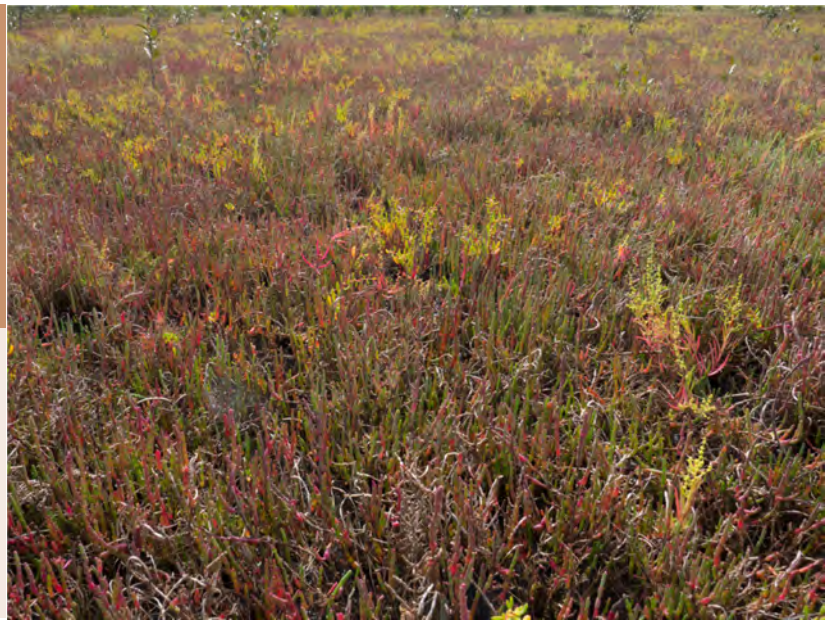
Estuarine Wetland

salt marsh



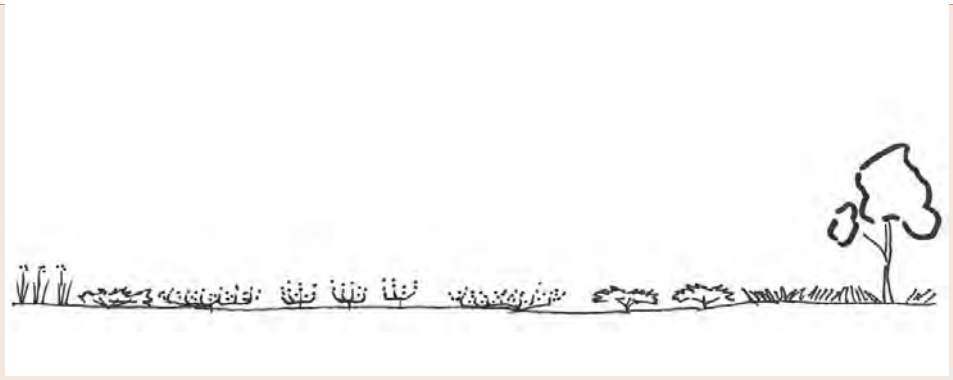
VEGETATION TYPE 22c

Regional Ecosystem: 12.1.2

Samphire on Marine Deposits

COMMUNITY STRUCTURE

Vegetation type (VT) 22c is a sparse herbfield of samphires (salt tolerant succulent plants) *(Sarcocornia quinqueflora, Suaeda australis*,) and other semi-aquatic, usually succulent herbs (*Bacopa monnieri, Centaurium erythraea*) and grasses (especially *Sporobolus virginicus*) on mudflats and claypans. These communities typically have considerable areas of bare open mud, but the presence of samphires is both diagnostic and conspicuous. Where present, trees such as mangroves are typically isolated and small in size.



Ground

Samphire/grass 0-0.5m
Sparse to mid-dense
10-75% cover

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

Characteristic plant species

Approximately **37 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 (see below for details).

GROUND LAYER

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).

Beaded Samphire

Sarcocornia quinqueflora

SAMPHIRE

Austral Seablite

Suaeda australis

SAMPHIRE

Saltwater Couch

Sporobolus virginicus

GRASS (CREEPING)

Bacopa

Bacopa monnieri

FORB (CREEPING)

Common Centaury

Centaurium erythraea

FORB

Rusty Sedge

Fimbristylis polytrichoides

GRAMINOID (SEDGE)

Prickly Couch

Zoysia macrantha

GRASS (CREEPING)

Mangrove Fern

Acrostichum speciosum

FERN

GROUND LAYER

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).

Sea Celery

Apium prostratum
FORB

Mangrove Wax-flower Vine

Vincetoxicum carnosum
(formerly *Cynanchum carnosum*)
VINE (TWINING)

Coastal Pigface

Carpobrotus glaucescens
FORB (CREEPING)

River Lily

Crinum pedunculatum
FORB (CLUMPING)

Red Crumbweed

Dysphania littoralis
FORB

Yellow Eclipta

Eclipta platyglossa
FORB

Enydra

Enydra woollsii
FORB

New Zealand Spinach

Tetragonia tetragonioides
FORB

Shield Pennywort

Hydrocotyle verticillata
FORB (CREEPING)

Goat's Foot Morning Glory Vine

Ipomoea pes-caprae subsp. brasiliensis
VINE (SCAMBLING)

CITY OF GOLDCOAST.

GROUND LAYER

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).

Swamp Club-rush
Isolepis inundata
GRAMINOID (SEDGE)

Sea Rush
Juncus kraussii
GRAMINOID (RUSH)

Common Rush
Juncus usitatus
GRAMINOID (RUSH)

Common Reed
Phragmites australis
GRAMINOID (REED)

Carpet Weed
Phyla nodiflora
FORB

Creeping Brookweed
Samolus repens
FORB

Sea Purslane
Sesuvium portulacastrum
SAMPHIRE

Lesser Sea-Spurrey
Spergularia marina
FORB

TREES

Where present: Isolated, generally small growth form

Swamp Oak
Casuarina glauca

Cottonwood
Hibiscus tiliaceus

Broad-leaved Paperbark
Melaleuca quinquenervia

TREES

Where present: Isolated, generally small growth form

Grey Mangrove
Avicennia marina

Milky Mangrove
Excoecaria agallocha

Coastal Boobialla
Myoporum acuminatum

SHRUBS

Where present: Small herbaceous and woody shrubs

Mangrove Daisy
Wollastonia uniflora

Mangrove Boobialla
Myoporum boninense subsp. australe

Coastal Vitex
Vitex trifolia var. trifolia

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. The following City-wide significant plant species may also be present in this vegetation type.

.

Pencil Orchid
Dockrillia teretifolia
EPIPHYTE

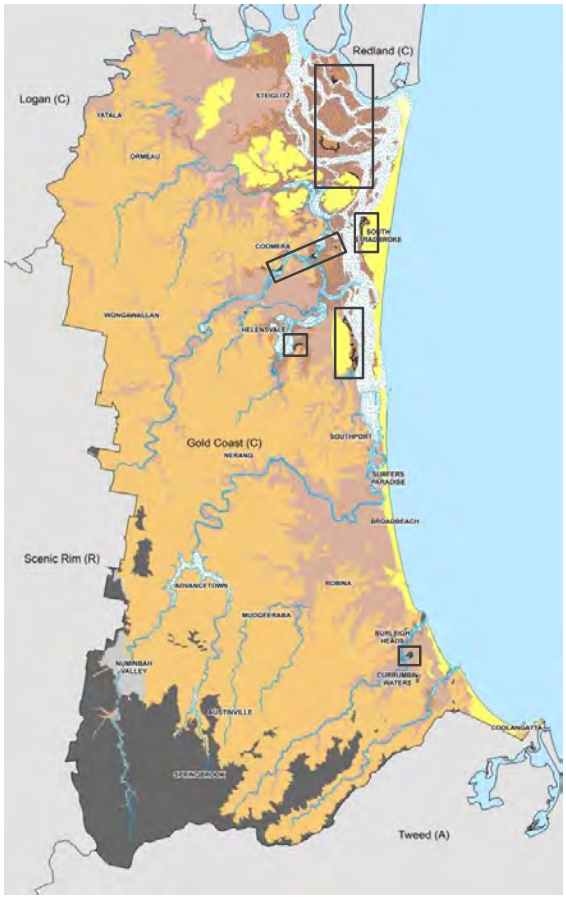
CITY OF GOLDCOAST.

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.

Samphire vegetation typically occurs on hypersaline areas behind mangroves and below more elevated areas of the marine plain supporting *Sporobolus virginicus* grassland. Not all areas of this vegetation type are mapped, with many areas too small to be differentiated at the scale of vegetation mapping, or otherwise included in surrounding mangrove and grassland communities. Only a few areas of this vegetation type are sufficiently large and homogenous to map, including patches at Helensvale, Coombabah and the Southern Moreton Bay Islands, although numerous other small patches of this community exist throughout the coastal marine plain areas of Gold Coast City.

Historic distribution of Vegetation Type 22c



LEGEND

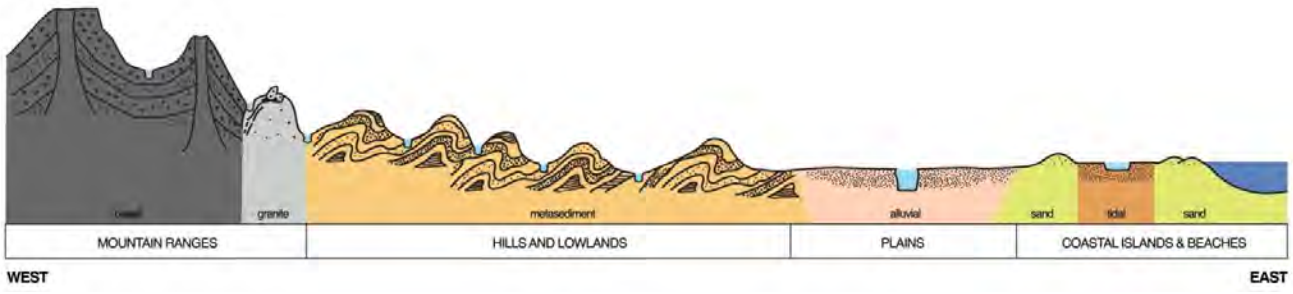
Vegetation Type 22c | Ocean | Major Waterways

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**

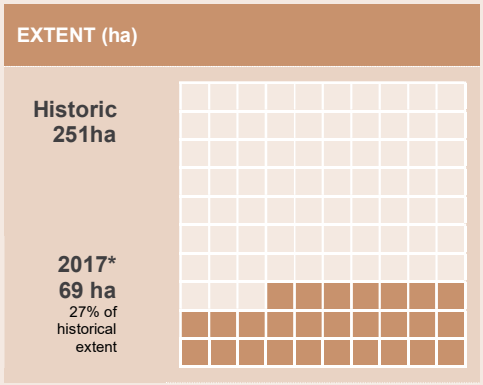
The most common underlying geology on the Gold Coast is metasediment rocks. Metasediment rocks are a type of metamorphic rock (rock transformed by heat and pressure). Originally these rocks were sedimentary rocks which were formed on the ocean floor through the deposition and solidification of sediment. 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

The 2017 extent* of this vegetation type on the Gold Coast was 69 hectares.

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

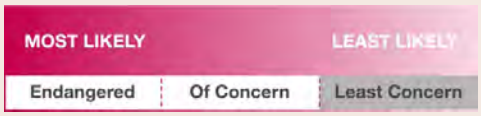


* Extent as mapped in 2017. Includes remnant vegetation only. Does not include disturbed remnant or regrowth.

Queensland

The conservation status of vegetation in Queensland is specified under the *Vegetation Management Act 1999*, which lists this regional ecosystem (RE 12.1.2) as being 'Least 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

Samphire vegetation occurs on marine plains within the upper tidal area of low islands, rivers and estuaries, 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 tidal areas.

Common threats to all vegetation types

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, 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.

CITY OF GOLDCOAST.