VEGETATED WETLAND

tree

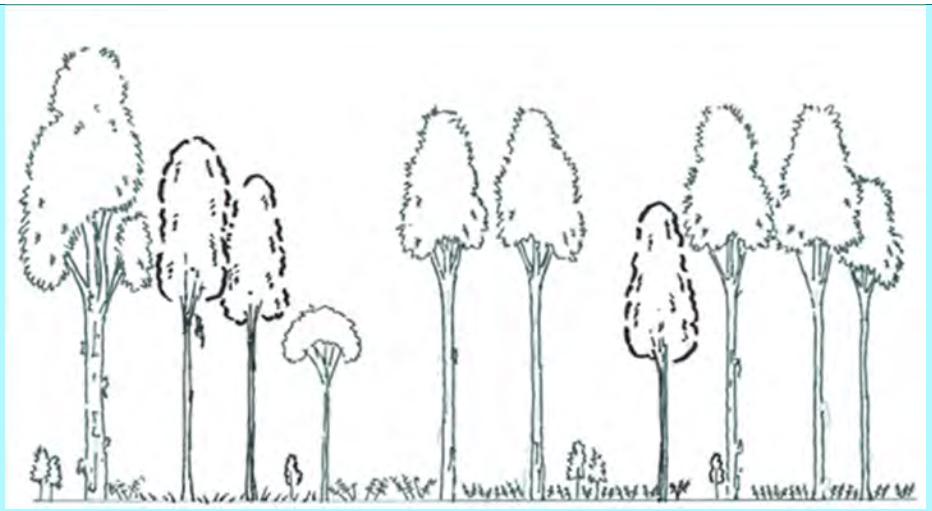
VEGETATION TYPE 15

Regional Ecosystem: 12.3.20

Broad-leaved Paperbark/Swamp Oak +/- Forest Red Gum (Melaleuca *quinquenervia*/ *Casuarina glauca* +/- *Eucalyptus tereticornis*) Open Forest on Alluvium

COMMUNITY STRUCTURE

The vegetation type is a woodland to open forest characterised by a canopy in which Broad-leaved Paperbark (*Melaleuca quinquenervia*) is the dominant canopy tree. Swamp Oak (*Casuarina glauca*) is co-dominant as a canopy or sub-canopy tree, and the presence of both these trees distinguishes this vegetation type. This community occurs on low-lying areas which are often very wet, with standing water occurring for much of the year, and can be described as vegetated swamps. They are also typically in or near tidal areas, and may be subject to some saline influence.

Canopy		Tall-medium trees 14 – 26m Mid-dense 15-40% cover
Sub canopy		Medium to small trees 6–15m Sparse-mid-dense 10-45% cover
Shrub		Shrubs 1–5 m Sparse 0-10% cover
Ground		Grassy 0-1m high Dense 60-90% cover

Source Ryan et al (2019); GC209

The shrub layer is typically sparse, and mostly include saplings of canopy trees. The ground cover is typically dense, often with Swamp Water Fern (*Blechnum indicum*) as a conspicuous component, although a variety of ferns, sedges, grasses and rushes often also occur.

Characteristic plant species

Approximately **8** 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.

Indicates species is a preferred koala food tree*

GBC Indicates species is a Glossy Black-Cockatoo feed tree species

CWS Indicates species is a City-wide significant species

* It is noted that in addition to preferred food trees, koalas utilise a range of eucalypt and non-eucalypt tree species for supplemental feeding and other uses such as shelter. These other species are also important and necessary features of koala habitat.

CANOPY

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

Broad-leaved Paperbark

Melaleuca quinquenervia

Swamp Oak

Casuarina glauca

Forest Red Gum

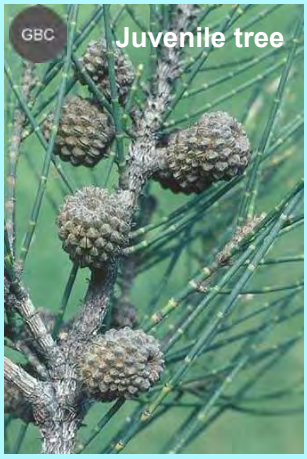
Eucalyptus tereticornis

SHRUB LAYER

Tree layer below canopy

Broad-leaved Paperbark

Melaleuca quinquenervia



Swamp Oak

Casuarina glauca

Blue Tongue

Melastoma malabathricum

Hickory Wattle

Acacia leiocalyx

GROUND LAYER AND VINES

Lowest layer of vegetation. Plant types can include grasses; graminoids (non-woody plants with a grass-like morphology); ferns; forbs (non-woody, broad-leaved, flowering plants) and vines (where present) may extend upwards into the canopy.

Swamp Water Fern

Blechnum indicum

FERN

Lesser Joyweed

Alternanthera denticulata

FORB

Pale Knotweed

Persicaria dichotoma

FORB

Common Silkpod

Parsonsia straminea

VINE (CLIMBING)

Swamp Ricegrass

Leersia hexandra

GRASS

Blady Grass

Imperata cylindrica

GRASS

Ditch Millet

Paspalum scrobiculatum

GRASS

Grey Rush

Lepironia articulata

GRAMINOID (SEDGE)

GROUND LAYER AND VINES

Lowest layer of vegetation. Plant types can include grasses; graminoids (non-woody plants with a grass-like morphology); ferns; forbs (non-woody, broad-leaved, flowering plants) and vines (where present) may extend upwards into the canopy.

Pennywort

Hydrocotyle acutiloba

FORB (CREEPING)

Enydra

Enydra woollsii

FORB

Woolly Frog's-Mouth

Philydrum lanuginosum

AQUATIC (EMERGENT)

Jointed Twig-rush

Baumea articulata

GRAMINOID (SEDGE)

Soft Twig-rush

Baumea rubiginosa

GRAMINOID (SEDGE)

Climbing Maidenhair Fern

Lygodium microphyllum

FERN

Spotted Knotweed

Persicaria strigosa

FORB

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. Other than characteristic species are identified above as CWS species, there are no CWS plant species listed for this vegetation type.

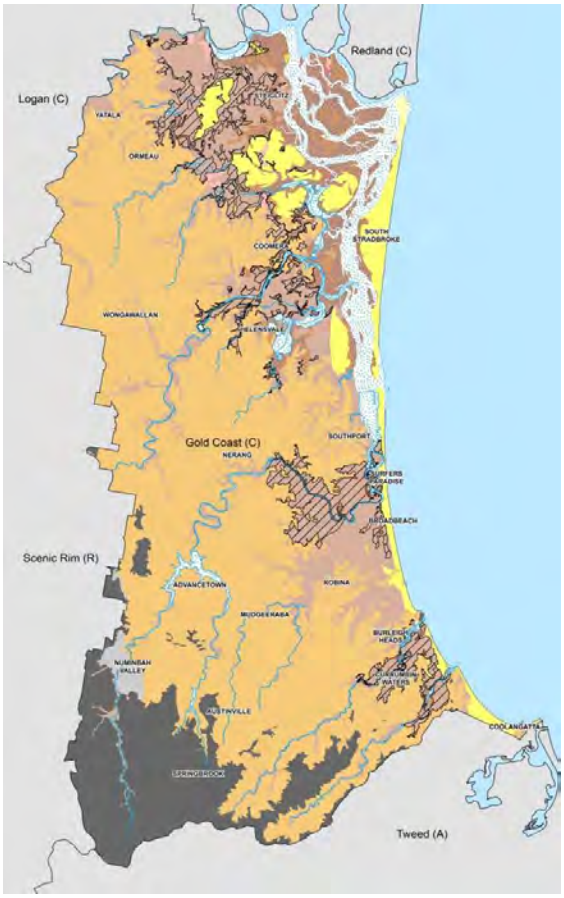
CITY OF GOLDCOAST.

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.

This vegetation type occurs on broad lower floodplains close to the coast. Previously widespread across coastal lowlands including Woongoolba, Gilberton, Norwell, Pimpama, Ormeau, Upper Coomera, Hope Island Helensvale, Nerang, Benowa, Carrara, Broadbeach Waters, Mermaid Waters and Tallebudgera and Currumbin Creeks, it has now been extensively cleared for growing sugar cane, canals and other urban development. It typically occurs on fertile, sandy to clay soils with high moisture and organic content. It forms swamps on the lowest-lying portions of the coastal floodplain, and often occurs as a mosaic with the more widespread VT9 (Broad-leaved Paperbark open forest on alluvium), where it occupies saline-influenced areas adjoining marine plains.

Historic distribution of Vegetation Type 15



LEGEND

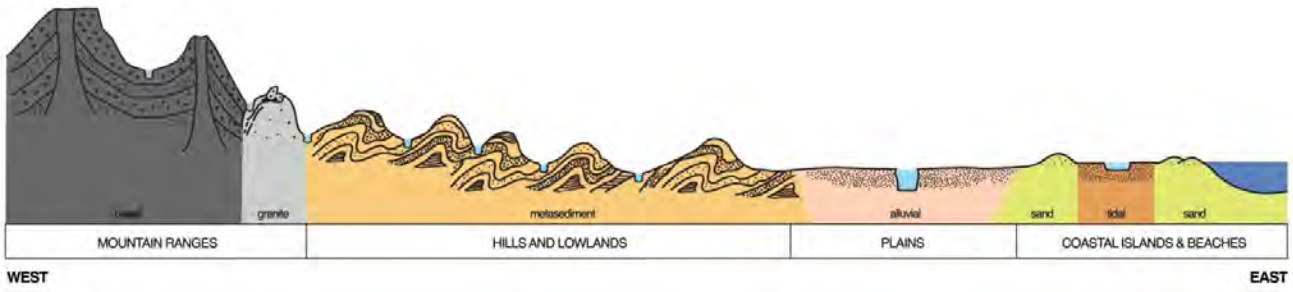
Vegetation Type 15 | Ocean | Major Waterways

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 (not subject to tidal inundation)	Dunes and beach ridges (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**

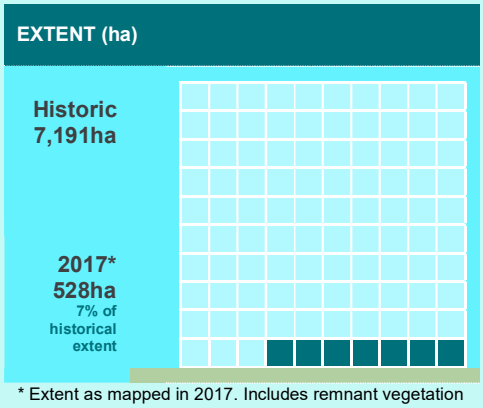
The most common underlying geology on the Gold Coast is metasediment rocks. Metasediment rocks are a type of metamorphic rock (rock transformed by heat and pressure). Originally these rocks were sedimentary rocks which were formed on the ocean floor through the deposition and solidification of sediment. 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, this vegetation type was the most common type of vegetated wetland and the fourth most common vegetation type within the Gold Coast. Very little (7%) of its historical extent remains. The 2017 extent* of this vegetation type on the Gold Coast was 528 hectares.

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

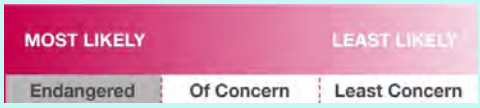


* Extent as mapped in 2017. Includes remnant vegetation only. Does not include disturbed remnant or regrowth.

Queensland

The conservation status of vegetation in Queensland is specified under the *Vegetation Management Act 1999*, which lists this regional ecosystem (RE 12.3.20) as being 'Endangered'.

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

This vegetation type was previously widespread, but has previously been heavily cleared. It is subject to ongoing pressure for clearing for urban development, including ancillary uses such as road and infrastructure corridors, flood detention facilities and general residential and commercial development. It is often wet and subject to infestation by water-loving weeds, especially where disturbance or fragmentation have opened up the canopy layer. Invasive weeds, including Lantana, Pepper Bush, Camphor Laurel, Groundsel, Bitou Bush and Guinea Grass are common.

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 types are 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, and/or
- 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.