# RIVERINE

**riparian**

## VEGETATION TYPE 12

Regional Ecosystem: 12.3.7a

Black Tea Tree (*Melaleuca bracteata*) Open Forest on Alluvium

## COMMUNITY STRUCTURE

This vegetation type forms a gallery forest on low river terraces and river banks. It is characterised by a canopy dominated by Black Tea Tree (*Melaleuca bracteata*), together with isolated other rainforest tree species (including *Elaeocarpus grandis, Aphananthe philippensis*). The canopy is dense, and a sparse sub-canopy of mainly rainforest species is also present (including *Cryptocarya triplinervis, Ficus coronata, Mallotus philippensis*).


*Source: Searle, 2019 (derived from Ryan et al. 2019; GC14; GC29; GC54; GC139)*

The understorey is sparse except along stream bank edges, where rainforest shrubs occur. The ground layer includes mainly grass-like plants (*Oplismemnis hirtellus, Lomandra hystrix*).

## Characteristic plant species

Approximately **44 native plants species** have been recorded for this vegetation type. Characteristic plant species 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**

**Black Tea Tree**
*Melaleuca bracteata*

**Blue Quandong**
*Elaeocarpus grandis*

**Rough-leaved Elm**
*Aphananthe philippinensis*

### SUB - CANOPY

**Tree layer below canopy**

**Three-veined Cryptocarya**
*Cryptocarya triplinervis*

**Creek Sandpaper Fig**
*Ficus coronata*

**Blue Quandong**
*Elaeocarpus grandis*

**Red Kamala**
*Mallotus philippensis*

## SHURB LAYER

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

**Creek Sandpaper Fig**

*Ficus coronata*

## 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.**

**Creeping Beard Grass**

*Oplismenus hirtellus subsp. imbecillis*

**GRASS**

**Creek Mat Rush**

*Lomandra hystrix*

**GRAMINOID**

## 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. The following CWS plant species may be present in this vegetation type

**Marblewood**

*Acacia bakeri*

**SHRUB**

**Long-leaved Tuckeroo**

*Cupaniopsis newmanii*

**SHRUB**

**Macadamia Nut**

*Macadamia tetraphylla*

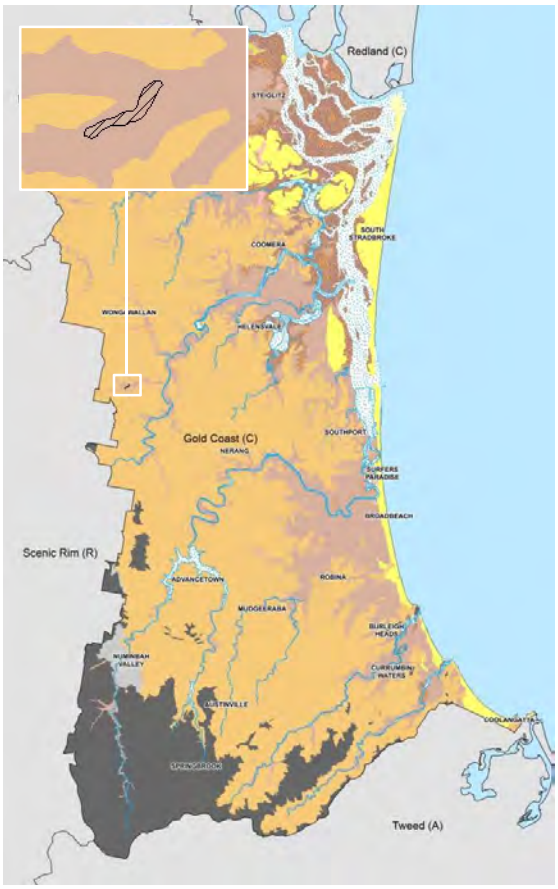
**TREE**

## 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 as small patches on low river terraces and along riverbanks in the central and northern hinterland of Gold Coast City. It typically occurs on fertile, black soils with high moisture and organic content associated with waterways. It appears to be distinct local variant of VT20 (Forest Red Gum/River Oak woodland), and also transitions into VT20a (Vine Forest on alluvium) along streams, especially further upstream, and forms a mosaic with these areas. VT6 (Forest Red Gum/Pink Bloodwood/Grey Ironbark woodland on alluvium) often adjoins this community on broad floodplains, especially further downstream. It is found on mid to upstream sections of the Pimpama and northern Coomera Rivers. Small patches too small to be differentiated at the scale of vegetation mapping occur at Pimpama, Wongawallen, and Upper Coomera. The only area large enough to map is at Guanaba.

## Historic distribution of Vegetation Type 12




**LEGEND**

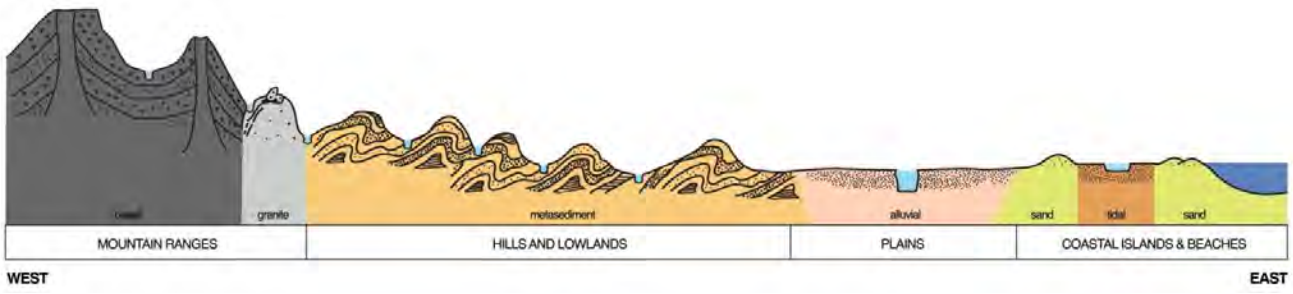
Vegetation Type 12 | Ocean | Major Waterways

**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) | Sand | |
| | **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**

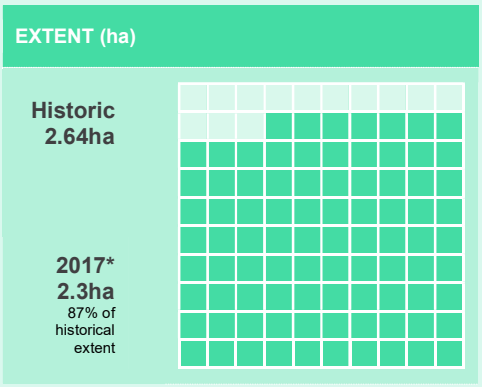
The most common underlying geology on the Gold Coast is metasediment rocks. Metasediment rocks are a type of metamorphic rock (rock transformed by heat and pressure). Originally these rocks were sedimentary rocks which were formed on the ocean floor through the deposition and solidification of sediment. 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, the second least common type of vegetation on the Gold Coast but much (87%) of its historical extent remains. The 2015 extent* of this vegetation type on the Gold Coast was 2.3 hectares.

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

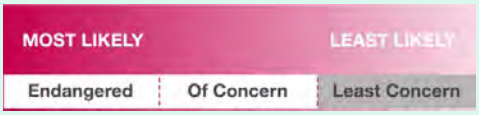



* Extent as mapped in 2017. Includes remnant vegetation only. Does not include disturbed remnant or regrowth.

### Queensland

The conservation status of vegetation in Queensland is specified under the *Vegetation Management Act 1999*, which lists this regional ecosystem (RE 12.3.7a) 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 ©

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## THREATS

Black Tea-tree open forest on alluvium is a productive and well-watered vegetation type. Weeds often infest it, especially in areas where clearing has occurred to near the creek line, and where disturbance or fragmentation has opened up the canopy layer. Invasive weeds, including Lantana, Pepper Bush, Camphor Laurel, Cats-claw creeper, Wandering Jew, and Guinea Grass are common. Flooding and disturbance facilitate the colonisation by this community to some degree, but excessive flooding and disturbance will reduce its ability to out compete weeds and stabilise riverbanks. It can be taken over by vine forest in the absence of fire or flooding.

### 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 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,
- 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.