RAINFOREST

cool temperate

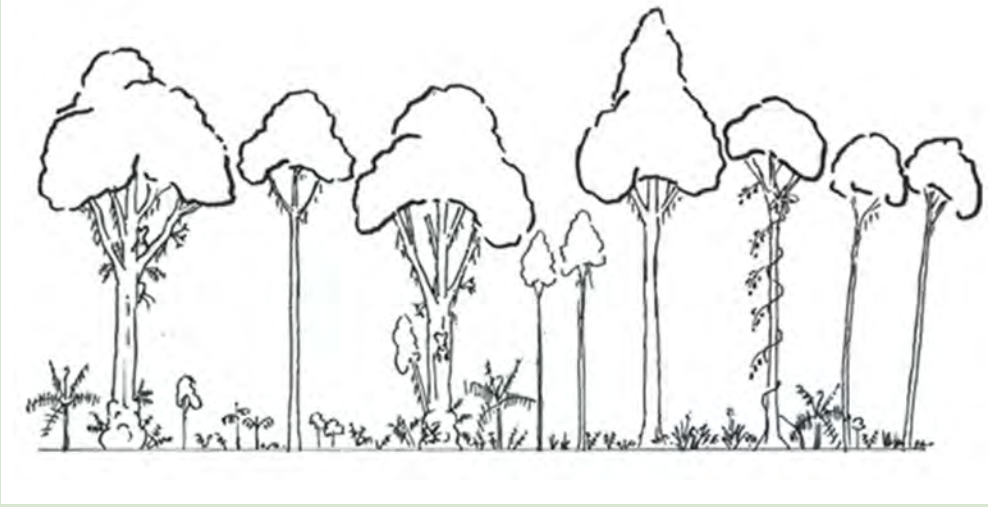
VEGETATION TYPE 30

Regional Ecosystem: 12.8.6

Cool Temperate Vine Forest on Cainozoic Igneous Rocks

COMMUNITY STRUCTURE

Vegetation type (VT 30) is the only type of cool temperate rainforest on the Gold Coast. It has a closed canopy which is between 15-20m high (relatively low for rainforest). Floristically this vegetation type is simple with only a few trees species forming the canopy. Antarctic Beech (*Nothofagus moorei*) and Sassafras (*Doryphora sassafras*) are the most common and characteristic canopy tree species, also occasionally occurring as taller emergent. The sub-canopy joins the canopy and is typically sparse, with Red-flowered Socketwood (*Daphnandra tenuipes*) and Grey Possumwood (*Quintinia verdonii*) included in the more common species.

Emergent		If present Isolated trees 22+m, Sparse 5-10% cover
Canopy		Large trees 15 – 20m Dense, 65-90% cover
Sub canopy		Medium trees 5-15m Sparse ~5% cover
Shrub		Shrubs 1-5m Sparse 10-20% cover
Ground		Ferns 0 - 1m Sparse-mid-dense 5-50% cover

Source: Searle 2019, VT30 derived from 1 site (MB31 Springbrook, Best-of-All Lookout)

This shrub and ground cover is comprised of tree ferns and rainforest shrubs. As this vegetation type occurs at high altitudes (typically above 1100m), it is often in cloud with moisture-laden air, resulting in a characteristic layer of mosses and ferns covering everything including trees and all other growth, forest litter and rocks. Vines are common and diverse, whilst epiphytes, especially ferns, are abundant.

Characteristic plant species

Approximately **49 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.

CANOPY

Upper layer of vegetation exposed to sunlight which creates a canopy that shades lower layers. Species which may also be emergent trees (tallest trees, visible above the canopy) are indicated.

Antarctic Beech

Nothofagus moorei

Sassafras

Doryphora sassafras

Soft Corkwood

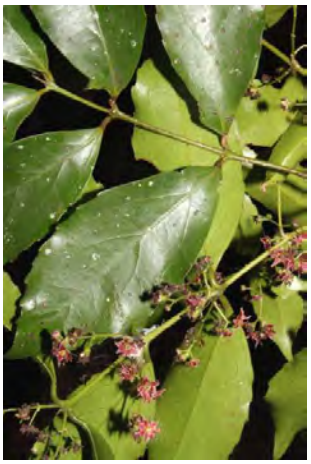
Ackama paniculosa
(formerly Caldcluvia paniculosa)

Featherwood

Polyosma cunninghamii

Red Apple

Acmena ingens



Red-flowered Socketwood

Daphnandra tenuipes

Prickly Ash

Orites excelsa

CITY OF GOLDCOAST.

SUB-CANOPY

Tree layer below canopy

Grey Possumwood

Quintinia verdonii

Red-flowered Socketwood

Daphnandra tenuipes

SHRUB LAYER

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

Native Gardinia

Atractocarpus benthamianus

Spice Bush / Honeysuckle Bush

Triunia youngiana

Walking Stick Palm

Linospadix monostachya

Ardisia

Ardisia bakeri

Prickly Tree Fern

Cyathea leichhardtiana

Small Psychotria

Psychotria simmondsiana

CITY OF GOLDCOAST.

GROUND LAYER

Lowest layer of vegetation. Plant types can include grasses; graminoids (non-woody plants with a grass-like morphology); ferns; and forbs (non-woody, broad-leaved, flowering plants).

Yellow-fruited Mat-rush

Lomandra spicata

GRAMINOID

Mountain Shield Fern

Lastreopsis silvestris

FERN

Sickle Fern

Pellaea nana

FERN

Stream Lily

Helmholtzia glaberrima

FORB (CLUMPING)

Pennywort

Hydrocotyle pedicellosa

FORB (CREEPING)

VINES AND CLIMBERS

Plant species which grow from the ground but use trees or other features for support and often extend upwards into the canopy

Wait-a-while/ Lawyer Vine

Calamus muelleri

Climbing Panax

Cephalaralia cephalobotrys

Southern Melodinus

Melodinus australis

CITY OF GOLDCOAST.

VINES AND CLIMBERS

Plant species which grow from the ground but use trees or other features for support and often extend upwards into the canopy

Morinda

Gynocythodes jasminoides
(formerly *Morinda jasminoides)*

Anchor Vine

Palmeria scandens

Prickly Supplejack

Ripogonum discolor

Large-leaved Wonga Vine

Pandorea baileyana

Small Supplejack

Ripogonum fawcettianum

Green-leaved Bramble

Rubus moorei

Small Climbing Fishbone Fern

Arthropteris beckleri

Climbing Fishbone Fern

Arthropteris tenella

Pothos

Pothos longipes

Fragrant Fern

Microsorum scandens

EPIPHYTES & LITHOPHYTES

Species that grow on the surface of other plants (epiphyte) and rocks (lithophyte)

Beech Orchid

Dendrobium falcorostrum

Fieldia

Fieldia australis

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

Doughwood

Acronychia octandra

Tree Waratah

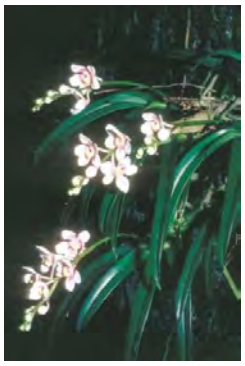
Alloxylon pinnatum

Narrow-leaved Tuckeroo

Cupaniopsis baileyana

Dorrigo Maple

Endiandra crassiflora



Ravine Orchid

Sarcochilus fitzgeraldii

Small-leaved Hazelwood

Symplocos baeuerlenii

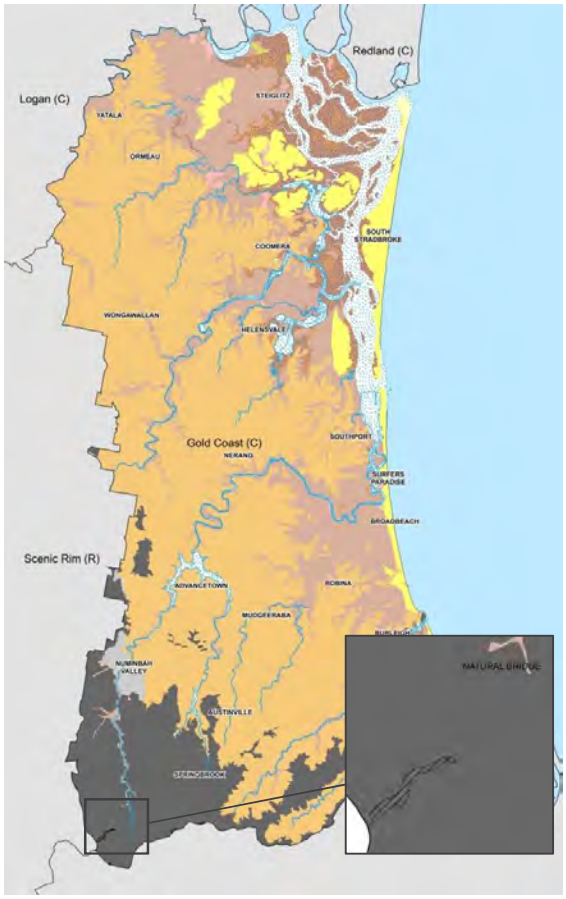
CITY OF GOLDCOAST.

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.

This vegetation type is limited to the basalt-derived soils at very high elevations (greater than 1100m above sea level), and within the Gold Coast occurs only on the highest southernmost parts of the Springbrook and Lamington Plateaus. This vegetation type transitions into VT29c (Subtropical Rainforest generally above >600m) at all but the highest sites within the city.

Historic distribution of Vegetation Type 30



LEGEND

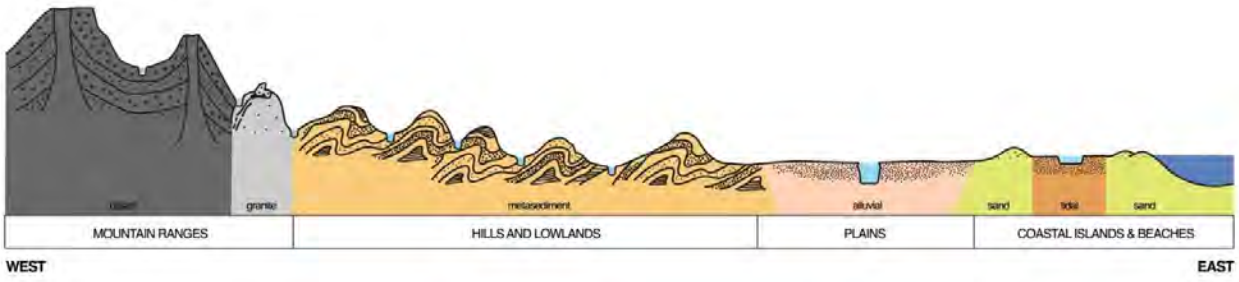
Vegetation Type 30 | Ocean | Major Waterways

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**

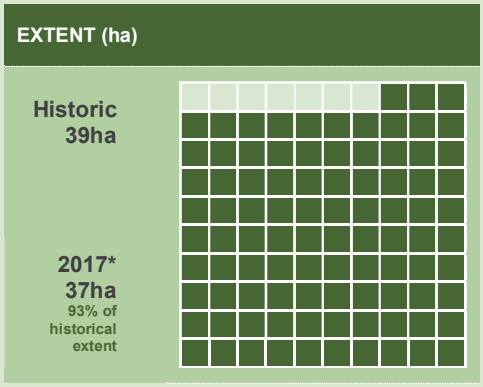
The most common underlying geology on the Gold Coast is metasediment rocks. Metasediment rocks are a type of metamorphic rock (rock transformed by heat and pressure). Originally these rocks were sedimentary rocks which were formed on the ocean floor through the deposition and solidification of sediment. 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 one of the least common types of rainforest and vegetation types within the Gold Coast. Most (93%) of its historical extent still remains The 2017 extent* of this vegetation type on the Gold Coast was 37 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

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

This vegetation type is sensitive to high temperature and associated drying, and as it only occurs on the highest, more exposed areas of the Springbrook and Lamington Plateaus, it cannot retreat upslope to cooler areas at higher elevation. Consequently, it is particularly threatened by climate change, temperature rises, and associated heat and drying. Additionally, if these areas become drier, they may be increasingly threatened by fire. Invasion by exotic weeds, particularly ground cover species including Mistweed and Crofton Weed (*Ageratina riparia* and *A. adenophora* respectively), is potentially the largest threat to the integrity of this vegetation community and appropriate weed management is critical, especially near edges and clearings.

About 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 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.