

VEGETATION COMPLEXES AND MOSAICS OF THE WET TROPICS BIOREGION

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Wetland complexes (vegetation codes 63a-63b)



The structure and floristic composition of this formation varies both spatially and temporally. The formation includes open wetlands, sedgeland, shrubland, woodlands, closed forests and a range of transitional communities. This complexity may be in response to variations in a number of edaphic controls such as soil drainage capacity, fertility or hydrological regime. Dynamic processes such as prevailing fire or cyclone history may provide a further control on vegetation structure. In this regard, these communities present some difficulty in respect to classification as they demonstrate features characteristic of both wetland communities and a number of associated dryland woodland and forest types.

Association 63a displays features characteristic of both rainforest and permanent swamp. The ground cover is dominated by the giant sedge *Thoracostachyum sumatranum*. The community has a woodland structure, often quite open, composed of rainforest tree and shrub species which are scattered or clumped throughout the area and generally of low to medium height. Typical species include *Barringtonia racemosa*, *Pandanus monticola*, *Schefflera actinophylla*, *Macaranga inamoena*, *Guioa acutifolia*, *Ficus congesta*, *Timonius timon*, *Ilex arnhemensis* and *Hibiscus tiliaceus*. Climbers such as the fern *Stenochlaena palustris* and the pandan *Freycinetia scandens* are conspicuous. Epiphytic ferns, particularly the basket fern *Drynaria rigidula* are prominent. The soil is humic gley.

Association 63b is floristically aligned to the *Melaleuca quinquenervia* woodland and forest alliance, however it ranges structurally from a closed sedgeland to heath to shrubland. It is confined to wet sites on organic peat soils. Its structural expression may fluctuate depending upon fire history. Hot fires during periods of high water levels will often scorch woodland components, resulting in regeneration of a dense *Melaleuca quinquenervia* shrubland. Similar fires during drier periods, when surface layers of peat are ignited, may destroy *Melaleuca* regeneration. In this regard, unlike the sedges, *Melaleuca quinquenervia* may not necessarily form a permanent component of this community and in some areas it may be almost entirely open sedgeland. If present, *M. quinquenervia* is found as scattered low shrubs or clumps of shrubs. The sedgeland phase may be distinguished from wetland Association 69c (dominated by *Lepironia articulata*) by the mixed nature of its species composition and sparse ground cover.

Facts and figures

Vegetation alliances

Wetland complexes

Current extent in the bioregion

669ha

Area protected

156ha (23%)

Geography

The formation is restricted to lowland swamps in the area between Gordonvale and Cardwell. Association 63a is the more restricted variation being restricted entirely to the Cooper Point area. Association 63b is scattered throughout the broader geographic range.

Impacts and changes

This association has been heavily impacted by swampland reclamation. If not directly impacted, the associated alteration of the prevailing hydrological regime has undoubtedly compromised the viability of these communities, permanently altering the floristic composition of ground layers and exposing the community to a number of degrading processes including infestation with pond apple and increased susceptibility to hot wildfire.

Key values

They are an important part of the hydrological regime of river basins, and their removal leads to increased concentration of flood flows with consequent streambank erosion and heightened flood events.

As well as their scenic amenity and habitat value to a broad range of fauna species, coastal wetlands provide an important sink for nutrients. The reduction in extent and viability of lowland wetlands has resulted in increased nutrient dispersal into the near shore marine environment.



Threatening processes

- Edge effects associated with fragmentation, including invasion by *Annona glabra* (pond apple)
- Altered hydrological regimes resulting in permanent changes to the association's floristic and structural composition
- Direct clearing
- Incursion of severe wildfire into areas where water levels have been anthropogenically altered.

Tenure

The most extensive and best preserved examples area found within the Russell River NP and the Russell River mouth. Minor areas scattered on freehold land northwards from Kurrimine Beach.

Management considerations

- Control of exotic species (shrub and ground layers)
- Restoration of natural drainage regimes
- Fire management and monitoring to maintain the ecosystem's structural complexity and variability.