RAINFOREST

Warm Temperate

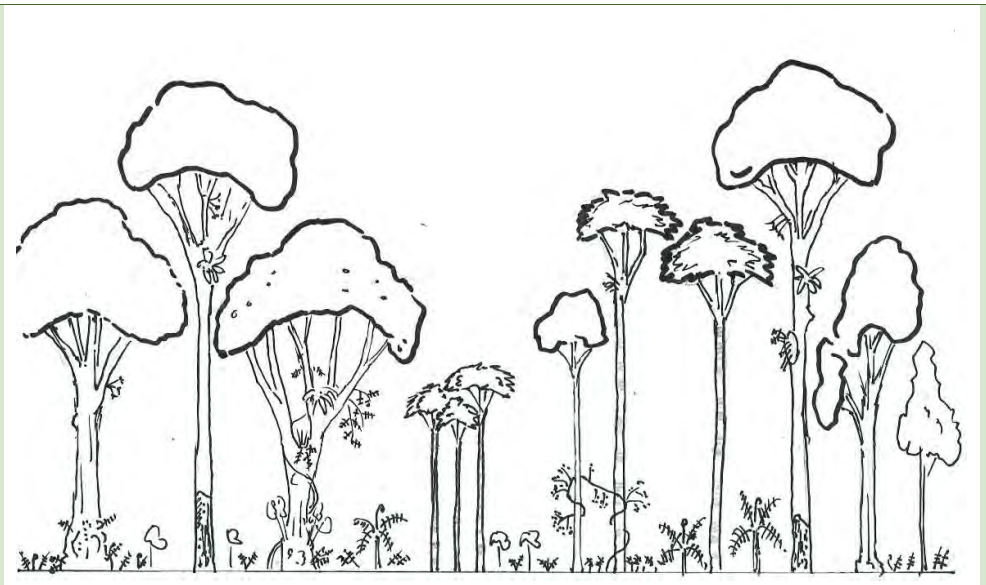
VEGETATION TYPE 2d

Regional Ecosystem: 12.8.18

Brush Box (*Lophostemon confertus*) Open Forest with Coachwood (*Ceratopetalum apetalu*m) Rainforest on Cainozoic Igneous Rocks

COMMUNITY STRUCTURE

Vegetation type (VT) 2d is a type of Warm temperate Rainforest. It has an open canopy from 16-22m high, generally comprised of rainforest species including Antarctic Beech (*Nothofagus moorei*), Springbrook Leatherwood (*Eucryphia jinksii*) and Coachwood (*Ceratopetalum apetalum*), together with an emergent layer (isolated trees above the canopy) of predominately Brush Box (*Lophostemon confertus*) to 30m high

Emergent		Large trees 22 – 30 m Tall open forest 10-30% cover
Canopy		Large trees 16 - 22 m Dense 50-80% cover
Sub canopy/ /shrub		Small trees/Shrubs 1 – 5 m Sparse 15-20% cover
Ground		Ferns 0-1m, Sparse 10-30% cover

Source: Searle, 2019 (derived from Ryan *et al,* 2019; MB08, Springbrook)

The combined upper tree canopies create a dense shade of 80-95% cover, and the sub-canopy/shrub layers are typically sparse, in which saplings intersperse with tree ferns and rainforest shrubs. Native ferns and the Stream Lily, *Helmholtzia glaberrima* dominate the ground cover, while a variety of rainforest vines are also conspicuous.

Characteristic plant species

Approximately **93** 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

Brush Box

Lophostemon confertus

Mountain Water Gum

Tristaniopsis collina

CANOPY

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

Coachwood

Ceratopetalum apetalum

Antarctic Beech

Nothofagus moorei

CITY OF GOLDCOAST.

CANOPY

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

Springbrook Leatherwood

Eucryphia jinksii

Mountain Water Gum

Tristaniopsis collina

Callicoma *Callicoma serratifolia*

Northern Acradenia

Acradenia euodiiformis

SUB-CANOPY / SHRUB LAYER

Small trees/shrubs below canopy

Coachwood

Ceratopetalum apetalum

Warratah Oak

Alloxylon pinnatum

CITY OF GOLDCOAST.

SUB-CANOPY / SHRUB LAYER

Small trees/shrubs below canopy

Tree Lomatia

Lomatia arborescens

Rusty Helicia

Helicia ferruginea

Ardisia

Ardisia bakeri

Bush Pepperbush

Tasmannia insipida

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).

Stream Lily

Helmholtzia glaberrima

FORB

Shiny Fan Fern

Sticherus flabellatus var. flabellatus

FERN

Hard Water Fern

Blechnum wattsii

FERN

Gristle Fern

Blechnum cartilagineum

FERN

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).

Mountain Mat Rush

Lomandra spicata

GRAMINOID

Exocarya

Exocarya scleroides

GRAMINOID

Forest Maidenhair Fern

Adiantum silvaticum

FERN

Bristly Tree Fern

Dicksonia youngiae

FERN

VINES

Vines may extend upwards into the canopy

Giant Blood Vine

Austrosteenisia glabristyla

Long-leaved Water Vine

Cissus sterculiifolia

VINES

Vines may extend upwards into the canopy

Wait-a-while/ Lawyer Vine

Calamus muelleri

Hairy Melodinus

Melodinus acutiflorus

Petermannia

Petermannia cirrosa

Prickly Supplejack

Ripogonum discolor

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.

Macleay Laurel

Anopterus macleayanus

Black Booyong

Argyrodendron actinophyllum subsp. *actinophyllum*

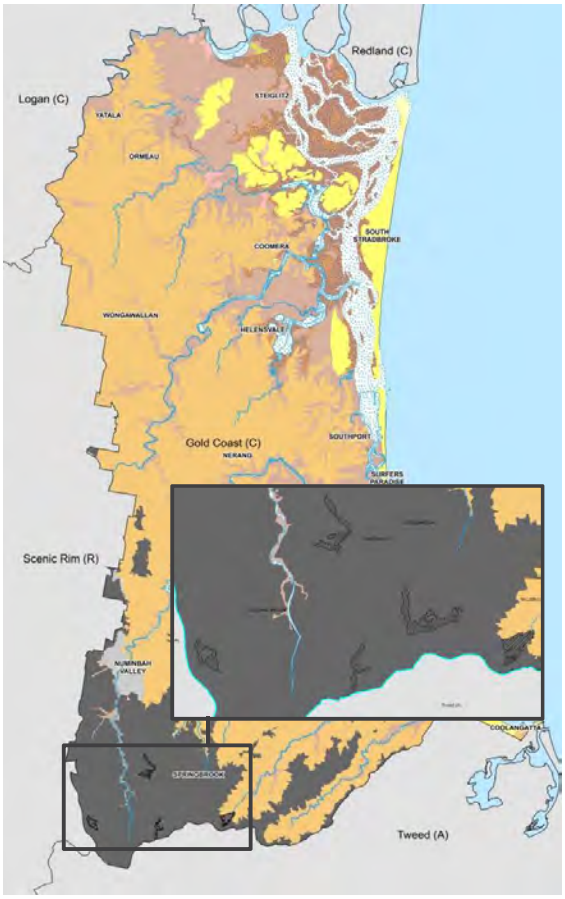
- **Corky Acronychia** *Acronychia suberosa*
- **Thick-leaved Laurel** *Cryptocarya meisneriana*
- **Long-leaved Tuckeroo** *Cupaniopsis newmanii*
- **Coral Fern** *Gleichenia rupestris*
- **Small Psychotria** *Psychotria simmondsiana* var. *glabrescens*
- **Smooth Scrub Turpentine** *Rhodamnia maideniana*
- **Spice Bush / Honeysuckle Bush** *Triunia youngiana*
- **Mountain Aristilochia** *Pararistolochia laheyana*

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.

Vegetation type 2d is restricted to southern part of the Gold Coast, occurring on moderately rich, red to brown soils on the edge of the Springbrook and Numinbah plateaus. These soils are derived from underlying rhyolitic rock (fine-grained, igneous rock rich in silica) and enriched with eroded basalt material. Patches of this vegetation type are restricted in area, only occurring on gentle slopes near the edges of these plateaus, merging with VT38 (New England Blackbutt tall open forest) upslope, and VT29/29b (Vine Forest on meta-sediments or on Cainozoic igneous rocks respectively) where they fall away downslope.

Historic distribution of Vegetation Type 2d



LEGEND

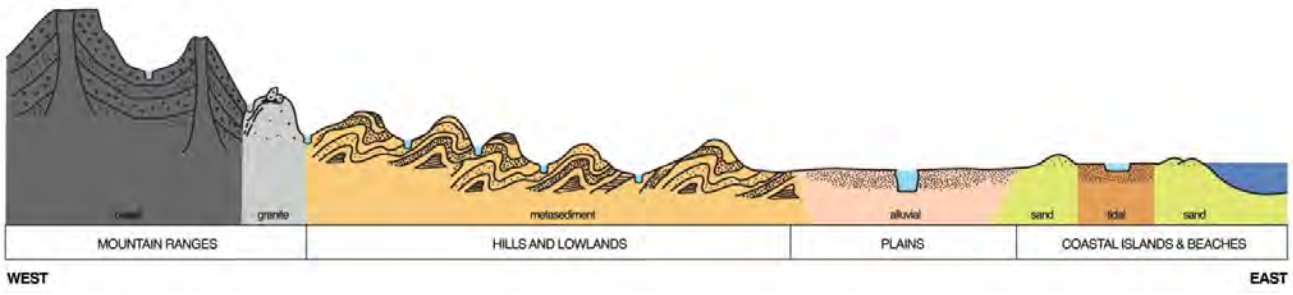
Vegetation Type 2d | Ocean | Major Waterways

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**

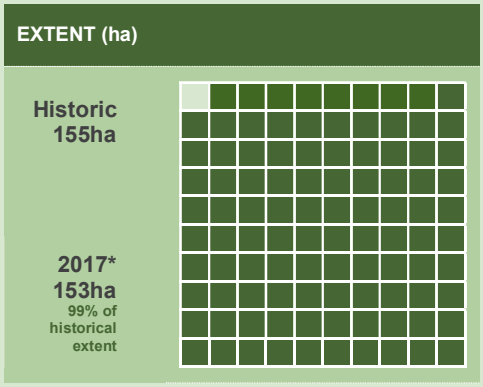
The most common underlying geology on the Gold Coast is metasediment rocks. Metasediment rocks are a type of metamorphic rock (rock transformed by heat and pressure). Originally these rocks were sedimentary rocks which were formed on the ocean floor through the deposition and solidification of sediment. 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 was rare within the Gold Coast, but much (99%) of its historical extent remains. The current extent* of this vegetation type on the Gold Coast is 153 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 ©

Version 3, November 2020

THREATS

Brush Box with Coachwood Forest on Cainozoic igneous rocks is restricted to small areas on gentle slopes on the edges of the Springbrook and Lamington plateaus. It probably requires very low frequency fires to retain or replenish Brush Box in the canopy of these communities. However, if these fires are more frequent, significant rainforest may be irreplaceably damaged. The fertile areas where this vegetation type occurs are also partially susceptible to infestation by Lantana (*Lantana camara)* and other exotic weeds, especially scrambling vines (notably *Pueraria lobata, Anredera cordifolia* and *Macfadyena unguis-cati*).

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.