

Exposed Coastal

dune



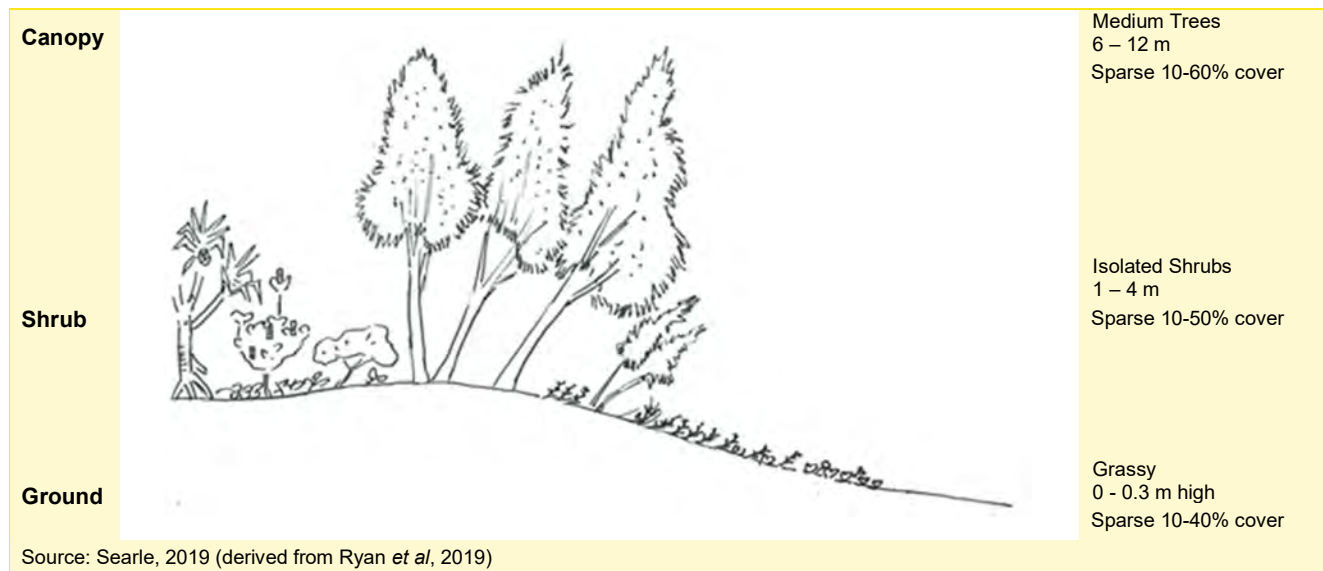
VEGETATION TYPE 23

Regional Ecosystem: 12.2.14

Foredune Complex (*Casuarina equisetifolia*/*Spinifex sericeus*) on Coastal Sand

COMMUNITY STRUCTURE

Foredune complex is a band of colonising vegetation along the coastal foredune immediately adjoining the ocean, and is exposed to period erosion and deposition of sand from surf and shoreline processes. It begins as a sparse grassland of spinifex and prostrate vines (*Spinifex sericeus*, *Ipomoea pes-caprae*, *Vigna marina*) just above the inter-tidal zone, and typically rises to an open woodland up to 12m high and providing between 10% and 60% cover or shading to understorey plants. Coastal She-oak (*Casuarina equisetifolia* subsp. *incana*) is often the dominant and characteristic canopy species, although other scattered trees (such as *Pandanus tectorius* and *Banksia integrifolia* subsp. *integrifolia*) may be locally dominant. Other canopy species such *Macaranga tanarius*, *Cupaniopsis anacardioides*, *Alectryon coriaceus*. and *Hibiscus tiliaceus* may also be present in sheltered hind dunes. Shrubs such as *Acacia sophorae* are usually restricted to the mid to hind-dune area. *Vitex trifolia* var. *trifolia* can be locally dominant in some areas.



It is noted that much of the dunes along the Gold Coast have been replanted after activities such as mining or beach nourishment. The dominance of Coastal She-oak in some areas may be due to planting rather than naturally occurring. In many locations where they are now senescing (dying naturally due to old age) they are giving way to other canopy species.

Characteristic plant species

Approximately **13** 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.



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.

CANOPY

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



Coastal She-oak
Casuarina equisetifolia subsp. incana



Screw Pine
Pandanus tectorius



Coastal Banksia
Banksia integrifolia subsp. Integrifolia



Tuckeroo
Cupaniopsis anacardioides



Macaranga
Macaranga tanarius



Beach Alectryon
Alecryon coriaceus



Cottonwood
Hibiscus tiliaceus



Hickory Wattle
Acacia disparrima

SHRUB LAYER

Restricted to the mid-hind-dune area. Made up of small trees and woody shrubs.



Coastal Wattle
Acacia sophorae



Coastal Vitex
Vitex trifolia var. *trifolia*
(locally common in places)



Beach Acronychia
Acronychia imperforata



Macaranga
Macaranga tanarius



Red Ash/Soap Tree
Alphitonia excelsa

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.



Beach Spinifex
Spinifex sericeus
GRASS



Coastal Dune Grass
Eragrostis interrupta
GRASS (TUSSOCK)



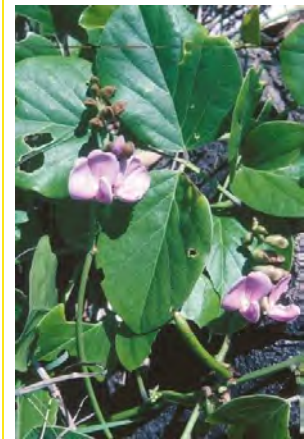
Pigface
Carpobrotus glaucescens
FORB (CREEPING)



Goat's Foot Morning Glory Vine
Ipomoea pes-caprae subsp. *brasiliensis*
VINE



Yellow Beach Bean
Vigna marina
VINE



Coastal Jack Bean
Canavalia rosea
VINE

City-wide significant plant species



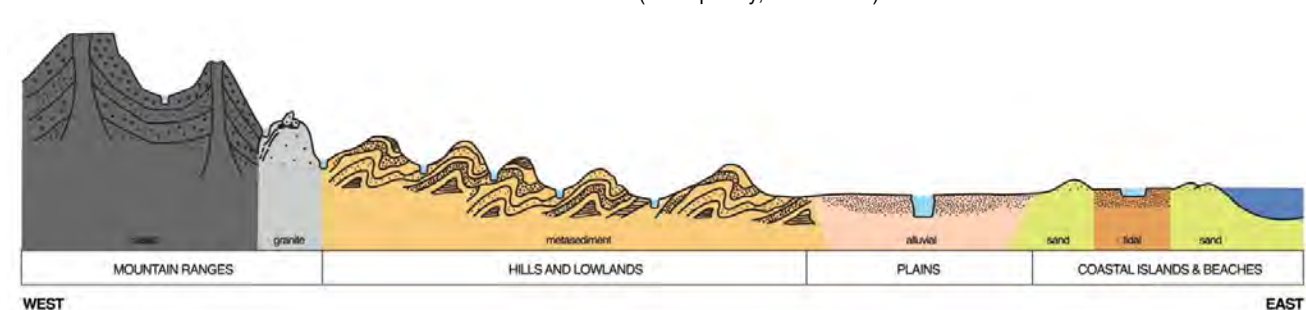
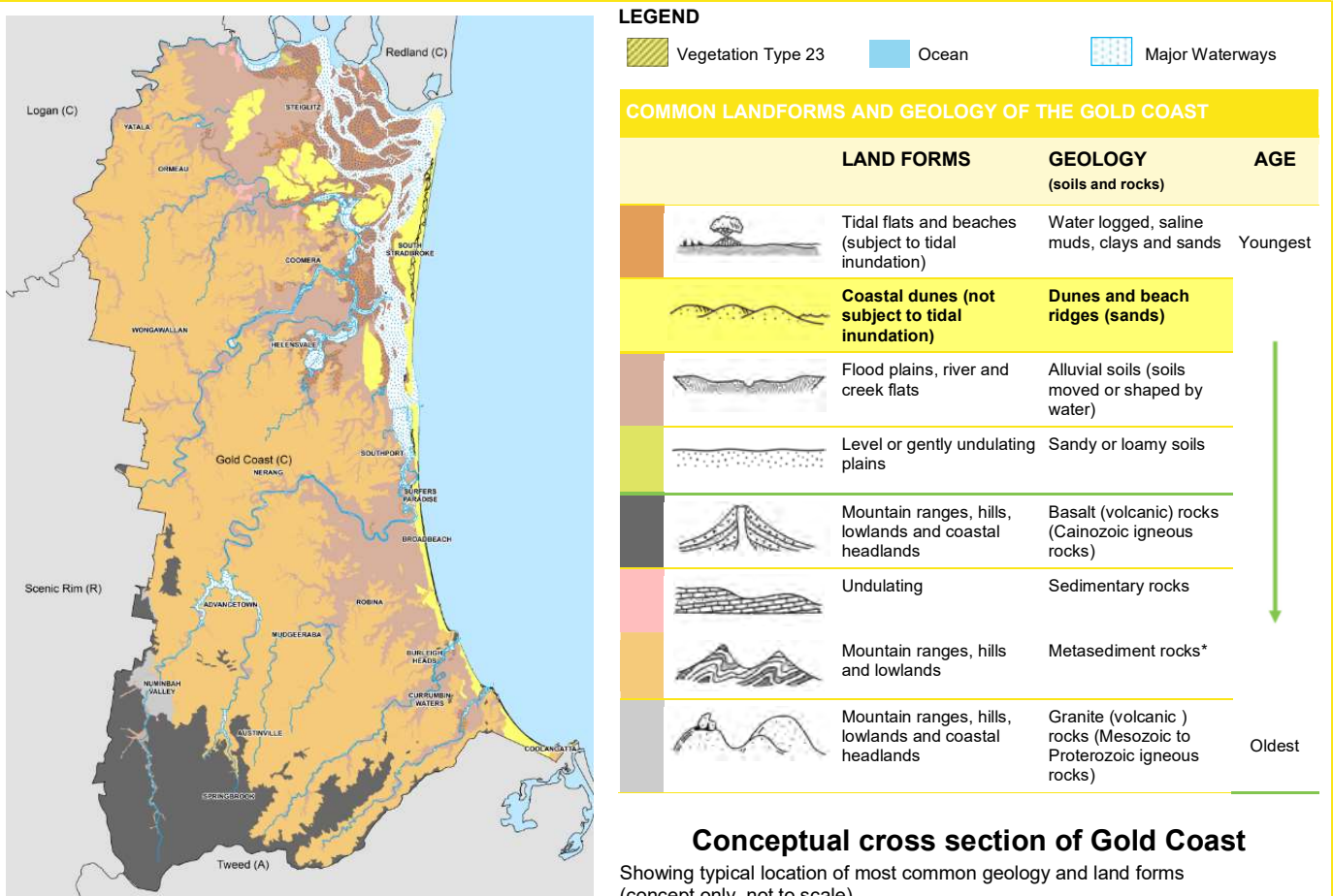
The City of Gold Coast recognises species which are locally significant as City-wide significant (CWS) species. These species are important because they may be threatened, restricted to the Gold Coast, or at the edge of their geographic range. No City-wide Significant plant species are listed for this 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.

Foredune complex is restricted to the zone immediately adjoining the shore, from just below the upper tidal limit to the crest and hind-dune area of the primary coastal foredune. Much of this community along the urban coastline from Southport to Coolangatta has been cleared or disturbed for urban development or as a result of historical sand mining, and represent a modified form of this community. The northern end of South Stradbroke Island supports some of the best developed and natural examples of this vegetation type, and a small area at Southern Palm Beach is also in relatively natural condition.

Historic distribution of Vegetation Type 23



*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

Historically, this vegetation type was one of the least common vegetation types. The current extent* of this vegetation type on the Gold Coast is 730 hectares which is >100% of its historical extent.

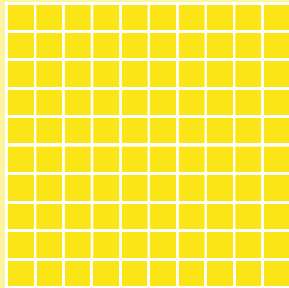
1 HECTARE (HA) = 2.46 ACRES ≈ THE SIZE OF AN INTERNATIONAL RUGBY FIELD

EXTENT (ha)

Historic
360ha

2017*
730ha

>100% of
historical
extent

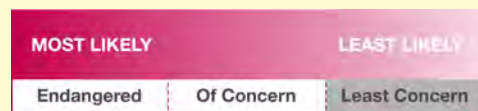


* Current extent as mapped in 2017 and includes remnant vegetation only. It does not include disturbed remnant or regrowth

Queensland

The conservation status of vegetation in Queensland is specified under the *Vegetation Management Act 1999*, which lists this regional ecosystem (RE 12.2.14) as being 'Least Concern'.

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



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

Foredund complex is a naturally restricted vegetation type which is limited to the immediate foreshore zone. It is threatened by coastal development, both for urban purposes and to stabilise adjoining properties. Retention of this vegetation is important as a buffer to climatic events, and this community is also threatened by damage from extreme weather events, and increases in these events as a consequence of climate change. A variety of exotic weeds now occur in this vegetation zone, some of which are widespread and difficult to control including siratro, painted spurge and common couch (*Macroptilium atropurpureum*, *Euphorbia heterophylla* and *Cynodon dactylon*).

Other 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 and creek areas
- 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.