

# SCLEROPHYLL FORESTS AND WOODLANDS OF THE WET TROPICS BIOREGION

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## Eucalypt forests and woodlands (vegetation codes 23a-48b)



**Eucalypt forests and woodlands occur within all except the very wettest parts of the bioregion and display considerable structural and floristic variation across their range. This formation includes both *Eucalyptus* spp. and bloodwood species (*Corymbia* spp.).**

Adaptation to fire is a defining feature of eucalypt species and all are capable of regeneration following a fire event. Eucalypts are shade intolerant to varying degrees and all are incapable of regeneration under a closed canopy.

The alliance is characterised by well ordered floristic associations which are consistently repeated across the landscape. Variations across the alliance are strongly controlled by environmental factors including topography, geology and soil attributes such as fertility, texture, depth and drainage. Optimal development occurs in moist cloudy upland situations on deep well-drained soils where tall open forests of *Eucalyptus grandis*, *Eucalyptus resinifera* and *Syncarpia glomulifera* form on the western margins of the central rainforest massif. These forest types are typically referred to as 'wet sclerophyll' forests and canopy heights of up to 60m have been observed in some locations. Reduction in forest stature and canopy cover is generally due to increasing environmental adversity, typically the result of decreasing moisture availability or sub-optimal edaphic conditions.

Across a typical rainfall gradient from wet upland locations (2500mm) to the drier western margins of the bioregion (1500mm), general changes to eucalypt forests will include:

- a reduction in forest stature
- changes in floristic composition
- a reduction in canopy foliage cover, and
- an increasing dominance of sclerophyll species within all structural layers.

Whilst some eucalypt species are relatively adaptable, others are specialised and rarely found away from specific niches. *Eucalyptus grandis* and *Eucalyptus resinifera* for example, are restricted to wetter locations on fertile soils; *Eucalyptus portuensis*, *Eucalyptus reducta* and *Corymbia intermedia* are found across a broad range of environmental conditions, and certain species including *Eucalyptus shirleyi*, *Eucalyptus atrata*, *Corymbia leichhardtii* and *Corymbia dimorpha* are found only in the drier western fringes of the bioregion.

The relative robustness of many of the floristic associations within this formation is remarkable given the broad tolerances of many species. However, a major change in structural or floristic attributes can often be linked to abrupt geological or landform boundaries.

Ecotonal changes across climatic gradients may be less

abrupt amorphous and more difficult to characterise in a mapping sense, being expressed as subtle variations in the relative proportions of the floristic components that affects all structural layers.

## Facts and figures

### Vegetation alliances

- Corymbia abergiana* forests and woodlands
- Corymbia citriodora* woodlands
- Corymbia clarksoniana* woodlands
- Corymbia dallachiana* woodlands
- Corymbia hylandii* woodlands
- Corymbia intermedia* forests and woodlands
- Corymbia nesophila* forests and woodlands
- Corymbia stockeri* woodlands
- Corymbia tessellaris* forests and woodlands
- Eucalyptus atrata* woodlands
- Eucalyptus chlorophylla* woodlands
- Eucalyptus cloeziana* forests and woodlands
- Eucalyptus crebra/granitica* woodlands
- Eucalyptus cullenii* woodlands
- Eucalyptus drepanophylla* forests and woodlands,
- Eucalyptus grandis* forests and woodlands
- Eucalyptus leptophleba* forests and woodlands
- Eucalyptus moluccana* woodlands
- Eucalyptus pellita* woodlands]
- Eucalyptus platyphylla* forests and woodlands,
- Eucalyptus portuensis* forests and woodlands
- Eucalyptus reducta* forests and woodlands
- Eucalyptus resinifera* forests and woodlands
- Eucalyptus shirleyi* forests and woodlands
- Eucalyptus tereticornis* forests and woodlands
- Eucalyptus tetrodonta* woodlands

### Current extent in the bioregion

592,644ha

### Area protected

223,757ha (38%)



## Geography

Eucalypt forests and woodlands are a major formation that broadly envelope the central rainforest massif, occurring in all Wet Tropics subregions and topographic/climatic zones with the possible exception of the very wet highlands. Maximum development occurs as tall 'wet sclerophyll' forests in wet uplands. There is significant structural diversity in the bioregion from the tall 'wet sclerophyll' forests to stunted open woodland alliances on the drier bioregional margins.

## Impacts and changes

Changes to burning regimes, grazing and logging activities have had a dramatic affect on many eucalypt alliances. In particular, eucalypt forests in those areas receiving 2000+ mm rainfall on better soils (on the basis of fertility, depth, texture, and drainage) are prone to rapid capture by a shrub and tree understorey in the absence of fire, eventually moving to a state of irreversible habitat change.

The bioregion's wet sclerophyll forests have undergone the most dramatic changes. Altered fire regimes, coupled with canopy disturbance associated with past logging activities has facilitated the conversion of extensive tall grassy forest to sclerophyll vine forest. Associated with this is the broad scale loss of habitat for a number of restricted fauna species..

Similar landscape processes have affected eucalypt forests on the coastal plain and adjacent foothills. Within the Girramay National Park, for example, observations suggests that shrub invasion of most of the coastal country began in earnest over a decade ago and has been exacerbated in recent times by a series of wet years. In many areas on the coastal dunes south of the Murray River it was observed that the ground cover had largely disappeared and that burning of these areas in the future is likely to prove difficult (Peter Stanton *pers. comm.*). Shrubby thickening of eucalypt forest associated with a reduction in landscape burning threatens the habitat of the mahogany glider (*Petaurus gracilis*) in this location (Peter Stanton *pers. comm.*).

## Key values

- An extensive formation which provides for considerable landscape diversity
- They are a major seasonal resource for nomadic nectar seeking birds and mammals.

## Threatening processes

- Altered fire regimes.
- Invasions by exotic plants, typically exotic pasture grasses and other environmental weeds.
- Logging activities in many of the better developed eucalypt forest formations.

## Tenure

Extensive areas contained within a large number of National Parks and State Forests including Kirrama SF and Paluma SF, Girringun NP, Tully Falls NP and Girramay NP. Small areas on the western margins are contained within the private conservation fund estate (Mount Zero and Taravale).

## Management considerations

- The removal of fire from large parts of the bioregion in recent decades has resulted in habitat changes over large areas
- Appropriate fire management is particularly needed in the wet sclerophyll and coastal habitats that support 3 endangered mammal species
- Action is needed to identify and implement appropriate methods for the elimination of infestations of exotic grasses, and to prevent their further spread in a range of woodland communities on better developed soils types
- The Mount Carbine Tablelands provides one of the few remaining areas of virgin wet sclerophyll forest which has retained a natural grassy ground cover and provides an excellent opportunity for future conservation and land management programs.