

MICROPHYLL RAINFORESTS AND THICKETS OF THE WET TROPICS BIOREGION

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Microphyll rainforests and thickets (vegetation codes 14a-17b)



Microphyll rainforest and thicket types include all rainforest communities where the dominant canopy leaf size is less than 7.5cm in length (Webb, 1959). Environmental gradients of increasing adversity are generally responsible for a reduction in leaf size from mesophyll to notophyll and from notophyll to microphyll. In the tropics, microphyll leaves generally indicate an environmental stress, whether this stress is exposure (wind and salt), limiting edaphic conditions and/or climatic influences. These stresses also prevent the development of complex structural features, although the broad range of topographies and climates across the region has resulted in a high level of floristic diversity encountered within these rainforest and thicket types.

Parts of the very wet Bellenden Kerr Range uplands host a variety of simple microphyll vine-forest (SMVF) types ranging from wind sheared vine/fern thickets with emergent *Leptospermum woornooran* (type 14a) on upper ridges and peaks, to *Cinnamomum propinquum* dominant SMVF (type 14d) on upper mountain slopes, which grade into notophyll forest types further down slope as wind exposure decreases and edaphic conditions improve. A unique palm dominant variation associated with soils of extreme infertility and impeded drainage is found in the very wet Towalla area. A range of upland microphyll vine thicket (MVT) communities have been identified which are controlled by extreme wind exposure, acidic infertile soils and impeded soil drainage.

Slope instability coupled with low soil moisture availability is responsible for the development of deciduous microphyll thickets (DMT) that form discrete groves on the boulder slopes of Black Mountain in the Helenvale area. Boulder slope thickets near Rollingstone in the south of the bioregion, and the extensive boulder slope communities on Palm Island are similarly classified. These southern examples are, however, distinguished by possessing more semi-evergreen vegetation with a greater number of facultatively deciduous species in their emergent layer including *Pleiogynium timorense* and *Paraserianthes toona*.

Facts and figures

Vegetation alliances

Simple microphyll vine-fern forests (SMVF)
Microphyll vine thickets (MVT)
Deciduous microphyll thickets (DVT)
Microphyll fern thickets (MFT)

Current extent in the bioregion

2,967ha

Area protected

25,039ha (84%)

Geography

The most extensive occurrences of microphyll rainforests and thickets occur in the largely inaccessible wet highland sections of Mount Bartle Frere, the Bellenden Kerr Range, the Mount Carbine Tableland and Thornton Peak. Microphyll forests and thickets in the drier climatic regions are typically restricted to areas of slope instability, salt and wind exposure, and extremely porous soil types. Scattered occurrences of limited spatial extent are mapped throughout most sub-regions of the Wet Tropics

Impacts and changes

Highland communities and communities on steep boulder slopes have undergone limited structural change. High altitude summit areas are very vulnerable to climate change impacts including reduced cloud interception.

Key values

- A vegetation community with a relatively high number of rare and threatened, spatially restricted and disjunct plant species including: *Leptospermum woornooran*, *Dracophyllum sayeri*, *Cinnamomum propinquum*, *Alyxia orophila*, *Rhododendron lochiaie*, *Trochocarpa bellendenkerensis*, *Acronychia chooreechillum*, *Trachymene geraniifolia*, *Paphia meiniana*, *Flindersia oppositifolia*, *Linospadix palmeriana*, *Pouteria singuliflora*, *Polyosma rigidiuscula*, *Quintinia quatrefagesii* and *Palmeria hypotephra*.
- “Cloud forests” that strip water from clouds (occult precipitation) and assist in dry season stream flows.

References

Webb, L.J. (1959). A physiognomic classification of Australian rainforests. *Journal of Ecology* 47: 551-570.



Threatening processes

- Recreational usage of coastal fore dune areas
- Possible dieback caused by *Phytophthora cinnamomi*.
- Lantana (*Lantana camara*) invasion of microphyll thickets on the Mt Fox Volcanic cone
- Climate change.

Tenure

Major upland and highland areas are protected within the World Heritage Area. The best preserved examples are all contained within National Parks including (Wooroonooran and Daintree National Parks). Examples located on Palm Island are on land held under native title agreement.

Management considerations

- Weed control
- Infrastructure maintenance (for example telecommunication towers)