# Rainforest

**littoral**

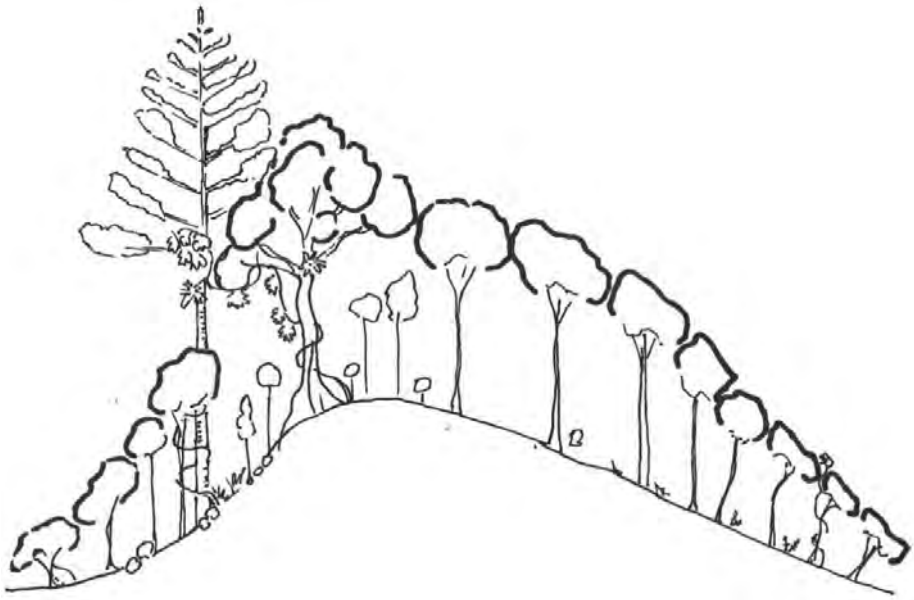
## VEGETATION TYPE 28

Regional Ecosystem: 12.8.3

Littoral Vine Forest on Basalt Headlands

## COMMUNITY STRUCTURE

Littoral Vine Forest on basalt headlands varies from tall, diverse and well-developed closed forest canopy from 12-26m high in gullies and other sheltered areas, to a low, dense closed canopy from 3-8m high, and sheered or distorted by wind on exposed headlands. The species composition of the canopy is diverse and generally includes Native Olive (*Olea paniculata*), Red Bean (*Dysoxylum mollissimum*) and Bolly Gum (*Neolitsea australiensis*). Isolated emergent trees (*Ficus macrophylla, Ficus virens, Araucaria cunninghamii*) rise to 32m, especially in sheltered gullies.

| | | |
|---|---|---|
| **Emergent** |  | Isolated<br>Trees 22-32m<br>Sparse <5% cover |
| **Canopy** | | Large – small trees<br>3 – 16 m<br>Dense<br>90-95% cover |
| **Sub canopy** | | Isolated trees<br>Sparse <5% cover |
| **Shrub** | | Isolated shrubs<br>1 – 3 m<br>Sparse <5% cover |
| **Ground** | | Grassy<br>0 - 0.7 m high<br>Sparse <10 % cover |

Source: Searle, 2019 (derived from Ryan et al, 2019; Sites MB54 and MB55; Burleigh Head NP)

The sub-canopy and shrub layers below the canopy are usually sparse. The ground layer typically forms a mosaic of grassland and more open areas, which have a conspicuous layer of leaves and bark. Vegetation in the ground layer ranges in height and is dominated by grasses, and open areas of leaf litter.

## Characteristic plant species

Approximately **94 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*

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

CWS — Indicates species is a City-wide significant species

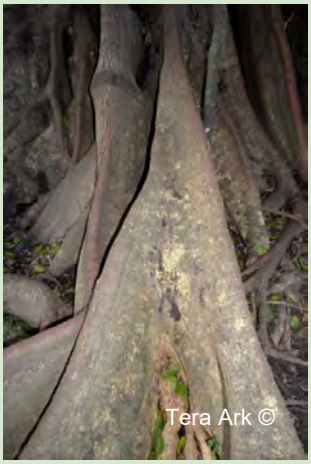
* It is noted that in addition to preferred food trees, koalas utilise a range of eucalypt and non-eucalypt tree species for supplemental feeding and other uses such as shelter. These other species are also important and necessary features of koala habitat.

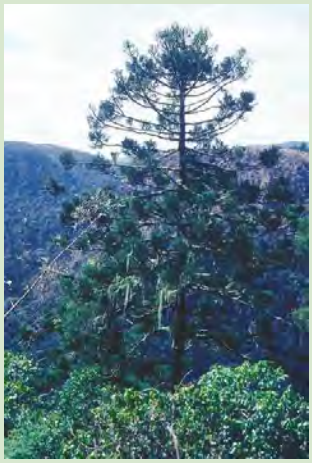
## EMERGENT

**Tallest trees, visible above the canopy**

**Moreton Bay Fig**
*Ficus macrophylla*

**White Fig**
*Ficus virens var virens*



**Hoop Pine**
*Araucaria cunninghamii*

## CANOPY

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

**Native Olive**
*Olea paniculata*

**Red Bean (Mahogany)**
*Dysoxylum mollissimum* subsp. *molle*

**Grey Bolly Gum**
*Neolitsea australiensis*

**Myrtle Ebony**
*Diospyros pentamera*

## CANOPY

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

**Tulipwood**

*Harpullia pendula*

**Rough-leaved Elm**

*Aphananthe philippinensis*

**White Bean**

*Ailanthus triphysa*

## SUB-CANOPY

**Tree layer below canopy**

**Bolly Gum**

*Neolitsea australiensis*


**Stinking Cryptocarya**

*Cryptocarya foetida*

**Coogera**

*Arytera divaricata*

## SHRUB LAYER

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

**Large-leaved Wilkiea**
*Wilkiea macrophylla*

**Native Olive**
*Olea paniculata*

**Native Pomegranate**
*Capparis arborea*

**Smooth Wilkea**
*Wilkiea austroqueenslandica*

**Burr Bush**
*Monococcus echinophorus*


**Spiny Gardenia**
*Randia moorei*

## GROUND LAYER

**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).**


**Prickly Rasp Fern**
*Doodia aspera*
**FERN**

**Bordered Shield Fern**
*Lastreopsis marginans*
**FERN**

**Love Flower**
*Pseuderanthemum variabile*
**FORB**

## VINES

**Vines and climbing plants may extend upwards into the canopy.**

**Wait-a-while/ Lawyer Vine**
*Calamus muelleri*

**Bower Vine**
*Pandorea jasminoides*

**Burny Vine**
*Trophis scandens*

**Native Grape**
*Tetrastigma nitens*

## VINES

**Vines and climbing plants may extend upwards into the canopy.**

**Barbed-wire Vine**
*Smilax australis*

**Native Pothos**
*Pothos longipes*

**Richmond Birdwing Butterfly Vine**
*Pararistolochia praevenosa*

**Climbing Deeringia**
*Deeringia arborescens*

## EPIPHYTES

**Species that grow on the surface of other plants**

**Bird's Nest Fern**
*Asplenium australasicum*
**FERN**

**Robber Fern**
*Pyrrosia confluens*
**FERN**

## 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. In addition to characteristic species identified above as CWS species, the following CWS plant species may also be present in this vegetation type.

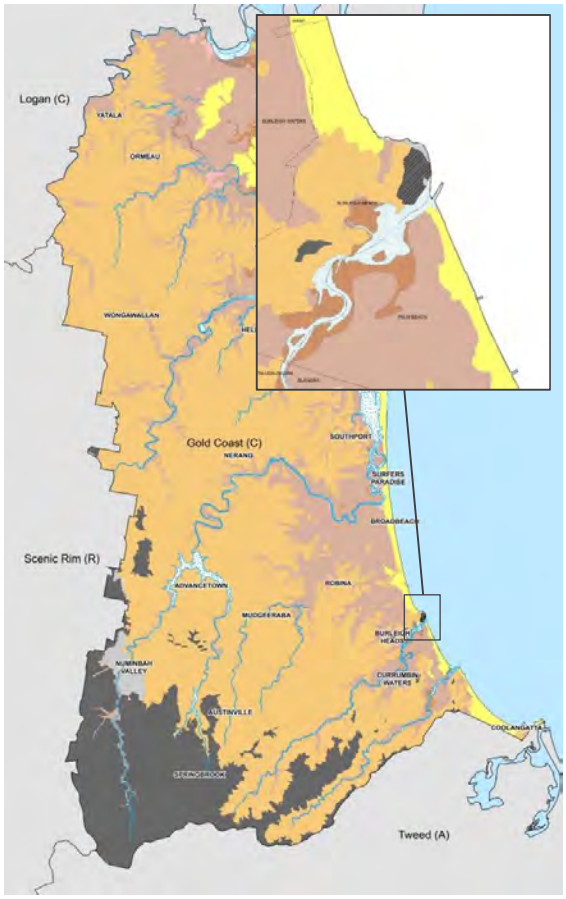
**Arrowhead Vine**
*Tinospora tinosporoides*

## 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 littoral rainforest is restricted to rocky coastal headlands, and within Gold Coast City occurs mainly at Burleigh Head. It is otherwise similar in composition to VT29b and VT29e (Sub-tropical Vine Forest on low basalt or lateritic plateaus respectively) and has a similar structure in the most sheltered situations at Burleigh Head.

### Historic distribution of Vegetation Type 28




**LEGEND**

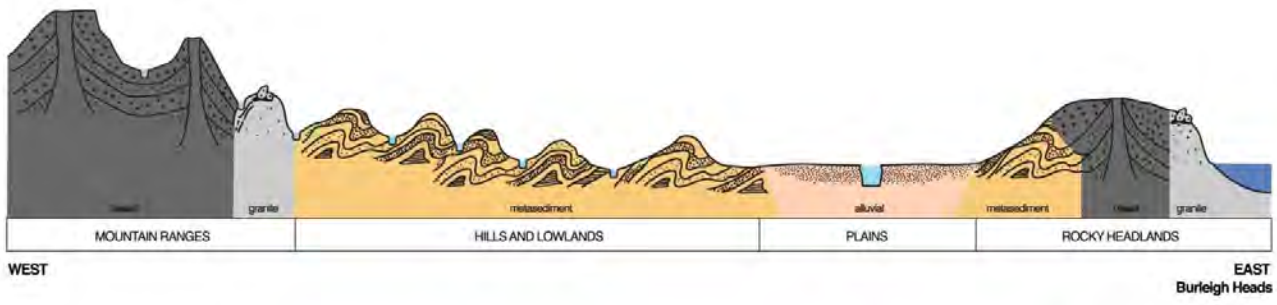
Vegetation Type 28 | Ocean | Major Waterways

**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**

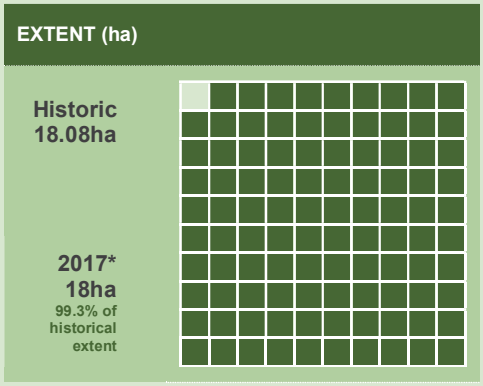
The most common underlying geology on the Gold Coast is metasediment rocks. Metasediment rocks are a type of metamorphic rock (rock transformed by heat and pressure). Originally these rocks were sedimentary rocks which were formed on the ocean floor through the deposition and solidification of sediment. 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 is the rarest type of rainforest and one of the rarest of all vegetation types within the Gold Coast but much (99.3%) of its historical extent remains The 2017 extent* of this vegetation type on the Gold Coast was 18 hectares.

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

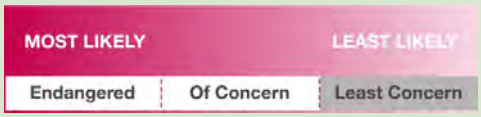



* Extent as mapped in 2017. Includes remnant vegetation only. Does not include disturbed remnant or regrowth.

### Queensland

The conservation status of vegetation in Queensland is specified under *the Vegetation Management Act 1999*, which lists this regional ecosystem (RE 12.8.18) 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

This type of littoral vine forest is naturally restricted to rocky headlands, and within the Gold Coast is protected in Burleigh Head National Park. However human visitation and disturbance is high, and in addition to direct plant trampling, weed invasion and the risk of damage from fire are constant threats requiring ongoing management.

### 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 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.