

Estuarine Wetland

Swamp oak



VEGETATION TYPE 16

Regional Ecosystem: 12.1.1

Swamp Oak (*Casuarina glauca*) Open Forest on tidal flats

COMMUNITY STRUCTURE

Swamp Oak open forest on tidal flats is characterised by a canopy made up almost exclusively of *Casuarina glauca*, which varies from 7-15m in height and ranges from 5-55% canopy cover, or shade to underlying plants. Isolated emergent trees, mostly *Eucalyptus tereticornis*, sometimes occur to 20m high.

Emergent		Isolated medium – large trees 10 - 20 m Sparse <5% cover
Canopy		Small - medium trees 7 - 15 m Sparse-Mid-dense 5 - 55% cover
Sub canopy		Small trees 4 - 7 m Sparse <10% cover
Shrub		Shrubs 1- 4 m Sparse <5% cover
Ground		Grass/samphire/ fern 0-0.6 m high Sparse-Dense 20-90% cover

Source: Searle, 2019 (derived from GC199; GC200; GC210; GC217; GC220; GC221; GC225)

The sub-canopy and shrub layers below the canopy are usually sparse (<10% cover), and are comprised mostly of juvenile Swamp Oak trees (*Casuarina glauca*), with isolated native trees (*Cryptocarya triplinervis*, *Streblus brunonianus*) in the shrub layer. The ground cover varies from dense to absent, often with larger areas of Saltwater Couch (*Sporobolus virginicus*) or samphire (*Enchylaena tomentosa*, *Suaeda australis*) in locations. The vine *Parsonsia straminea* is common and can be dense on canopy trees.

Characteristic plant species

Approximately **25 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*



Indicates species is a Glossy Black-Cockatoo feed tree species



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.

EMERGENT

Isolated tall trees, visible above the canopy



Forest Red Gum

Eucalyptus tereticornis

CANOPY

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



Swamp Oak

Casuarina glauca



Broad-leaved Paperbark

Melaleuca quinquenervia

SUB-CANOPY

Tree layer below canopy



Three-veined Cryptocarya
Cryptocarya triplinervis



Tuckeroo
Cupaniopsis anacardioides



Broad-leaved Paperbark
Melaleuca quinquenervia

SHRUB LAYER

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



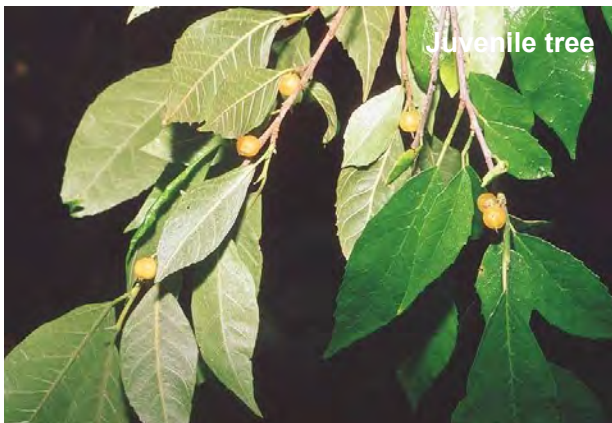
Swamp Oak
Casuarina glauca



Boobialla
Myoporum acuminatum



Creek Sandpaper Fig
Ficus coronata



Whalebone Tree
Streblus brunonianus



Three-veined Cryptocarya
Cryptocarya triplinervis

GROUND LAYER AND VINES

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).



Common Reed
Phragmites australis
GRAMINOID (REED)



Saltwater Couch
Sporobolus virginicus
GRASS (CREEPING)



Ruby Saltbush
Enchylaena tomentosa
SRAWLINGSHRUB



Austral Seablite
Suaeda australis
SAMPHIRE



Swamp Fern
Cyclosorus interruptus
FERN



Mangrove Fern
Acrostichum speciosum
FERN



Rusty Sedge
Fimbristylis ferruginea
GRAMINOID (SEDGE)



Sea Purslane
Sesuvium portulacastrum
SAMPHIRE



Common Silkpod
Parsonsia straminea
VINE

GROUND LAYER AND VINES

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).



Enydra
Enydra woollsii
FORB



Shield Pennywort
Hydrocotyle verticillata
FORB (CREEPING)



Elkhorn
Platynerium bifurcatum
EPIPHYTE

City-wide significant plant species



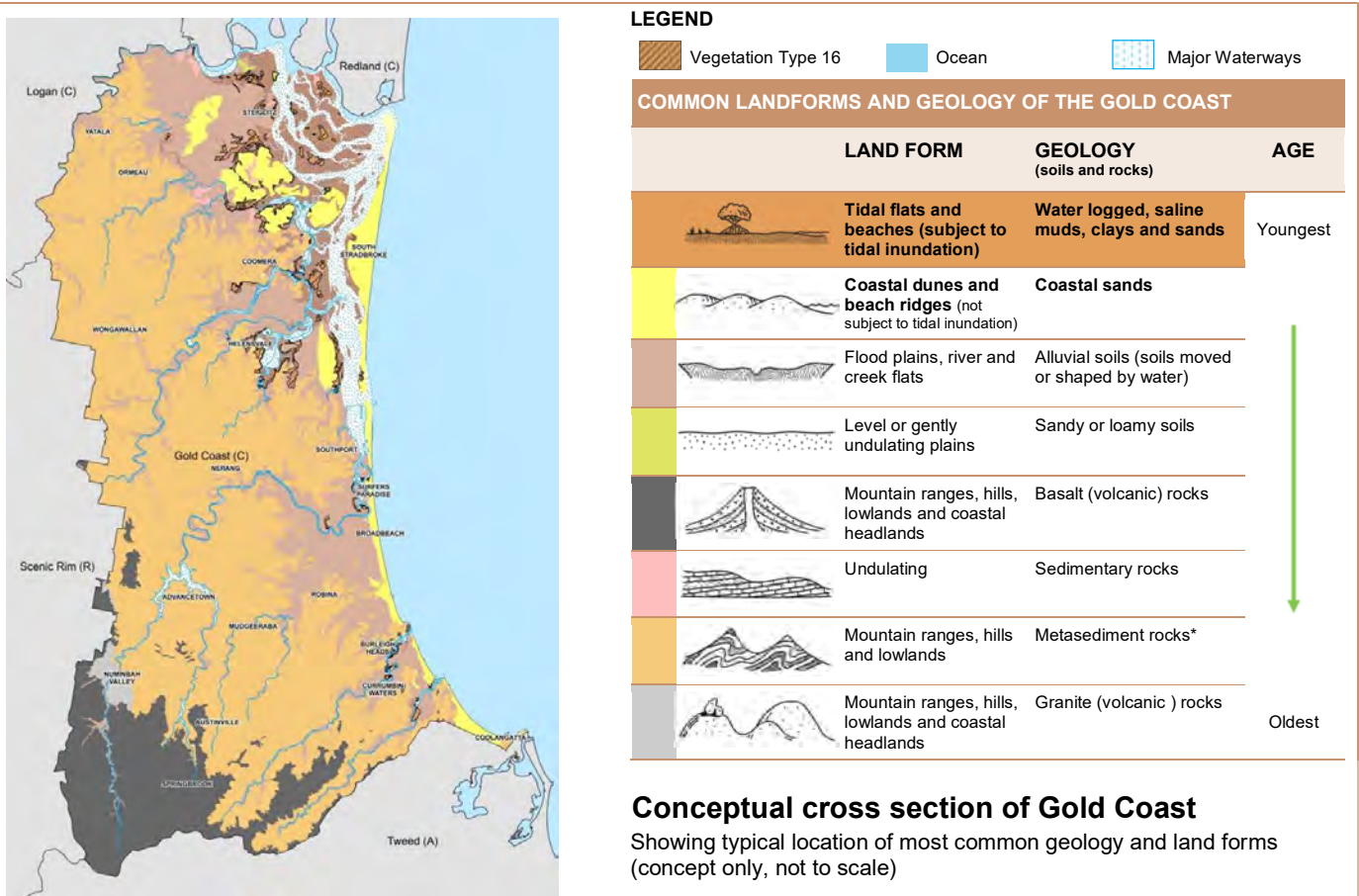
The City of Gold Coast recognises species which are locally significant as City-wide significant (CWS) species. These species are important because they may be threatened, restricted to the Gold Coast, or at the edge of their geographic range. Characteristic species, which are CWS species have been identified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

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.

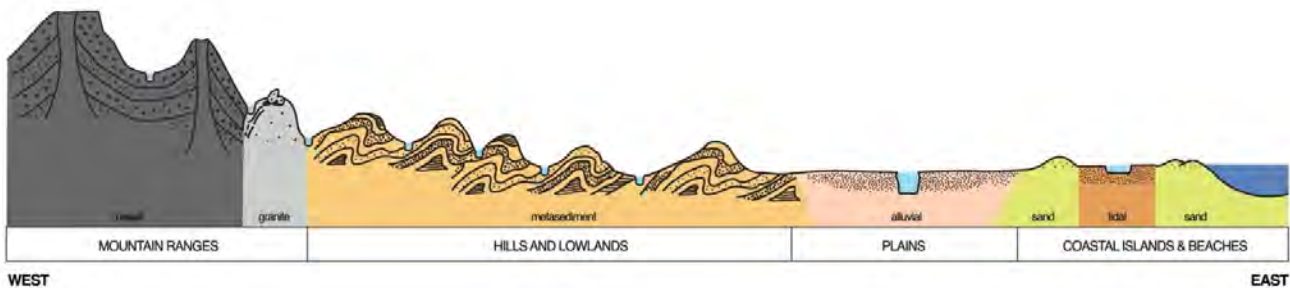
This vegetation type occurs in tidal creeks and estuaries at the upper limit of the tidal zone, in areas infrequently inundated by saltwater on Spring tides. Soils are usually deep grey or black fine silty muds derived from marine sediments, held together by dense patches of ground cover and tree roots in localised high spots. Swamp Oak open forest on tidal flats merges with mangroves or marine flats on the more infrequently inundated low side, and transitions into VT15 (Paperbark/Swamp Oak woodland) on the landward side. Common 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 16



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 metamorphism, 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

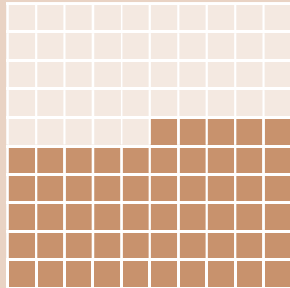
The 2017 extent* of this vegetation type on the Gold Coast was 988 hectares.

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

EXTENT (ha)

Historic
1,794ha

2017*
988ha
55% of
historical
extent

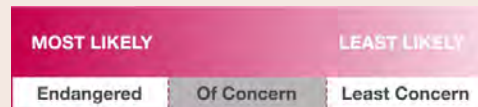


* Extent as mapped in 2017. Includes remnant vegetation only. Does not include disturbed remnant or regrowth.

Queensland

The conservation status of vegetation in Queensland is specified under the *Vegetation Management Act 1999*, which lists this regional ecosystem (RE 12.1.1) 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 ©

Version 3, November 2020

THREATS

Swamp Oak open forest on tidal flats are susceptible to erosion and scouring in extreme flooding and run-off events, contamination from earthworks and the associated release of acid-sulphate soils. They have been subject to land clearing and development for canals, marinas and other foreshore developments, and are also potentially susceptible to increased inundation from sea level rise as a result of climate change. The shrub layer of this vegetation type is susceptible to weed inundation from a variety of woody weeds, and management should ideally exclude fire and undergo appropriate weed control activities where required.

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
- 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.