</td>
</tr>
<tr>
<td>Notofagus-Atherosperma rainforest (RMT)</td>
<td>27</td>
</tr>
<tr>
<td>Notofagus-Leptospermum short rainforest (RML)</td>
<td>29</td>
</tr>
<tr>
<td>Notofagus-Phyllocladus short rainforest (RMS)</td>
<td>31</td>
</tr>
<tr>
<td>Notofagus gunnii rainforest scrub (RFS)</td>
<td>33</td>
</tr>
<tr>
<td>Notofagus rainforest (undifferentiated) (RMU)</td>
<td>35</td>
</tr>
<tr>
<td>Rainforest fernland (RFE)</td>
<td>36</td>
</tr>
</tbody>
</table>

### General description

Tasmanian rainforest is structurally and floristically variable and it is defined by the presence of species of any of the genera *Notofagus*, *Atherosperma*, *Eucryphia*, *Athrotaxis*, *Lagarostrobos*, *Phyllocladus* or *Diselma*. Occasionally some understorey species, for example *Anodopetalum biglandulosum* or *Richea pandanifolia*, may occur as dominants (Jarman & Brown 1983). Much rainforest falls within the structural definition of closed-forest (Specht 1970) but some types, such as scrub rainforest and subalpine rainforests, do not fit this category.

Rainforest occurs from sea level to about 1 200 m. Tasmanian cool temperate rainforest has affinities with rainforests in south-east Australia, New Zealand and the Andean region of southern Chile and Argentina. One notable difference is that Tasmanian rainforest has a lower diversity of tree species.

The rainforest types mapped do not correspond exactly to either the floristic communities or the categories in the general rainforest typology of Jarman, Brown and Kantvilas (1984), but there is some overlap. For example, *Notofagus–Atherosperma* rainforest (*RMT*) includes callidendrous and thamnic rainforests, and some of Jarman, Brown and Kantvilas’ floristic communities fall within these types.

The floristic composition of rainforest has been defined (Jarman & Brown, op cit.). These authors point out that some marginal communities incorporate mixed forest species at some lower altitude sites, and alpine and subalpine species at higher altitudes.

Rainforest ecology and succession has been discussed elsewhere (for example Brown & Podger 1982, Jarman, Brown & Kantvilas 1984, Read 1985, Brown 1988, Read & Hill 1988a & b, Jarman, ...
Some mapped rainforest communities are distinguished by particular species occupying distinctive habitats: RFS (Nothofagus cunninghamii), RHP (Lagarostrobus franklinii), RKP, RKS and RKF (Athrotaxis selaginoides), and RPP, RPW and RPF (Athrotaxis cupressoides). Coastal rainforest (RCO) is distinguished floristically by the dominance of Atherosperma moschatum and/or Eucryphia lucida, the paucity of Nothofagus cunninghamii, its low altitude, and its proximity to the coast. Nothofagus–Phyllocladus short rainforest (RMS) occurs at higher altitudes or on poorer soils and is equivalent to implicate rainforest. Species-poor subalpine rainforest with only N. cunninghamii, Eucryphia milliganii, Athrotaxis selaginoides and Richea pandanifolia is classified as Highland low rainforest and scrub (RSH), as is dense, closed canopy short forest with few species other than N. cunninghamii. Some facies of RSH are more diverse, with species composition varying from north to south; these diverse shrubberies may approach RMS floristically, but are generally scrub rather than forest, with N. cunninghamii dominant. RMT is usually dominated by N. cunninghamii and is generally found on fertile soils. There are many facies variants in the above mapping communities.

Vegetation previously mapped as Leptospermum with rainforest scrub (RLS) is now recoded as SRF within the Scrub, heathlands and coastal complexes section.

### Minor section revision

In light of a review of the forest/non-forest status of TASVEG mapping units in 2015 and development of information sheets describing vegetation communities listed as threatened on Schedule 3A of the Nature Conservation Act 2002. http://dpipwe.tas.gov.au/conservation/threatened-species-and-communities/threatened-native-vegetation-communities. Published 8 May 2018, a number of changes have been made as follows:

*Nothofagus cunninghamii* rainforest and scrub (RFS) has been renamed as *Nothofagus cunninghamii* rainforest scrub (RFS) to align with this unit’s designated non-forest status. Minor changes were made to the descriptions of RPW, RPF, RKF and RKS.

The sectional key has been amended to align with changes to RFS, and to reflect decisions made for the Threatened Native Vegetation Community information sheets.

### General management issues

Overall rainforest and related scrubs are adapted to low disturbance levels and are self-sustaining under natural levels of localised disturbance, such as tree fall and insect attack. Any increase in this disturbance acts to change the forest structure and floristic composition (Cullen 1991). Changes in forest type and structure can result from human disturbance in rainforest (Calais & Kirkpatrick 1983).

Fire is a significant threat with many rainforest species being killed outright by, even, low-intensity fire. Other species may re-sprout; however, repeated fires, even decades apart, will result in significant change in the vegetation, which will take from decades to centuries to recover (Cullen 1991, Cullen & Kirkpatrick 1998, Jackson 1968). Significant areas of *Athrotaxis selaginoides* rainforest have been lost to wildfire. It is estimated that 30% of all standing *Athrotaxis selaginoides* stems have been killed by fire (Brown 1988). *Athrotaxis selaginoides–Nothofagus cunninghamii* short rainforest (RKF) once covered most of the east-facing slopes between Mount Dundas and Mount Read, but nearly half of these stands have been burnt. *A. selaginoides* and *N. cunninghamii* are both destroyed by fire on many south-west mountains. Several insect pests and diseases can be issues in rainforest environments. A combination of two native organisms, the mountain pinhole borer (*Platypus subgranosus*) and the fungus *Chalara australis*, cause localised myrtle wilt (in *N. cunninghamii*) in undisturbed rainforest.

However, external disturbances such as roading, logging or fire, greatly increase the prevalence and severity of the wilt, frequently resulting in wide-scale death of mature *N. cunninghamii* (Cullen 1991, Duncan 1991, Kile et al. 1989). *Phytophthora cinnamomi* has also been shown to be damaging to rainforest vegetation where conditions allow it to survive; however, in the absence of disturbance very few areas of rainforest provide these conditions (Podger & Brown 1989).

### References and further reading


**Key to Rainforest and related scrub**

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

See next page of key
4 Short subalpine scrub/heath with rainforest species present

See Key to Scrub, heathland and coastal complexes (*Leptospermum with rainforest scrub (SRF)*)

3 Short rainforest with *Leptospermum* sparse or absent

4 Species-poor dwarf rainforest in subalpine areas

   **Highland low rainforest and scrub (RSH)**  21

4 Tangled short rainforest on infertile substrates with *Phyllocladus aspleniifolius* dominant or co-dominant

   **Nothofagus–Phyllocladus short rainforest (RMS)**  31

2 Rainforest or rainforest scrub with *Nothofagus cunninghamii* sparse or absent

3 Rainforest scrub with *Nothofagus gunnii* dominant

   **Nothofagus gunnii rainforest scrub (RFS)**  33

3 Rainforest dominated by *Atherosperma moschatum* and/or *Eucryphia lucida* in coastal areas

   **Coastal rainforest (RCO)**  19

3 Tall rainforest dominated by *Atherosperma moschatum*

   **Nothofagus–Atherosperma rainforest (RMT)**  27

3 Dominated by treeferns or *Histiopteris*; no trees

   **Rainforest fernland (RFE)**  36
**Athrotaxis cupressoides-Nothofagus gunnii short rainforest (RPF)**

**General description**

*Athrotaxis cupressoides-Nothofagus gunnii short rainforest (RPF)* applies to dense closed montane short forest and scrub in which *Athrotaxis cupressoides* forms a canopy above a tangle of *Nothofagus gunnii*. This is found on the sheltered sides of moraine ridges, on hills and along cliff lines. RPF may be largely limited to these two species or be more diverse, where *Diselma archeri* and various species of *Richea* and other shrubs are present.

**Example localities**

Du Cane Range; The Labyrinth.

**Distinguishing features and similar communities**

RPF is distinguished from vegetation dominated by *Athrotaxis cupressoides* (Athrotaxis cupressoides rainforest, RPP, Athrotaxis cupressoides open woodland, RPW) by the abundance of *Nothofagus gunnii*, which dominates the understorey and/or is present in the canopy. *A. cupressoides* may occur in pockets within stands of tall *N. gunnii* with emergent *A. selaginoides* on the West Coast Range, where the community is mapped as *Athrotaxis selaginoides-Nothofagus gunnii* short rainforest (RKF).

**RFA mapping unit**

RPF is equivalent to RFA PD.

**Distribution**

Central, western and southern Tasmania.

**Bioregional occurrence**

TCH, TSR, TWE.

**Site characteristics, habitat and ecology**

RPF occurs above 750 m, generally between 900 m and 1,200 m in a range of fire-protected sites, including the head walls of cirques, south-facing slopes, cliffs and scree fields, and the edges of tarns and lakes. It generally occurs on dolerite, but is not confined to it. Soils may be mineral or organic and are often shallow and rocky. *Athrotaxis cupressoides* with *N. gunnii* does not occur in the eastern portion of the range of *A. cupressoides* (eastern half of the Central Plateau), perhaps due to reduced precipitation.

**Vegetation composition and structure**

The dominant tree species are *Athrotaxis cupressoides* and *Nothofagus gunnii*. Other tree species sometimes present are *Nothofagus cunninghamii* and *Phyllocladus asplenifolius*, with *Athrotaxis selaginoides* rarely present. *Athrotaxis cupressoides* emergent stems may reach heights of 20 m (usually 8 to 15 m) with a projected canopy cover of 5–75%.

The understorey is a dense tangle dominated by *Nothofagus gunnii*. Other species present can include *Diselma archeri*, Microstrobos niphophilus, Microcachrys tetragona, Orites acicularis.
O. revoluta, Richea scoparia, R. pandanifolia, R. sprengelioides and Tasmannia lanceolata.

Small open patches may occur where Gleichenia alpina, Empodisma minus, Astelia alpina and Eurychorda complanata are prominent.

**Floristic communities known to occur in this mapping unit**

Montane rainforest:

M1.1 *Athrotaxis cupressoides* A. selaginoides over *Nothofagus gunnii–Richea pandanifolia*, also occurs in RKF & RFS
Athrotaxis cupressoides open woodland (RPW)

General description
Vegetation in which Athrotaxis cupressoides (5–8 m) forms small woodland patches or appears as copes and small trees commonly scattered (5–20%) above alpine heathland associated with blockfields, or along creek lines and lake margins. It may also occur in boggy situations over sedgeland, femland or Sphagnum bogs. Nothofagus gunnii is sparse or absent.

Example locality
Traveller Range.

Distinguishing features and similar communities
Athrotaxis cupressoides may be the only tree species in RPW, or Eucalyptus coccifera and less commonly E. gunnii or E. subcrenulata may also occur, but do not exceed 5% crown cover. Where species of Eucalypt exceed 5% crown cover and are the canopy dominant, these should be mapped within the appropriate TASVEG eucalypt community. RPW is distinguished from Athrotaxis cupressoides rainforest (RPP) by the higher canopy cover (>20%) and the more even distribution of trees in RPP. If Nothofagus gunnii is common, the vegetation is mapped as Athrotaxis cupressoides–Nothofagus gunnii short rainforest (RPF). Athrotaxis selaginoides–N. gunnii short rainforest (RKF) comprises dense tall N. gunnii with emergent Athrotaxis selaginoides. A few A. cupressoides may occur. If Athrotaxis selaginoides is dominant the vegetation will be attributed to Athrotaxis selaginoides rainforest (RKP).

RFA mapping unit
No direct equivalent but RPW was probably included in RFA PP & NV.

Distribution
Central and western Tasmania.

Bioregional occurrence
TCH, TNS, TSR.

Site characteristics, habitat and ecology
The community is found on dolerite between 600 and 1450 m elevation (with 50% of its distribution above 1250 m). It grows most often beside lakes and streams and on rockfields. Able to withstand frost and icy winds, it may be found on all but the most exposed heights on dolerite mountains with a long fire-free history. The community may form fringes around the base of steep, rocky slopes. However, past fires have resulted in a reduced cover of live trees and the frequent presence of dead stags of Athrotaxis cupressoides in some areas. While these do not define the community, they are characteristic of part of the mapped area of RPW.

Vegetation composition and structure
Three distinctive facies have been observed within this community, all with A. cupressoides occurring
either as irregularly scattered trees or as copses. Crown cover never exceeds 20% (except within the bounds of copses) and is commonly as low as 5%, such that the limits of mapping necessarily result in the inclusion of some treeless vegetation. Where treeless components are mappable, they are mapped as the appropriate TASVEG community.

Most common on the eastern half and northern edge of the Central Plateau, *A. cupressoides* often occurs on block fields, creek lines and lakeshores often with *Podocarpus lawrencei* and occasionally *Diselma archeri* and a combination of *Orites acicularis*, *O. revoluta*, *Grevillea australis*, *Planocarpa petiolaris*, *Bellendena montana*, *Leptospermum rupestre*, *Coprosma nitida*, *Olearia pinifolia*, *Richaea sprengeliioides*, *R. scoparia* and *Tasmannia lanceolata*, with smaller woody plants and herbs if the ground is exposed between the rocks.

Also on the Central Plateau (and other dolerite areas such as Mount Field), broad poorly–drained valleys and small glacial depressions *A. cupressoides* occurs over *Sphagnum cristatum* bogs, some of which have a shrub or sedge layer comprising any of *Richaea scoparia*, *R. gunnii*, *Baloskion australis*, *Epacris gunnii* and *Gleichenia alpina*.

Further west, *A. cupressoides* is scattered over a diverse understorey of coniferous heath, with *Microcachrys tetragona* and sometimes *Pherosphaera hookeriana*.

*Athrotaxis cupressoides* on siliceous substrates commonly form thickets and windrows with other small conifers on poorly–drained plains. Co–occurring species include *Richaea* spp., *Gleichenia alpina*, *Empodisma minus*, *Eurychorda complanata* and sometimes a few cushions, with *Poa gunnii*, *Boronia rhomboidea*, *Pentachondra pumila* or *Euphrasia striata*. Mosses and lichens occur in drier patches.

---

Floristic communities known to occur in this mapping unit

Montane rainforest:
M3.1 *Athrotaxis cupressoides* over proteaceous–myrtaceous shrubbery
M4.1 *Athrotaxis cupressoides* over *Poa* grassland
M5.1 *Athrotaxis cupressoides* over *Sphagnum*

Peatlands with *Sphagnum*.

2. Subalpine coniferous mires; also occurs in HSE
**Athrotaxis cupressoides rainforest (RPP)**

**General description**

*Athrotaxis cupressoides* rainforest (RPP) is open to closed montane forest vegetation dominated by *Athrotaxis cupressoides*. Other rainforest tree species (except *Nothofagus gunnii*) may be common and *Eucalyptus coccifera* may also occur in the canopy or at the margins of the community. The generally sparse understorey may include *Sphagnum* peatland, wet heathland/shrubland or grassland.

**Example locality**

Dixons Kingdom, Walls of Jerusalem National Park.

**Distinguishing features and similar communities**

RPP is distinguished from *Athrotaxis cupressoides* open woodland (RPW) by a greater canopy cover (> 20%), larger patch size, more even distribution of trees and generally lower diversity in the understorey. If the understorey includes *Nothofagus gunnii*, the vegetation is mapped as *Athrotaxis cupressoides–Nothofagus gunnii* short rainforest (RPP). If *N. gunnii* is dense and tall, with a canopy of *A. selaginoides* and *A. cupressoides* is only a minor component of the vegetation or restricted to discrete enclaves, the vegetation is mapped as *Athrotaxis selaginoides–Nothofagus gunnii* short rainforest (RKF). RPP is distinguished from other rainforest communities by the dominance or co-dominance of *Athrotaxis cupressoides*. Where *Nothofagus cunninghamii* is the clear dominant, the vegetation is mapped as the most appropriate TASVEG unit.

**RFA mapping unit**

RPP is equivalent to RFA PP.

**Distribution**

*Athrotaxis cupressoides* rainforest is uncommon, and is largely restricted to unburnt western parts of the Central Plateau and mountains in the Cradle Mountain-Lake Saint Clair National Park. It also occurs in the Tasmanian West Bioregion at Mt Anne, in the Tasmanian Southern Ranges Bioregion at Mt Field and in the Tasmanian Northern Slopes Bioregion at Mt Oakleigh and other areas bordering the Tasmanian Central Highlands Bioregion.

**Bioregional occurrence**

TCH, TNS, TSR, TWE.

**Site characteristics, habitat and ecology**

The community is largely confined to fire-protected sites on dolerite in central Tasmania from 600 to 1400 m elevation, generally above about 1200 m. The community is uncommon on quartzite. RPP gives way to *A. selaginoides*–dominated vegetation over south-west Tasmania and the west coast mountains. RPP occurs on dolerite block streams and other rocky areas, on poorly-drained *Sphagnum* peat bogs, or on well-developed organic loam soils, where topography provides protection from fire.
Vegetation composition and structure

The dominant tree species is *Athrotaxis cupressoides*. Trees are usually 8–15 m tall, but can reach > 20 m. Canopy cover is >20%. *Nothofagus cunninghamii* and *Phyllocladus asplenifolius* occur in some facies of the community, while *Athrotaxis selaginoides* rarely occurs.

Forests on mineral or peaty alluvial soils may have an open or nearly closed forest canopy over *Poa gunnii* and any of the following: *Astelia alpina*, *Carpha alpina*, *Gleichenia alpina*, *Lepidosperma filiforme*, *Oreobolus distichus*, *Richea scoparia* and *Olearia pinifolia*.

In boggy situations where RPP occurs over Sphagnum peatland, the canopy is often an open forest and the understorey may include shrubs such as *Richea* species and sedges such as *Empodisma minus*.

Where it occurs in riparian situations, on blockstreams and other rocky ground, RPP typically has an open forest canopy. Here, the understorey is usually heathland or shrubland and may include dwarf conifers such as *Podocarpus lawrencei*, an abundance of Epacridaceae species, with *Leptospermum rupestre*, *Tasmannia lanceolata*, *Coprosma nitida*, *Baeckea gunniana*, *Richea sprengeloides*, *Orites acicularis* and *O. revoluta*, and perhaps sparse herbs and grasses.

Floristic communities known to occur in this mapping unit

Montane rainforest:
M2.1 *Athrotaxis cupressoides* over mixed coniferous shrubbery
M2.2 *Athrotaxis cupressoides* over *Diselma archeri* in a park-like understorey
Athrotaxis selaginoides-Nothofagus gunnii short rainforest (RKF)

General description

*Athrotaxis selaginoides–Nothofagus gunnii* short rainforest (RKF) is scrub or short forest in which the canopy of *Athrotaxis selaginoides* is slightly taller than *Nothofagus gunnii* in areas with very low fire frequency. In the Cradle Mountain-Lake Saint Clair National Park there may be few other species, but on the west coast range RKF is generally highly diverse, with *N. cunninghamii*, *Diselma archeri* and *Richea pandanifolia* usually present. RKF may be dense and continuous, or form mosaics with alpine heathlands and sedgelands.

Example localities

Slopes above Lake Wilkes; slopes east of Mount Read.

Distinguishing features and similar communities

On west coast mountains *Nothofagus gunnii* rainforest scrub (RFS) passes laterally into RKF, which is taller and denser than RFS, with *A. selaginoides* important in RKF, but minor or absent in RFS. *Athrotaxis cupressoides* may occur in small enclaves within RKF. If *A. cupressoides* dominates or is co-dominant with *A. selaginoides* the community is *Athrotaxis cupressoides–Nothofagus gunnii* short rainforest (RPF). RFS, RKF and RPF are the only communities to contain *N. gunnii*. On unburnt parts of the West Coast Range windrows and low shrubland dominated by *A. selaginoides* and *N. gunnii* may differ from *Athrotaxis selaginoides* subalpine scrub (RKS) only in that RKS lacks *N. gunnii*.

RFA mapping unit

RKF is equivalent to RFA F.

Distribution

The Tasmanian Central Highlands Bioregion is the stronghold for RKF where it mainly occurs in the West Coast Ranges and Cradle Mountain areas. Remnant patches are also mapped in the Tasmanian West Bioregion (Raglan Range and Frenchmans Cap) and the Tasmanian Southern Ranges Bioregion (Mt Field, Mt Bobs and the Southern Ranges). RKF ranges in altitude from 450 m to 1 300 m, with 50% of its extent mapped above 900 m.

Bioregional occurrence

TCH, TSR, TWE.

Site characteristics, habitat and ecology

RKF is generally found in unburned alpine areas on siliceous rocks. It generally grows on well-drained organic soils on gentle slopes below alpine plateaus between about 500 m and 1 150 m near Cradle Mountain.

Vegetation composition and structure

In most places in the eastern mountains, RKF is found only at high-altitudes and contains few species other than *N. gunnii* and *Athrotaxis selaginoides*. On siliceous substrates in the west this community is
generally extensive and has an implicate structure and greater floristic diversity. In places *Leptospermum nitidum* is tall and has a mature umbrageous shape. *Diselma archeri* is a prominent component of RKF on Mount Read. Other species present include: *Orites milliganii*, *Bauera rubioides*, *Richea scoparia*, *R. curtisiae*, *Trochocarpa cunninghamii*, *Archeria* species, *Telopea truncata* and *Epacris serpyllifolia*, with species of *Euphrasia* on the ground and a few *Athrotaxis cupressoides* and *A. laxifolia* in some areas.

Floristic communities known to occur in this mapping unit

Implicate rainforest:

I2.1 *A. selaginoides* (– *Diselma archeri*) over a diverse tangle with *N. gunnii* (– *Archeria serpyllifolia*)

Montane rainforest:

M1.1 *Athrotaxis cupressoides*–*A. selaginoides* over *Nothofagus gunnii*–*Richea pandanifolia*; also occurs in RPF & RFS

Thamnic rainforest:

T5.3 *A. selaginoides*–*N. gunnii* over *T. gunnii* (–*R. pandanifolia*)
**Athrotaxis selaginoides rainforest (RKP)**

**General description**

This community can form pure stands of *Athrotaxis selaginoides*, but more commonly the conifer is co-dominant with or subdominant to *Nothofagus cunninghamii* in medium forests. The short forests may be floristically simple but often are highly diverse, at low altitudes (from about 250 m to 1250 m) near the West Coast Range.

**Example localities**

Western slopes of The Boomerang (southern ranges); slopes around Mount Read; Algonkian Mountain.

**Distinguishing features and similar communities**

RKP is distinguished from *Nothofagus–Atherosperma* rainforest (RMT) by the presence of *Athrotaxis selaginoides*, though this species may form as little as 10% of the canopy. RKP may grade upslope into the shorter *Athrotaxis selaginoides–Nothofagus gunnii* short rainforest (RKF) in which *N. gunnii* co-dominates with *A. selaginoides* and *N. cunninghamii* is a minor component. Close to the boundary of the alpine zone RKP may also grade into *Athrotaxis selaginoides* subalpine scrub (RKS), which is highly diverse but lacks *N. gunnii*. In some areas *Leptospermum* forest (NLE) and rainforest (RML) (neither of which have *A. selaginoides*) are in close proximity to RKP and there may be transition vegetation in which tall *Leptospermum nitidum* joins *A. selaginoides* and *N. cunninghamii* in the canopy. This unusual forest is mapped as RKP. Highland rainforest scrub with dead *A. selaginoides* (RXX) is a diverse subalpine scrub thought to result from burning RKS and the high-altitude examples of RKP.

RXX contains rainforest species but no live *A. selaginoides* as trees, and rarely any as seedlings.

**RFA mapping unit**

TASVEG RKP is equivalent to RFA X.

**Distribution**

The community occurs in central, western and southern Tasmania.

**Bioregional occurrence**

TCH, TNS, TSR, TWE.

**Site characteristics, habitat and ecology**

Forests dominated by *Athrotaxis selaginoides* occur in high-rainfall montane regions in central, western and southern Tasmania between about 250 m to 1250 m. They are found on a variety of rock types usually on acidic and highly organic soils. The sites are usually rocky. RKP formed large forests on sandstone slopes in the southern ranges before much of it was destroyed by fire in the 1930s. There are still some excellent examples of undamaged forest in south-west Tasmania.

**Vegetation composition and structure**

*Athrotaxis selaginoides* may be dominant in RKP or co-dominant or subdominant to *Nothofagus*...
*cunninghami*. Emergent trees up to 40 m tall occur and projected canopy cover may reach 80%.

Other tree species commonly present are *Phyllocladus aspleniifolius*, *Atherosperma moschatum*, *Eucryphia lucida* and/or *E. milliganii*. In high-altitude stands of *Athrotaxis selaginoides* (usually in association with *N. cunninghamii* or *N. gunnii*), *Richea pandanifolia* may attain the same height as the other trees. More commonly in these rainforests, *A. selaginoides* is not dominant but forms up to 25% of the canopy of high-altitude rainforests dominated by *N. cunninghamii*. *Athrotaxis cupressoides* is not usually present in *RKP*, but on Mount Kate near Cradle Mountain it is co-dominant. *Athrotaxis selaginoides* rainforests in the Tasmanian Southern Ranges Bioregion are commonly short, with low species diversity. They may consist of a closed canopy of *A. selaginoides*, *N. cunninghamii* and *Eucryphia milliganii* with tall *Richea pandanifolia*. The understorey is restricted to a few ground ferns. Much more diverse forests occur in the Tasmanian West Bioregion, particularly about the west coast range. These implicate forests include a broad range of rainforest trees and shrubs including *A. selaginoides*, *N. cunninghamii*, *Phyllocladus aspleniifolius* and sometimes *Atherosperma moschatum* as the tallest trees, with tall shrubs of the same species plus *Richea pandanifolia*, *Anopterus glandulosus*, *Agastachys odorata*, *Cenarrhenes nitida*, *Telopea truncata*, *Pittosporum bicolor*, *Anodopetalum biglandulosum*, *Tasmannia lanceolata*, *Eucryphia lucida* and/or *E. milliganii*, *Archeria* species, *Trochocarpa* species, *Leptecophylla juniperina*, *Gaultheria hispida*, *Olearia philogopappa*, *Coprosma nitida*, *Tetracarpaea tasmanica* and *Aristotelia pedunculata*. Ground ferns are common.

**Floristic communities known to occur in this mapping unit**

**Implicate rainforest:**

I1.3 *A. selaginoides–P. aspleniifolius–N. cunninghamii* over a diverse tangle with *Agastachys odorata* (– *R. pandanifolia*)

I1.4 *A. selaginoides* over a diverse tangle with *Agastachys odorata–Richea scoparia*; also occurs in *RKS* & *RIOX*

**Thamnic rainforest:**

T1.3 *A. selaginoides* over *A. biglandulosum–* *R. pandanifolia*

T4.3 *A. selaginoides–N. cunninghamii–Eucryphia spp.* over *A. eriocarpa–A. hirtella–* *R. pandanifolia*

T5.2 *A. selaginoides* (and/or *N. cunninghamii*)–*E. milliganii* over *T. gunnii–* *R. pandanifolia*; also occurs in *RKS*

T6.2 *Athrotaxis selaginoides* over *Trochocarpa cunninghamii*

T9.1 *A. selaginoides* over *R. scoparia–N. cunninghamii* (– *E. milliganii*); also occurs in *RKS*

**Additional communities (Forest Botany Manual)**

**Intermediate rainforest**

RAIN-CT6 *N. cunninghamii–A. moschatum–E. lucida* over clear understorey; also occurs in *RMT*
**Athrotaxis selaginoides** subalpine scrub (RKS)

**General description**

On western and southern mountains this community represents unburnt, floristically diverse uneven-textured subalpine scrub. It clings to sheltered cliff lines or forms thickets and windrows to 2–5 m (can be up to 8 m) high in sedgeland/rushland. Shrubby *Athrotaxis selaginoides* as well as small *Nothofagus cunninghamii*, *Eucryphia milliganii* and any of *Richea pandanifolia*, *R. scoparia*, *R. milliganii*, *Cenarthemis nitida*, *Agastachys odorata* and *Eucalyptus vernicosa* are typical and many other shrub species may occur. Herbs and prostrate shrubs may be common.

**Example locality**

Sandstone shelves west of Adamsons Peak.

**Distinguishing features and similar communities**

The closest equivalent to this community is *Athrotaxis selaginoides–Nothofagus gunnii* short rainforest (RKF) as it occurs in thickets and windrows on the northern parts of the west coast range. RKF is defined by the presence of *Nothofagus gunnii* while *N. cunninghamii* is not usually prominent. *Athrotaxis selaginoides* subalpine scrub (RKS) occurs in less fertile, more exposed situations than Highland low rainforest and scrub (RSH). It shares the most prominent species found in RSH (as well as *Athrotaxis selaginoides*) but is much more floristically diverse than RSH. At higher altitudes, Highland rainforest scrub with dead *Athrotaxis selaginoides* (RKX) is probably a more recently burned equivalent of RKS. However, RKX is generally confined to slopes and does not form thickets in moorlands as RKS does. RKX also has stronger rainforest affinities and commonly has prominent *Leptospermum* species, unlike RKS.

*Athrotaxis selaginoides* rainforest (RKP) usually occurs on slopes below subalpine areas and in a few places grades upslope into RKS with diminution of tree height and a substantial increase in diversity.

On the Central Plateau, *A. selaginoides* is sometimes found in patches with *Leptospermum lanigerum* or short alpine or coniferous heathland and these patches may be included in RKS. *A. selaginoides* at or below the edge of the plateau belong to other communities, such as RKP.

**RFA mapping unit**

RKS is mainly a non-forest community; however some RKS may have been included in RFA X.

**Distribution**

RKS is found mainly in the west and south-west and also in the Central Highlands of Tasmania.

**Bioregional occurrence**

TCH, TSR, TWE.

**Site characteristics, habitat and ecology**

RKS occurs between about 650 m and 1 050 m in the southern ranges and south-west Tasmania on peat soils overlying quartzite, flat-lying Triassic sandstones or glacially-eroded dolerite.
Sites may be very steep cliff lines, or moderate slopes below ridge tops, but more often they are on gentle slopes where the thickets occupy areas of better drainage (and sometimes shelter) than the surrounding moorland.

**Vegetation composition and structure**

The community is an uneven-textured alpine scrub, which may form small thickets or windrows surrounded by sedgeland/rushland communities. Scattered small (or occasionally emergent) *A. selaginoides* are surrounded by dwarf *Nothofagus cunninghamii*, *Eucryphia milliganii* and *Richea scoparia* combined with any of *Diselma archeri*, shrubby *Eucalyptus vernicosa*, *Cenarrhenes nitida*, *Persoonia gunnii* and *R. pandanifolia*. Species typical of quartzite terrain are *Orites milliganii*, *Tasmannia lanceolata*, *Leptecophylla juniperina*, *Bauera rubioides*, *Anodopetalum biglandulosum*, *Anopterus glandulosus*, *Agastachys odorata*, *Ozothamnus rodwayi* and *Monotoca submutica*.

Herbs and small shrubs include *Anemone crassifolia*, *Senecio* species, *Exocarpos humifusus*, *Tetracarpaea tasmanica*, *Cyathodes straminea*, *Euphrasia gibbsiae*, *Pronotes cerinthoides*, *Pentachondra pumila*, *Isophysis tasmanica*, *Astelia alpina*, *Dracophyllum milliganii*, *Oreobolus species*, *Epacris serpyllifolia*, *Leucopogon milliganii*, *Empodisma minus*, *Sprengelia montana*, *Helichrysum pumilum* and *Carpha alpina*. Fringes of *Gleichenia absicida* occur around thickets in a few areas.

A fjældmark form on sandstone stripes on The Boomerang has, in addition, *Trochocarpa* species, *Podocarpus lawrencei*, *Coprosma nitida* and *Richea sprengelioides* with *A. selaginoides*, *Richea scoparia*, *Diselma archeri* and *Eucalyptus vernicosa*, but lacks *Nothofagus* species and *Eucryphia milliganii*.

**Floristic communities known to occur in this mapping unit**

Implicate rainforest:

I1.4 *A. selaginoides* over a diverse tangle with *Agastachys odorata–Richea scoparia*; also occurs in RKP & RIKX

Thamnic rainforest:

T5.2 *A. selaginoides* (and/or *N. cunninghamii*)– *E. milliganii* over *T. gunnii–R. pandanifolia*; also occurs in RKP

T9.1 *A. selaginoides* over *R. scoparia–N. cunninghamii* (*E. milliganii*); also occurs in RKP
Coastal rainforest (RCO)

General description
This rainforest is dominated by *Atherosperma moschatum, Eucryphia lucida* or both, but *Nothofagus cunninghamii* are few or absent. *Olearia argophylla* is prominent in some areas. There may be an intermediate layer with any of *Anodopetalum biglandulosum, Phyllocladus aspleniifolius, Anopterus glandulosus, Cenarrhenes nitida* and *Dicksonia antarctica*, with ferns, particularly *Blechnum wattsii*. There may be emergent *Eucalyptus* species.

Example locality
Davey Head.

Distinguishing features and similar communities
RCO is distinguished from *Nothofagus–Atherosperma* rainforest (RMT) by having little or no *N. cunninghamii*. The dominant trees are *Eucryphia lucida* and *Atherosperma moschatum* along the south coast, *E. lucida* in the far south-west (Davey Head) and *Phyllocladus aspleniifolius* on the coastal dunes at Towterer Beach. *Olearia argophylla* is prominent in some south-east sea cliff forests, and most coastal rainforests have fringe areas of broad-leaf small trees, particularly *Olearia argophylla* and *Pomaderris apetala*. Where dominated by broad-leaf species, the community is Broad-leaf scrub (SBR). Along the south and south-west coasts, there is often a transition into RMT rainforest dominated by *Nothofagus cunninghamii*, and in all areas there may be transition into tall, broad-leaf, low forest dominated by *Olearia argophylla*.

RFA mapping unit
No direct equivalent but RCO was probably included in RFA M+, M- & NV

Distribution
RCO occupies the cooler coastal areas in southern Tasmania from Macquarie Harbour to the Tasman Peninsula.

Bioregional occurrence
TSE, TSR, TWE.

Site characteristics, habitat and ecology
Coastal rainforest is generally found on steep sheltered slopes or cliffs facing the sea. Shelter from desiccation and fire is important. An unusual facies of this community, which is dominated by *Phyllocladus aspleniifolius*, occurs on the south-west coast, inland of Towterer Beach.

Prion Bay, south-west Tasmania. Nepelle Temby.
Vegetation composition and structure

Coastal rainforest is typically dominated by tall *Atherosperma moschatum* and/or *Eucryphia lucida*, with little or no *N. cunninghamii*. Rainforests along the south coast can be diverse, dominated by *A. moschatum*, *Eucryphia lucida* and sometimes *Anodopetalum biglandulosum*, sometimes with an intermediate layer (which, in a few areas, may be dense and tangled). Any of *Anopterus biglandulosum*, *Cenarrhenes nitida*, *Phyllocladus aspleniifolius*, *Monotoca glauca* and *Richea pandanifolia* over *Archeria* species, *Blechnum wattsii*, *B. nudum* and *Prionotes cerinthoides* are present. The rainforest may only occupy small patches, surrounded by species of *Eucalyptus* and wet scrub communities.

Floristic communities known to occur in this mapping unit

No systematic assessment has been undertaken of coastal rainforest communities.
**Highland low rainforest and scrub (RSH)**

**General description**
In the southern ranges this is a short subalpine to alpine forest of very low diversity, dominated by *Nothofagus cunninghamii* and *Eucryphia milliganii* with *Richea pandanifolia*. In northern alpine areas the community is variable and may be more diverse but usually lacks *Eucryphia* species. One or both *Athrotaxis* species may be present in small numbers. **RSH** includes blockstream scrub dominated by dwarf multi-stemmed *N. cunninghamii*.

**Example localities**
Slopes above Vale of Belvoir; Lake Shelf south of Mount Anne; upper slopes on the Picton Range.

**Distinguishing features and similar communities**
There are several facies of **RSH**. Near Cradle Mountain it is a short forest with *N. cunninghamii* and very few other species, distinguished from *Nothofagus–Phyllocladus* short rainforest (**RMS**) by its very low floristic diversity and high-altitude distribution. Southern and western forms of **RSH** have *Eucryphia milliganii* co-dominant and may show greater floristic diversity, with *Phyllocladus aspleniifolius* and *Anopterus glandulosus* sometimes present but not co-dominant as they are in **RMS**. **RSH** in the southern ranges often has *Orites diversifolia* which is also a prominent species in highly diverse high-altitude **RMS** in that area.

**RSH** is shorter than *Nothofagus–Atherosperma* rainforest (**RMT**) and does not have a layered structure. The most diverse facies of **RSH** have floristic and structural similarities with *Athrotaxis selaginoides* subalpine scrub (**RKS**) or Highland rainforest scrub with dead *Athrotaxis selaginoides* (**RKO**), but **RSH** lacks the *Athrotaxis selaginoides* which helps define the other two. *A. selaginoides* also distinguishes *Athrotaxis selaginoides* rainforest (**RKP**) at high-altitude from the shorter **RSH**. **RKP** and **RKS** usually show floristic similarities with **RSH** but are distinguished by the presence of *Athrotaxis selaginoides*. *Cenarrhenes nitida*, *Agastachys odorata* and *Eucalyptus viminalis* are common associates in **RSH** in the west and south, while *Orites diversifolia* is prominent at Mount Field and in the southern ranges. In the simplest **RSH** forests in the south and south-west, *N. cunninghamii*, *Eucryphia milliganii* and *Richea pandanifolia* form short, closed forest on steep slopes.

*Leptospermum* with rainforest scrub (**SRF**) occurs at lower altitudes than **RSH**, is shorter (generally <5 m in height) and is generally more diverse, usually with a strong *Leptospermum* species component but without *N. cunninghamii* dominant in the canopy. *Nothofagus–Leptospermum* short rainforest (**RML**) is similar in height and can reach similar altitudes to **RSH**, but *Leptospermum* species generally do not occur in **RSH**. **RSH** is distinguished from the subalpine and alpine heaths by its greater height (up to 8–10 m), lower floristic diversity and the dominance of *N. cunninghamii*.

**RFA mapping unit**
No direct equivalent but **RSH** was probably included in RFA **M–X & NV**.

**Distribution**
Widespread in high-elevation forested areas of Tasmania.
Bioregional occurrence
BEL, TCH, TNS, TSR, TWE.

Site characteristics, habitat and ecology
RSH occurs on slopes, cliff lines, below ridge-tops, plateau edges, lake perimeters and rocky areas, including scree slopes. RSH occurs between about 800 m and 1 200 m, generally on well–drained, fertile soils accumulated over long fire-free intervals. On dolerite scree the community may consist of little more than Nothofagus cunninghamii and moss.

Vegetation composition and structure
Dwarf Nothofagus cunninghamii dominates in all facies of RSH and occurs both alone, with a few other species or in diverse combinations of rainforest and subalpine species. In areas north and west of Cradle Mountain, N. cunninghamii may be the only species present, with single or multi-stemmed trees forming a dense, closed canopy to short forests without understorey. On dolerite scree slopes multi-stemmed N. cunninghamii commonly form patches with only mossy cover over rocks.

RSH in the south and west (in which Eucryphia milliganii is prominent) is generally more floristically diverse than that in the Central Highlands.

Floristic communities known to occur in this mapping unit
Alpine Vegetation:
33 Nothofagus cunninghamii–Eucryphia milliganii heath; also occurs in HHW
38 Nothofagus cunninghamii–Prionotes cerinoides heath; also occurs in RMS, HHW & SSW

Buttongrass Moorland:
B15 Mountain copses; also occurs in MBS & SSW
Highland rainforest scrub with dead *Athrotaxis selaginoides* (RKX)

**General description**

Highland rainforest scrub with dead *Athrotaxis selaginoides* (RKX) is a diverse rainforest scrub or tall heathland commonly dominated by *Leptospermum nitidum*. It occurs on siliceous substrates, usually with obvious or cryptic traces of burnt *Athrotaxis selaginoides* (and rarely live seedlings). *Eucryphia* species, *Nothofagus cunninghamii* and *Richea pandanifolia* are usually present but *Agastachys odoratus* and/or *Leptospermum nitidum* may dominate. Also, any of *L. scoparium*, *Cenanthera nitida*, *Phyllocladus asplenifolius*, *Anopterus glandulosus*, *Anodopetalum biglandulosum*, *Orites diversifolia*, *Trochocarpa cunninghamii* occur with *Blechnum watsonii* under and *Prionotes cerninthoides* covering old wood and sometimes rocks. A variant of this community on the West Coast Range has *A. selaginoides* stags and isolated shrubs (various species) above a bed of Restionaceae species, *Diplarrna latifolia* or ferns.

![Image](https://via.placeholder.com/150)

South of Mount Read. Stephen Harris.

**Example localities**

South-eastern slopes of the Ironbound Range; southern face of Sedgwick Bluff.

**Distinguishing features and similar communities**

The community appears to be the burnt equivalent of *Athrotaxis selaginoides* rainforest (RKP) at its lower altitudes and *Athrotaxis selaginoides* subalpine scrub (RKS) at higher altitudes. It differs from both in the lack of live *A. selaginoides* (rarely are there a few seedlings). RKX is similar in species composition to the most diverse forms of RKP, but has fewer rainforest species at higher altitude. There is generally continuous down-slope variation from RKX to scrub and forest with *Leptospermum nitidum* a dominant species in the canopy, mapped as Subalpine *Leptospermum nitidum* woodland (NLN) or *Nothofagus–Leptospermum* short rainforest (RML). One form of Western subalpine scrub (SSW) which contains *Eucryphia lucida* and *Nothofagus cunninghamii* has similarities to RKX (including dead *A. selaginoides* pine in a few places), but SSW is shorter and dominated by *Leptospermum nitidum* and *Monotoca submutica* and has many shared species with highland buttongrass/Melaleuca squamea communities. SSW may also have emergent *Banksia marginata* and/or *Eucalyptus nitida* or *E. subcrenulata*.

**RFA mapping unit**

Not covered by RFA mapping. Some facies of RKX may occur in RFA X.

**Distribution**

This community is most common on the west coast range, and is known in south-west Tasmania.

**Bioregional occurrence**

TCH, TSR, TWE.
Site characteristics, habitat and ecology

The community occurs in western and south-west Tasmania between about 600 m and 900 m on moderate to steep exposed slopes.

Vegetation composition and structure

The community forms scrub or sometimes short implicate forest with traces of *Athrotaxis selaginoides*. Dominant species include *Agastachys odorata*, *Leptospermum nitidum*, *Eucryphia* species, *Nothofagus* species and *Richea pandanifolia*, *L. scoparium* and *L. glaucescens*. Rainforest shrubs such as *Cenarrhenes nitida*, *Phyllocladus aspleniifolius*, *Anopterus glandulosus*, *Anodopetalum biglandulosum*, *Orites diversifolia*, *Trochocarpa cunninghamii*, *Tasmannia lanceolata* and *Monotoca submutica* also occur in sheltered areas. Open areas, often on quartzitic boulders, have *Blechnum wattsii*, *Epacris serpyllifolia*, *Blandfordia punicea*, *Bauera rubioides*, *Gaultheria* species, *Diplarrena latifolia* and *Leptecophylla juniperina*. With increasing altitude *Leptospermum nitidum* becomes dominant, *Bauera rubioides* becomes prominent and *Eucalyptus vernicosa* may appear.

Floristic communities known to occur in this mapping unit

Implicate rainforest:

I1.4 *A. selaginoides* over a diverse tangle with *Agastachys odorata–Richea scoparia*; also occurs in RKP & RKS
Lagarostrobos franklinii rainforest and scrub (RHP)

General description
This mapping community is dominated by, or has a significant component of, *Lagarostrobos franklinii* usually combined with rainforest species and sometimes *Acacia melanoxylon* in the canopy over an understorey of other rainforest species. Sometimes *L. franklinii* forms pure stands with sparse, shrubby or implicate understoreys, usually on deep alluvium. Rocky streamside short forest and scrub may have a combination of small trees of *L. franklinii*, *Leptospermum* species, Proteaceae species, rainforest and riverine species and be quite diverse.

Example locality
Yanns Reach, Pieman River.

Distinguishing features and similar communities
The community is distinguished by the presence of a significant component of *Lagarostrobos franklinii*.

RFA mapping unit
RHP is equivalent to RFA H.

Distribution
The community occurs along many river systems of western and southern Tasmania. There are also high-altitude stands at Mount Read, Lake Vera and several other areas near Frenchmans Cap.

Bioregional occurrence
TCH, TSR, TWE.

Site characteristics, habitat and ecology
*Lagarostrobos franklinii* rainforest and scrub occurs along many of the river systems of western and southern Tasmania, between sea level and about 350 m. There are unusual stands as high as 1 030 m near Lake Tahune. In the west and south-west, *L. franklinii* occurs in gallery rainforests. RHP is common on alluvial flood plains and associated swamps, with the conifers sometimes only occurring close to the water on these flats, as at Tahune. It also occurs in a few stands away from rivers.

Vegetation composition and structure
The community is dominated by *Lagarostrobos franklinii* with *Nothofagus cunninghamii* usually co-dominant. Trees can reach heights of 30 m. Other tree species may include *Eucryphia lucida*, *Atherosperma moschatum*, *Phyllocladus asplenifolius*, *Leptospermum* species, *Melaleuca squarrosa* and *Acacia melanoxylon*. Some extensive forests on alluvial flats, such as those in the Truchanas Reserve on the Denison River and at the south-west end of Lake Vera, are very rich in *L. franklinii* in the canopy, with a sparse understorey.
More usual are narrow belts of \( L. \) franklinii rainforest, short forest and scrub along riverbanks and the shores of largely sheltered sea inlets such as Macquarie Harbour and Port Davey.

These forests are floristically variable but might include \( R. \) pandanifolia, \( P. \) cerinthisoides, \( P. \) bicolor, \( L. \) juniperina, \( L. \) riparium, \( A. \) glandulosus, \( C. \) nitida, \( A. \) biglandulosum, \( A. \) frankliniae, \( P. \) apetala, \( T. \) gunnii, \( T. \) lanceolata, \( O. \) diversifolia, \( O. \) persoonioides and many fern species. At Newell Creek, south of Queenstown, short rainforest with \( L. \) franklinii also contains \( A. \) selaginoides and \( P. \) aspleniifolius in a tangled and diverse shrubbery at the lowest altitudinal limits for \( A. \) selaginoides.

**Floristic communities known to occur in this mapping unit**

**Implicate rainforest:**
- I1.2 \( L. \) franklinii–\( N. \) cunninghamii–Myrtaceae spp. over a diverse tangle with \( A. \) odorata

**Thamnic rainforest:**
- T1.4 \( L. \) franklinii–\( N. \) cunninghamii over \( A. \) biglandulosum
- T2.2 \( L. \) franklinii–\( N. \) cunninghamii over \( A. \) frankliniae
- T3.2 \( L. \) franklinii (– \( N. \) cunninghamii) over \( A. \) glandulosus
- T4.2 \( L. \) franklinii (– \( N. \) cunninghamii) over \( A. \) eriocarpa/\( A. \) hirtella

**Other forest/scrub communities:**
- B6 Thamnic Huon pine swamp forest; also occurs in NLM
**Nothofagus-Atherosperma rainforest**

**General description**

Nothofagus–Atherosperma rainforest (RMT) is tall (25+ m) rainforest in which the canopy is dominated by *Nothofagus cunninghamii*, and sometimes *Atherosperma moschatum* on relatively fertile soils. *Eucryphia lucida* may co-dominate. Structure varies from callidendrous to thamnic; in the latter, there are *Trochocarpa* species and/or *Anopterus glandulosus* and other broad-leaf shrubs in the understorey.

![Image](image_url)

*Quale Falls, edge of Middlesex Plains. Keith Corbett.*

**Example localities**

Savage River area; Lake Dobson Road, Mount Field National Park.

**Distinguishing features and similar communities**

This rainforest community is distinguished from most mapping classes by the presence of a continuous high canopy of *N. cunninghamii*, with or without *A. moschatum* and/or *Eucryphia lucida*. In a few fertile areas *A. moschatum* dominates the canopy. RMT may be callidendrous, in which case vascular plant diversity is generally very low, or thamnic, with a shrubby mid-storey and greater diversity. RMT is distinguished from *Nothofagus–Phyllocladus* short rainforest (RMS), which is also dominated by *N. cunninghamii*, but is shorter (< 25 m), thamnic to implicate in structure and more diverse. *Athrotaxis selaginoides* rainforest (RKP), which may be structurally similar to either RMT or RMS, with floristic diversity ranging from low to high. *Nothofagus–Leptospermum* short rainforest (RML) is short rainforest with significant *Leptospermum* species in the canopy, while *Leptospermum* with rainforest scrub (SRF) is generally <5 m tall, often with a *Leptospermum* species canopy over rainforest saplings. SRF may be an early seral stage of RMT. Tall rainforest near the south-west and south coasts, dominated by either *Eucryphia lucida* or *Atherosperma moschatum* and broad-leaf shrubs is attributed to Coastal rainforest (RCO).

Medium to tall rainforest as an understorey to taller *Eucalyptus* species is mixed forest, and is attributed to one of the wet *Eucalyptus* forest communities, depending on the dominant *Eucalyptus* species.

**RFA mapping unit**

RMT is equivalent to RFA M+.

**Distribution**

North-west, western and southern Tasmania and around the north-eastern highlands; small relict forests near the east coast. Rainforest vegetation has not yet been differentiated for all areas within the WHA.

**Bioregional occurrence**

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

**Site characteristics, habitat and ecology**

This community is found mainly on relatively fertile sites with high moisture availability. Fertility may owe more to accumulation of nutrients over long periods in fire-protected sites than to substrate composition. Small relict patches occur on the east coast in sheltered valleys or in places where sea mists provide year-round moisture. RMT covers climax...
communities that do not require disturbance for their perpetuation. They are adapted to stochastic disturbance events such as floods, wind damage and disease (for example the native pathogen Chalara australis).

**Vegetation composition and structure**

Jarman et al. (1984) identifies five major structural rainforest types of which two are included in RMT – callidendrous (tall with open understories) and thamnic (medium height with shrubby understorey).

*Nothofagus cunninghamii* is usually the canopy dominant, but in some situations in central Tasmania and on the east coast where rainforest is relic, the dominant may be *Atherosperma moschatum*. Other canopy species may include *Eucryphia lucida* and *Acacia melanoxylon*. At low to moderate altitudes, all canopy trees are generally taller than 25 m with single stems and well-defined boles.

Ferns represent the greatest species diversity of vascular plants. *Dicksonia antarctica* from 2–4 m may be the only mid-storey species. Epiphytic ferns, particularly species of *Hymenophyllum* and *Grammitis*, are frequent on logs and tree trunks. On less fertile sites, *Eucryphia lucida*, *Acacia melanoxylon*, *Anodopetalum biglandulosum* and *Phyllocladus aspleniifolius* may be prominent in the canopy and/or as mid-storey saplings, sometimes associated with tall *Richea pandanifolia*. The mid-storey may be sparse and uneven or dense, with broad-leaf shrubs, typically *Anopterus glandulosus* and sometimes also *Cenarthensis nitida* or spindly *Telopea truncata*, or shrubs may be largely fine-leaved species such as species of *Trochocarpa*, *Aristolotelia pedunculata*, *Pimelea drupacea*, *Pittosporum bicolor* and *Coprosma quadrifida*.

**Floristic communities known to occur in this mapping unit**

**Callidendrous rainforest:**

C1.1 *N. cunninghamii*–*A. moschatum* over *D. antarctica* and/or *P. proliferum*

C1.2 *A. moschatum* over *D. antarctica*–*P. proliferum*–*B. wattsii*

C2.1 *N. cunninghamii* (– *L. langerum*) over clear u/s, or with *T. truncata* and/or *T. lanceolata*

C3.1 *N. cunninghamii*–*A. moschatum* over *O. argophylla* with *D. antarctica* and/or *P. proliferum*

C3.2 *A. moschatum* over *O. argophylla* with *D. antarctica* and/or *P. proliferum*

Thamnic rainforest:

T1.1 *N. cunninghamii*–*E. lucida* (– *P. aspleniifolius*) over *A. biglandulosum*; also occurs in RMS

T2.1 *N. cunninghamii*–*Eucryphia lucida* over *Acradenia frankliniae*; also occurs in RMS

T3.1 *N. cunninghamii*–*E. lucida* (– *P. aspleniifolius*) over *A. glandulosus*; also occurs in RMS

T5.1 *N. cunninghamii*–*A. moschatum*–*E. lucida* over *T. gunnii*; also occurs in RMS

Intermediate rainforest:

RAIN–CT1 *N. cunninghamii*–*A. moschatum*–*E. lucida* over *B. wattsii*–*D. antarctica*

RAIN–CT2 *N. cunninghamii*–*A. moschatum* over *A. biglandulosum*

RAIN–CT5 *Nothofagus cunninghamii* over *Trochocarpa gunnii*–*Polystichum proliferum*

RAIN–CT6 *N. cunninghamii*–*A. moschatum*–*E. lucida* over clear u/s; also occurs in RKP

RAIN–CT7 *N. cunninghamii*–*A. moschatum* (– *P. aspleniifolius*) over *A. glandulosus*–*B. wattsii* (– *D. antarctica*); also occurs in RMS

RAIN–CT8 *A. moschatum* over *O. argophylla*–*A. glandulosus* with *P. proliferum*–*D. antarctica*

Other forest/scrub communities:

D5 Riparian blackwood/myrtle/dogwood forest; also occurs in NAR

D6 Riparian blackwood rainforest; also occurs in NAR & NAF

D7 Riparian blackwood/featherwood rainforest; also occurs in NAR & NAF

Peatlands with *Sphagnum*:

7 Rainforest–*Sphagnum* mires; also occurs in RMS & RML

**Riparian Communities (Daley & Kirkpatrick 2004)**

13 *Nothofagus cunninghamii*–*Atherosperma moschatum*–*Poa labillardieri*–*Libertia pulchella*–*Blechnum nudum* closed-scrub; also occurs in RML

18 *Nothofagus cunninghamii*–*Acacia verticillata*–*Gahnia grandis* ferny closed – scrub; also occurs in *Nothofagus*–*Leptospermum* short rainforest (RML)
**Nothofagus-Leptospermum short rainforest (RML)**

**General description**

This community is rainforest in which 15–50% of the canopy is mature *Leptospermum* species. The rainforest is generally thamnic and moderately floristically diverse, with *Phyllocladus asplenifolius*, *Eucryphia* species, *Atherosperma moschatum* and *Anodopetalum biglandulosum* and sometimes *Acacia melanoxylon* co-dominant with *Nothofagus cunninghamii*.

**Example localities**

Lyell Highway near Nelson Falls; south-facing slopes of Western Arthurs.

**Distinguishing features and similar communities**

The mixed *Leptospermum*/*Nothofagus cunninghamii* canopy is diagnostic for RML.

Most of the areas mapped as RML in south-west Tasmania are inaccessible and have not been studied on the ground, although they appear distinct on aerial photographs. Where RML can be described, it generally forms highly diverse short forest which may grade into *Nothofagus–Atherosperma* rainforest (RMT), *Atherosperma selaginoides* rainforest (RKP) or *Eucalyptus nitida* over rainforest (WNR). It is distinguished from these three respectively by the presence of *Leptospermum* species as a co-dominant, the absence of *A. selaginoides* and the absence of a *Eucalyptus* canopy.

If any *Atherosperaxis selaginoides* is present, rainforest is classified as RKP, even if there is some *Leptospermum* species sharing the canopy. Similarly, regrowth rich in *L. nitidum* and immature

**Bioregional occurrence**

BEL, TCH, TNS, TSR, TWE.

**Site characteristics, habitat and ecology**

RML occurs on moderately sheltered, fire-protected, well–drained slopes between about 700 m and 900 m in high-rainfall areas. It may occupy ridge crests surrounded by rainforest, or forms across slopes with rainforest or *Eucalyptus nitida* over rainforest (WNR) and *Leptospermum* forest (NLE). It also occurs on the flat bottoms and undulating sides of subalpine valleys. At much lower altitudes (100–400 m) RML forms patches within...
RMT in undulating country inland from the west coast between Macquarie Harbour and Low Rocky Point. Around the West Coast Range RML occurs on volcanics and Precambrian rocks.

Where RML is easily seen (generally on the west coast or near Lake Gordon), it can occupy an apparent ecological position between Leptospermum scoparium–Acacia mucronata short forest (NLA) and Nothofagus–Atherosperma rainforest (RMT); between Western sub-alpine scrub (SSW) and Athrotaxis selaginoides rainforest (RKP) or between buttongrass scrub and Eucalyptus nitida over rainforest (WNR). In most of these cases RML occupies a rather narrow band between rainforest and more fire-prone vegetation, and its uneven canopy and high floristic diversity may result from repeated but patchy fire incursions.

Vegetation composition and structure

RML commonly forms a band across the top of rainforested slopes with prongs running down ridge crests. This community is poorly known in detail. At its highest altitudinal range, it appears to be a mix of tall L. nitidum and alpine rainforest (Nothofagus cunninghamii Eucryphia milliganii and Richea pandanifolia). In some places, this community merges with Athrotaxis selaginoides rainforest (RKP) and appears to be of similar age. Interpretation of aerial photographs suggests that at lower altitudes near the southern west coast RML consists of thamnic rainforest with N. cunninghamii, Atherosperma moschatum, Eucryphia lucida and L. nitidum in the crown with a sparse understorey.

RML near the head of the Weld River is thamnic/implicate rainforest with Leptospermum glaucescens, Phyllocladus asplenifolius and Eucryphia lucida dominant in the canopy.

Subalpine rainforest on gentle rises north of Cradle Mountain in places consists of dwarf, many-trunked Nothofagus cunninghamii with appreciable Leptospermum langerum (and sometimes a few Eucalyptus subcrenulata) in the tightly closed canopy, and is mapped as RML. There is minimal ground cover.

The north-eastern facies of RML is floristically distinct from its western and south-western distribution. In the north-east this mapping unit is callidendrous, lacking typical thamnic rainforest species such as Eucryphia lucida and Anodopetalum biglandulosum. The typical Leptospernum species is Leptospermum langerum, in contrast with L. nitidum in the west and south-west.

Floristic communities known to occur in this mapping unit

Implicate rainforest:

Peatlands with Sphagnum:
7 Rainforest–Sphagnum mires; also occurs in RMS & RMT

Other forest/scrub communities:
1 Leptospermum nitidum closed-forest/scrub; also occurs in SRF, SSW, SWW & NLE

E2 Montane myrtle tea-tree forest

Riparian communities (Daley & Kirkpatrick 2004)
13 Nothofagus cunninghamii–Atherosperma moschatum–Poa labillardierei–Libertia pulchella–Blechnum nudum closed-scrub; also occurs in RMT
18 Nothofagus cunninghamii–Acacia verticillata–Gahnia grandis ferny closed-scrub; also occurs in RMT
Nothofagus-Phyllocladus short rainforest (RMS)

General description

Nothofagus-Phyllocladus short rainforest (RMS) is typically short (8–20 m), often implicate rainforest vegetation with moderate to high floristic diversity. It has several co-dominant canopy species including Nothofagus cunninghamii, Phyllocladus aspleniifolius and Eucryphia lucida. Eucalyptus nitida is an occasional emergent. It occupies low to moderately fertile sites in western Tasmania.

Example locality

The Creepy Crawly Nature Trail on the Scotts Peak road.

Distinguishing features and similar communities

RMS is distinguished from most other rainforest communities by the presence of the Tasmanian endemic species Eucryphia lucida, Phyllocladus aspleniifolius and Anodopetalum biglandulosum, and the absence or low cover of the conifer genera. RMS rainforest is distinguished from Nothofagus-Leptospermum short rainforest (RML) as well as Leptospermum with rainforest scrub (SRF) by the minor contribution in cover by Leptospermum species in RMS, and by the shorter (generally <5 m height) of SRF. RMS is distinguished from Nothofagus-Atherosperma rainforest (RMT) by its low stature (8–20 m), implicate structure, higher floristic diversity, often broken canopy and the diversity and prominence of shrubs and small trees in the understorey. Coastal rainforest (RCO) is distinguished from RMS by the presence of broad-leaf sclerophyll species and proximity to the coast.

RFA mapping unit

RMS is equivalent to RFA M.

Distribution

This forest is uncommon in the north-east and widespread in western Tasmania, particularly in the north-west, and the southern ranges. Rainforest vegetation has not yet been differentiated for all areas within the WHA, with much of its distribution currently mapped as Nothofagus rainforest (undifferentiated) (RMU) within the WHA.

Bioregional occurrence

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

Site characteristics, habitat and ecology

RMS occurs on acid peat soils overlying siliceous rocks and favours naturally fire-protected sites. This community does not require disturbance for its perpetuation and is adapted to stochastic disturbance events such as floods, wind damage and disease (for example, the native pathogen, myrtle wilt).

RMS is a climax forest; in many places, it is short and sometimes diverse due to poor conditions.
Vegetation composition and structure

The RMS canopy is usually a mixture of *Nothofagus cunninghamii*, *Phyllocladus aspleniifolius* and *Eucryphia lucida*. The canopy height may be up to 25 m and forms a closed forest although it is often very broken and uneven. Other canopy species may include *Acacia mucronata*, *Anodopetalum biglandulosum*, *Atherosperma moschatum* and *Eucryphia milliganii* (above 600 m).

The understory is usually a tangled layer including *Anodopetalum biglandulosum*, *Anopterus glandulosus* and *Orites diversifolia*, *Telopea truncata*, *Tasmaania lanceolata*, *Lomatia polymorpha*, *Pittosporum bicolor*, *Olearia persoonioides*, *Pimelea drupacea* and *Coprosma nitida*. Epacridaceae present include *Leptecophylla* species, *Monotoca* species, *Trochocarpa* species and *Archeria* species. *Richea milliganii* and *Richea pandanifolia* are sometimes present at mid- to higher-altitudes. Epiphytic ferns are prominent.

Floristic communities known to occur in this mapping unit

**Implicate rainforest:**

I1.1 *P. aspleniifolius*–*N. cunninghamii*–*Myrtaceae* spp. over a diverse tangle with *A. odorata*

I4.1 *P. aspleniifolius*–*N. cunninghamii*–*E. lucida*–*A. biglandulosum* over *T. gunnii*–*T. cunninghamii*–*P. aspleniifolius*–*P. eriocarpa*–*A. hirtella*

**Thamnic rainforest:**

T1.1 *N. cunninghamii*–*E. lucida* (– *P. aspleniifolius*) over *A. glandulosus*; also occurs in RMT

T2.1 *N. cunninghamii*–*Eucryphia lucida* over *Acradenia frankliniae*; also occurs in RMT

T3.1 *N. cunninghamii*–*E. lucida* (– *P. aspleniifolius*) over *A. glandulosus*–*R. pandanifolia*

T4.1 *N. cunninghamii*–*E. lucida* (– *P. aspleniifolius*) over *Archeria enocarpa*–*A. hirtella*

T5.1 *N. cunninghamii*–*A. moschatum*–*E. lucida* over *T. gunnii*; also occurs in RMT

T6.1 *Nothofagus cunninghamii*–*Phyllocladus aspleniifolius* over *Trochocarpa cunninghamii*

T7.1 *P. aspleniifolius*–*N. cunninghamii* (– *E. lucida*) over *D. tasmanica*–*T. cunninghamii*–*B. wattsii*

T8.1 *N. cunninghamii*–*P. aspleniifolius*–*E. lucida* over *C. nitida*

**Alpine vegetation:**

38 *Nothofagus cunninghamii*–*Prionotes cerinthoides* heath; also occurs in HHW, RSH & SSW

**Peatlands with Sphagnum:**

7 Rainforest–Sphagnum mires; also occurs in RMT & RML

**Additional communities (Forest Botany Manual)**

Intermediate rainforest

RAIN–CT3 *P. aspleniifolius* (– *N. cunninghamii*) over clear u's

RAIN–CT4 *Phyllocladus aspleniifolius* over scattered Proteaceae

RAIN–CT7 *N. cunninghamii*–*A. moschatum* (– *P. aspleniifolius*) over *A. glandulosus*–*B. wattsii* (– *D. antarctica*)

**Riparian communities (Daley & Kirkpatrick 2004)**

19 *Nothofagus*–*Eucryphia*–*Phyllocladus*–*Trochocarpa*–*Libertia* shrubby closed-forest
Nothofagus gunnii rainforest scrub (RFS)

General description
Subalpine *Nothofagus gunnii* open or closed canopy rainforest scrub may be dense and continuous or form mosaics with alpine heathlands and sedgeland. In the Central Highlands and Cradle Mountain–Lake Saint Clair National Park, there may be few other species apart from sparsely scattered emergent *Athrotaxis cupressoides* and/or *A. selaginoides*.

In the west, RFS generally has an uneven canopy and is floristically diverse. Subalpine *N. gunnii* or *Diselma archeri* scrubs occur on parts of the Mount Read Plateau, while a subalpine facies north-east of Mount Bobs lacks *D. archeri* but has “stumps” of *Dracophyllum milliganii*.

RFS occurs mainly between about 900 m and 1200 m.

RFA mapping unit
Not covered by RFA mapping.

Distribution
The stronghold is the unburnt mountains and ranges areas of the Tasmanian Central Highlands Bioregion with remnants mapped in other highland areas of western Tasmania (e.g. Frenchmans Cap, Raglan Range, Mt Anne) and in the Tasmanian Southern Ranges Bioregion (e.g. Mt Field, Snowy Range, Mt Bobs).

Bioregional occurrence
TCH, TNS, TSR, TWE.

Site characteristics, habitat and ecology
RFS occurs in subalpine and alpine situations on all substrates, including stable scree where fire has been long absent. The more diverse facies of RFS are usually found on siliceous substrates.

Vegetation composition and structure
In the Central Highlands, particularly on sloping dolerite scree fields, RFS is generally dominated by dense, closed canopy *N. gunnii* with possibly a few emergent *Athrotaxis cupressoides* and/or...

Example localities
King William Range near Slatters Peak; Dundas Plateau.

Distinguishing features and similar communities
Only three communities contain *Nothofagus gunnii*. On the west coast mountains of Tasmania, RFS often grades into *Athrotaxis selaginoides–Nothofagus gunnii* short rainforest (RKF). RKF is taller and denser than RFS and generally lacks sedgy openings. On some of the dolerite mountains *N. gunnii* with appreciable emergent *Athrotaxis cupressoides* (+/- some *A. selaginoides* and sometimes sparse *Eucalyptus coccifera*) is mapped as *Athrotaxis cupressoides–Nothofagus gunnii* short rainforest (RPF). It is distinguished from RFS which in the same areas is generally nearly pure *N. gunnii* in dense stands up to 3 m high.
A. selaginoides. There may be other alpine heath species present. On gentler terrains where some peat soils have developed there may be a mosaic of nearly pure N. gunnii stands and sedgelands or sedgy heathlands.

On siliceous substrates in the west, RFS is generally open and more diverse, with N. gunnii and Diselma archeri plus some Orites milliganii and sometimes a few dwarf A. selaginoides. Persoonia gunnii is usual and underneath there may be Astelia alpina, Anemone crassifolia and Trochocarpa gunnii with moorland monocotyledonous species.

Scrubs that have apparently remained unburnt for a very long time surround the peak of Mount Dundas on a plateau underlain by mudstones, and are also found on the southern side of the Mount Read Plateau. A floristically diverse facies of RFS containing a very high number of Tasmanian endemic species occurs on Mount Read. Openings are an important part of the community with variable amounts of Empodisma minus, Xyris species, Gleichenia alpina, Sprengelia montana, Astelia alpina, Oreobolus pumilio, Carpha alpina, herbs and moss.

Floristic communities known to occur in this mapping unit

Alpine vegetation:
34 Nothofagus gunnii–Richea scoparia deciduous heath; also occurs in HCH
36 Nothofagus gunnii–Orites milliganii deciduous heath; also occurs in HCH
40 Nothofagus gunnii–Exocarpos humifusus deciduous heath; also occurs in HCH

Montane rainforest:
M1.1 Athrotaxis cupressoides-A. selaginoides over Nothofagus gunnii–Richea pandanifolia, also occurs in RKS & RPF (understorey affinities)
**Nothofagus rainforest (undifferentiated) (RMU)**

**General description**

*Nothofagus* rainforest (undifferentiated) (RMU) is a generic code that has been used to map two communities: *Nothofagus-Atherosperma* rainforest (RMT) or *Nothofagus/Phyllocladus* short rainforest (RMS) where the separation of these communities using remote-mapping methods has not been possible.

It is intended that rainforest mapped as RMU will be attributed to these more specific units as mapping is revised. Continued use of RMU is discouraged and limited to use where field access is not possible and remote allocation to a more specific unit is not advised.

**Example localities**

Not applicable.

**Distinguishing features and similar communities**

Where possible, all areas mapped as RMU should be re-coded to one of the following: *Nothofagus-Atherosperma* rainforest (RMT) or *Nothofagus/Phyllocladus* short rainforest (RMS).

Distinguishing features and similar communities are detailed for the specific ecological vegetation communities.

**RFA mapping unit**

RMU is equivalent to RFA M+ and M-.

**Distribution**

As for RMT and RMS.

**Bioregional occurrence**

The bioregions in which undifferentiated *Nothofagus*-dominated rainforest is still mapped are as follows: BEL, FUR, KIN, TCH, TNS, TSE, TSR, TWE.

**Site characteristics, habitat and ecology**

As for RMT and RMS.

**Vegetation composition and structure**

As for RMT and RMS.

**Floristic communities known to occur in this mapping unit**

As for RMT and RMS.
Rainforest fernland (RFE)

**General description**

This community consists of dense *Dicksonia antarctica* cover occupying broad gullies, where trees are locally absent, amidst rainforest. The mapping unit has also been used for disturbance windows or zones marginal to rainforest where *Histiopteris incisa* may dominate.

**Example locality**

Gully below Keoghs Lookout on the Arve River Road.

**Distinguishing features and similar communities**

The community is distinctive as it is the only one dominated by *Dicksonia antarctica* or *Histiopteris incisa* in association with other rainforest species.

**RFA mapping unit**

Not covered by RFA mapping. Small patches are likely to have been mapped in RFA M- and M+.

**Distribution**

Widespread, particularly in the north-west rainforests and extensively mapped in the Ben Lomond Bioregion.

**Bioregional occurrence**

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

**Site characteristics, habitat and ecology**

This mapping unit frequently occurs in steep gullies, particularly where a tree cover has not been maintained because of shallow soils or steep slopes. The community is maintained by a combination of site factors that favour the ferns over tree development. For *Histiopteris incisa*, these may be local disturbance factors such as wind throw or spot fire, and the disturbance community is transitional.

**Vegetation composition and structure**

*Dicksonia antarctica* may form a uniform canopy in the best examples, which are visible from the air in the Savage River rainforests. Rainforest species may be present in the understorey; indeed rainforest trees frequently germinate on the tree fern stems. In the *Histiopteris incisa* communities, the canopy may be low but sometimes tree seedlings and wind-thrown trees may be present.

**Floristic communities known to occur in this mapping unit**

No equivalent floristic communities have been identified for this mapping unit.