Estuarine Wetland

mangrove

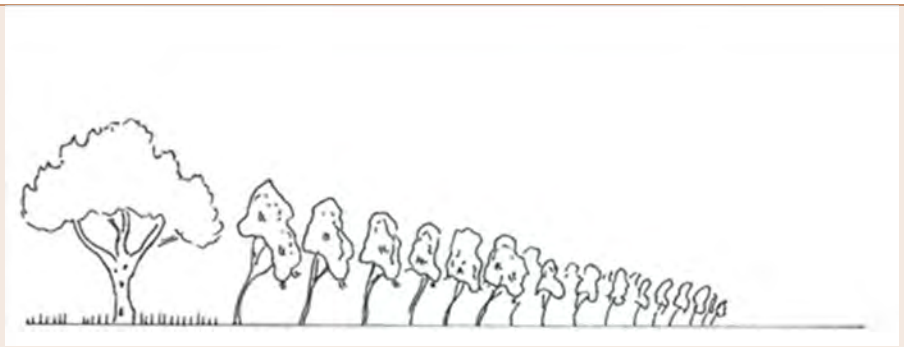
VEGETATION TYPE 18a

Regional Ecosystem: 12.1.3

River Mangrove (*Aegiceras corniculatum*)
Low Open Forest on Marine Deposits

COMMUNITY STRUCTURE

River Mangrove low open forest consists of a dense shrubland to low open forest between 1m and 4m high, and with a canopy cover of 50-95%. River Mangrove (*Aegiceras corniculatum*) is the dominant and diagnostic species, and typically occurs and dense single species stands, or where other mangroves occur River Mangrove is still the dominant species.

Emergent		Isolated trees 4 – 8 m Sparse <5% cover
Shrub		Shrubs 1-4m Dense 50-95% cover

Source: Searle, 2019 (derived from Ryan et al (2019); plus review of all Gold Coast City marine wetland sites)

Characteristic plant species

Approximately **17 native plants species** have been recorded for this vegetation type. Characteristic plant species for this vegetation type are listed below. Dominant (most numerous) species are shaded. Plants in blue text are listed as Wetland Indicator Species in DES Flora Wetland Indicator Species List and are adapted to and dependent on wetlands.

CWS Indicates species is a City-wide significant species

CANOPY

Upper layer of trees exposed to sunlight which creates a canopy that shades lower layers.

River Mangrove

Aegiceras corniculatum

Grey Mangrove

Avicennia marina

Black Mangrove

Bruguiera gymnorhiza

Milky Mangrove

Excoecaria agallocha

Yellow Mangrove

Ceriops tagal var. australis

Stilted Mangrove

Rhizophora stylosa

SHRUB LAYER

Middle layer of vegetation usually made up of small trees and woody shrubs

Grey Saltbush

Atriplex australasica

Berry Saltbush

Einadia hastata

Ruby Saltbush

Enchylaena tomentosa

GROUND LAYER

Lowest layer of vegetation. Plant types can include marine grasses, graminoids (non-woody plants with a grass-like morphology), forbs (non-woody, broad-leaved, flowering plants) and samphires (succulent, herbaceous plants that grows in high salinity environments).

Streaked Arrow Grass

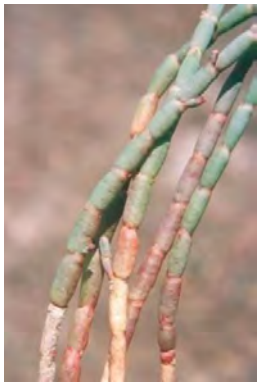
Cycnogeton striata

GRAMINOID (SEDGE)

Sea Tassel

Ruppia maritima

AQUATIC



Beaded Samphire

Sarcocornia quinqueflora

SAMPHIRE

Saltwater Couch

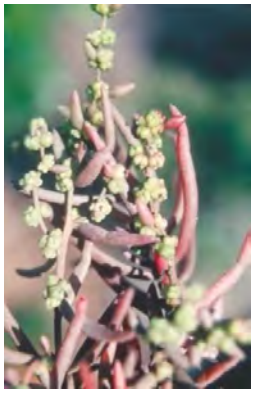
Sporobolus virginicus

GRASS

Jellybean Sea Blite

Suaeda arbusculoides

SAMPHIRE



Sea Blite

Suaeda australis

SAMPHIRE

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EPIPHYTES & MISTLETOES

Species that grow on the surface of other plants. Unlike epiphytes, mistletoes are parasitic and derive some or all of their nutritional requirements from the plant on which they grow.

Mangrove Mistletoe
Amyema mackayensis
MISTLETOE

Tiny Bulbophyllum
Bulbophyllum minutissimum
EPIPHYTE

City-wide significant plant species

CWS

The City of Gold Coast recognises species which are locally significant as City-wide significant (CWS) species. These species are important because they may be threatened, restricted to the Gold Coast, or at the edge of their geographic range. Characteristic species which are CWS species are identified above. No other CWS plant species have been identified for this vegetation type.

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OCCURRENCE

Native plants occur in vegetation communities, which are consistently associated with a particular soil type, landform (shape of the land, e.g. hills or plains) aspect (position on a slope in relation to the sun) and climate.

River Mangrove low open forest generally occurs on the outer fringe of mangrove communities lining rivers and estuaries, and may form a dense broad fringing layer or a narrow shrubland fringe 1-2 trees wide depending on location. It is mainly present on Moreton Bay Islands and the coastline of mainland Moreton Bay between Pimpama and the southern mouth of the Albert River. This vegetation type occurs in association with other mangrove and marine grassland/herbfield communities (VT18b-f, and VT22a-d). Mapped localities include the Southern Moreton Bay Islands and associated mouths of the Albert, Pimpama and Coomera Rivers, Coombabah wetlands, and Tallebudgera and Currumbin Creeks.

Historic distribution of Vegetation Type 18a

LEGEND

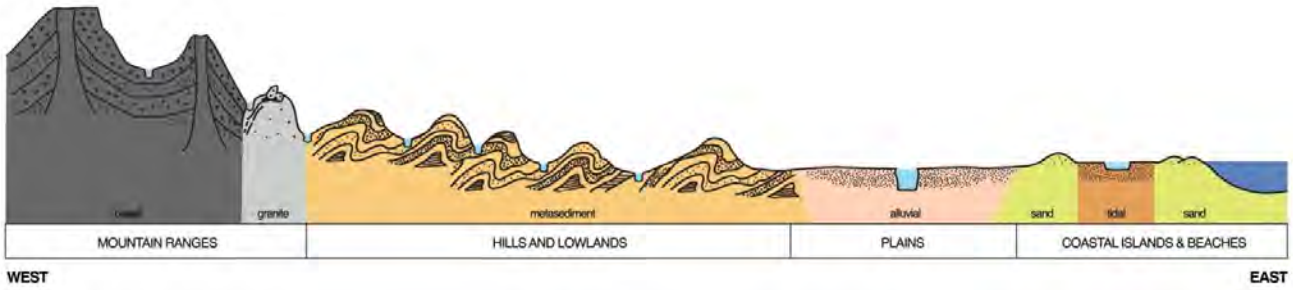
Vegetation Type 18a | Ocean | Major Waterways

COMMON LANDFORMS AND GEOLOGY OF THE GOLD COAST

	LAND FORM	GEOLOGY (soils and rocks)	AGE
	Tidal flats and beaches (subject to tidal inundation)	**Water logged, saline muds, clays and sands**	Youngest
	Coastal dunes and beach ridges (not subject to tidal inundation)	**Coastal sands**	
	Flood plains, river and creek flats	Alluvial soils (soils moved or shaped by water)	
	Level or gently undulating plains	Sandy or loamy soils	
	Mountain ranges, hills, lowlands and coastal headlands	Basalt (volcanic) rocks	
	Undulating	Sedimentary rocks	
	Mountain ranges, hills and lowlands	Metasediment rocks*	
	Mountain ranges, hills, lowlands and coastal headlands	Granite (volcanic) rocks	Oldest

Conceptual cross section of Gold Coast

Showing typical location of most common geology and land forms (concept only, not to scale)



*** Metasediment rocks**

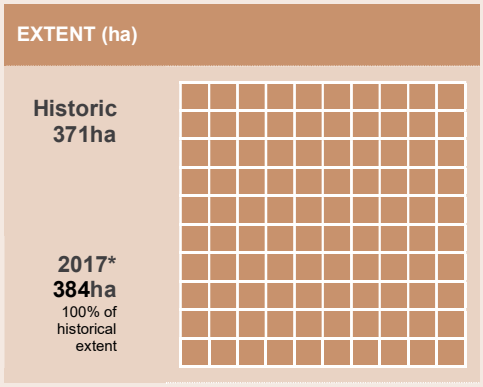
The most common underlying geology on the Gold Coast is metasediment rocks. Metasediment rocks are a type of metamorphic rock (rock transformed by heat and pressure). Originally these rocks were sedimentary rocks which were formed on the ocean floor through the deposition and solidification of sediment. These sedimentary rocks were subsequently buried underneath other rocks and subjected to high pressures and temperatures, causing the rock to recrystallize. This recrystallization process is known as metamorphosis, hence the term metamorphic rocks. About 300 million years ago these metamorphic rocks were pushed upward by geologic processes, creating much of the ranges, hills and lowlands on the Gold Coast.

2017 EXTENT AND CONSERVATION STATUS

Gold Coast

Historically, one of the less common tidal wetland vegetation types but all its historical extent remains. The 2017 extent* of this vegetation type on the Gold Coast was 384 hectares.

1 HECTARE (HA) = 2.46 ACRES ≅ THE SIZE OF AN INTERNATIONAL RUGBY FIELD

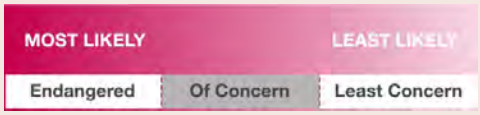


* Extent as mapped in 2017. Includes remnant vegetation only. Does not include disturbed remnant or regrowth.

Queensland

The conservation status of vegetation in Queensland is specified under the *Vegetation Management Act 1999*, which lists this regional ecosystem (RE 12.1.3) as being 'Of Concern'.

LIKELIHOOD OF BECOMING EXTINCT (in QLD) due to biodiversity loss/degradation



USEFUL RESOURCES

City of Gold Coast website: Environmental weeds and invasive plants.

Find out more about regional ecosystems at the Queensland Government Regional Ecosystems webpage.

CREDITS

Content – ngh Environmental and Jason Searle.
Vegetation Type Photo – Lui Weber ©
Unless otherwise noted all other photos – Glenn Leiper ©

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THREATS

River Mangrove low open forest occurs on tidal creeks and is subject to disturbance from storms and other seasonal weather events. Consequently, sea level rise and potential increased erosion associated with increasing and extreme weather events suggests that Climate Change has the potential to significantly impact on this vegetation community. Weeds are generally a low threat to this community, as it occurs in lower tidal areas.

About common threats:

Clearing

Native vegetation is protected by Federal, State and local legislation. However, with increasing population growth in the region, Southeast Queensland is experiencing large amounts of vegetation clearing, particularly in areas designated for urban development. Protecting native vegetation on your property is one of the most beneficial things you can do to protect wildlife and the natural environment.

Weeds

Environmental weeds are the second biggest threat to our natural environment after land clearing. Environmental weeds (introduced plants that have naturalised and are invading our bushland) degrade our natural environment by:

- out competing native plant species for available nutrients and light,
- taking over and transforming native landscapes often leading to local plant or animal extinctions and loss of biodiversity,
- reducing the availability of food and other resources for many native animals whilst sometimes benefiting pest animals,
- increasing the risk of destructive wildfire, and/or
- often being toxic to people and animals.

Fire

Very broadly, vegetation is either adapted to fire or fire sensitive. Fire can become a threat if:

- it extends into vegetation types which should not be burnt e.g. rainforest
- the frequency and/or intensity of the fire is too high
- the area burnt is too large.

Grazing

The grazing of animals like cattle, horses, goats and feral animals such as deer can cause trampling or loss of diversity of seedlings and compact soil, preventing natural regeneration.

Collecting

Unethical and illegal collection of plant specimens in the wild poses a serious threat to some species, particularly orchids, grass trees and epiphytes.

Climate change

Changes in temperature and rainfall can have significant effects on our city's vegetation. For example, without consistent rainfall, areas become drier, potentially resulting in higher fire frequency and/or intensity, which some plants and vegetation communities won't be able to tolerate. Plants (and animals) need available space to migrate as conditions change, with high altitude species at the greatest risk as there is nowhere suitable for them to go. Warmer conditions may also provide the right habitat for a greater variety of weeds. As sea levels rise, salt water moves further upstream and vegetation also becomes inundated.

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