RAINFOREST

subtropical

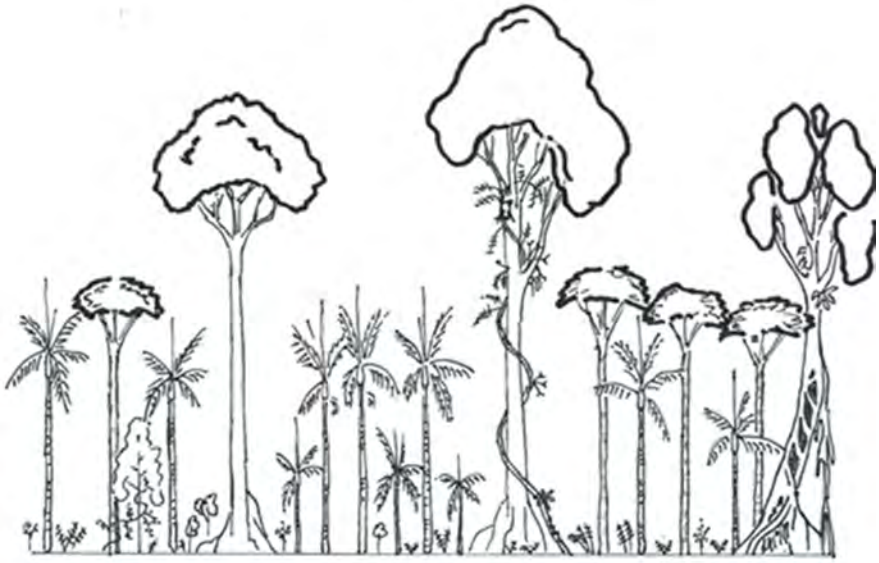
VEGETATION TYPE 29a

Regional Ecosystem: 12.11.1

Gully Vine Forest on Metasediments

COMMUNITY STRUCTURE

Vegetation type (VT) 29a typically consists of tall canopy (18-30m high) in which Yellow Carabeen (*Sloanea woollsii*), Lilly-pillies (*Syzygium francisii, S. coryanthum, S. moorei, S. luehmannii*), Rose-Marrara (*Pseudoweinmannia lachnocarpa*) and/or White Booyong (*Argyrodendron trifoliolatum*) are often present. It has a sparse emergent tree layer to 38m high. Bangalow Palm (*Archontophoenix cunninghamiana*) is dominant in the dense sub-canopy to lower canopy layer and is a diagnostic tree species at these densities, in some locations together with Coachwood (*Ceratopetalum apetalum*), typically creating a dense shade underneath with a 60-95% cover.

Emergent		Very tall Isolated trees 30-38m, Sparse 5-15% cover
Canopy		Large trees 18-30 m Dense 40-70% cover
Sub canopy		Medium trees 8-18m Mid-dense to dense 60-95% cover
Shrub		Shrubs 1-5m Sparse 5-15% cover
Ground		Grass/Ferns 0 - 0.5 m high Sparse 5-15% cover

Source: Searle, 2019 (derived from inferred local knowledge of VT29a (6 sites: MB30 (E branch Little Nerang Ck); MB33 (Coolamon gully, Nicholl Scrub NP); MB45 (Armitage Ck Rd, Canungra); MB46 (End Currumbin Ck Rd); MB47 (W slope Tallai Range, below Panorama); MB49 (Gully SE Fairview Mtn, Springbrook)

The shrub and ground cover layers are sparse to absent, with native ginger (*Alpinia caerulea*), palms, ferns and some shrubs occurring amongst leaf litter on the forest floor. Vines and epiphytes can also be common.

Characteristic plant species

Approximately **288 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

Rose Marrara
Pseudoweinmannia lachnocarpa

Strangler Fig
Ficus watkinsiana

Brush Box
Lophostemon confertus

Giant Water Gum
Syzygium francisii

Giant Stinging Tree
Dendrocnide excelsa

CANOPY

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

Sour Cherry
Syzygium corynanthum

Giant Water Gum
Syzygium francisii

Riberry
Syzygium luehmannii

Durobby, Coolamon
Syzygium moorei

White Booyong
Argyrodendron trifoliolatum

Rose Marrara
Pseudoweinmannia lachnocarpa

Yellow Carrabeen
Sloanea woollsii

Native Elm
Aphananthe philippinensis

Grey Walnut
Beilschmiedia elliptica

Bangalow Palm
Archontophoenix cunninghamiana

Scentless Rosewood
Synoum glandulosum

Maiden's Blush
Sloanea australis subsp. australis

CITY OF GOLDCOAST.

CANOPY

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

Soft Corkwood
Ackama paniculosa
(formerly Caldcluvia paniculosa)

Mango Bark
Canarium australasicum

Coachwood
Ceratopetalum apetalum

Myrtle Ebony
Diospyros pentamera

Yellow Tulip
Drypetes deplanchei

Green Tamarind
Elattostachys nervosa

White Fig
Ficus virens var. virens

Carrabeen
Karrabinia benthamiana

White Bolly Gum
Neolitsea dealbata

Native Olive
Olea paniculata

Brown Pine
Podocarpus elatus

Grey Possumwood
Quintinia verdonii

SUB-CANOPY

Tree layer below canopy

Bangalow Palm

Archontophoenix cunninghamiana

Coachwood

Ceratopetalum apetalum

Scrub Bloodwood

Baloghia inophylla

Ferny-leaved Bosistoa

Bosistoa pentacocca

Grey Walnut

Beilschmiedia elliptica

Grey Possumwood

Quintinia verdonii

Red-flowered Socketwood

Daphnandra tenuipes

Photo needed

Brown Myrtle

Backhousia leptopetala

Lilly Pilly

Syzygium smithii

(also known as Acmena smithii)

SHRUB LAYER

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

Native Ginger

Alpinia caerulea

Walking Stick Palm

Linospadix monostachya

Fissistigma

Meiogyne stenopetala

Cleistanthus

Cleistanthus cunninghamii

Scrub Bloodwood

Baloghia inophylla

Veiny Wilkiea

Wilkiea huegeliana

Prickly Tree Fern

Cyathea leichhardtiana

Thick-leaved Croton

Croton acronychioides

Scrub Ironwood

Gossia acmenoides

Thick-leaved Laurel

Cryptocarya meisneriana

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).

Forest Maidenhair Fern
Adiantum silvaticum
FERN

Native Ginger
Alpinia caerulea
FORB

Glossy Shield Fern
Lastreopsis marginans
FERN

Naked Shield Fern
Lastreopsis munita
FERN

Yellow Fruited Mat Rush
Lomandra spicata
GRAMINOID (MAT RUSH)

White Brunoniella
Brunoniella spiciflora
FORB

Dwarf Sickle Fern
Pellaea nana
FERN

Small-leaved Ginger
Alpinia arundelliana
FORB

Large-leaved Rainforest Spinach
Elatostema reticulatum
FORB

Exocarya
Exocarya scleroides
GRAMINOID (SEDGE)

Strap Water-fern
Blechnum patersonii subsp. queenslandicum
FERN

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

Native Yam
Dioscorea transversa

Barbed Wire Vine
Smilax australis

Native Wisteria
Callerya megasperma

Whip Vine, Supplejack
Flagellaria indica

Embelia
Embelia australiana

Hairy Melodinus
Melodinus acutiflorus

Petermannia
Petermannia cirrosa

Pothos
Pothos longipes

Climbing Fishbone Fern
Arthropteris tenella

Fragrant Fern
Microsorum scandens

EPIPHYTES

Species that grow on the surface of other plants

Staghorn

Platycerium superbum

Elkhorn

Platycerium bifurcatum

Bird's Nest Fern

Asplenium australasicum

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.

Giant Stream Lily

Helmholtzia glaberrima

Silver Leaf

Argophyllum nullumense

Finger Lime

Citrus australasica

Climbing Pandani

Freycinetia excelsa

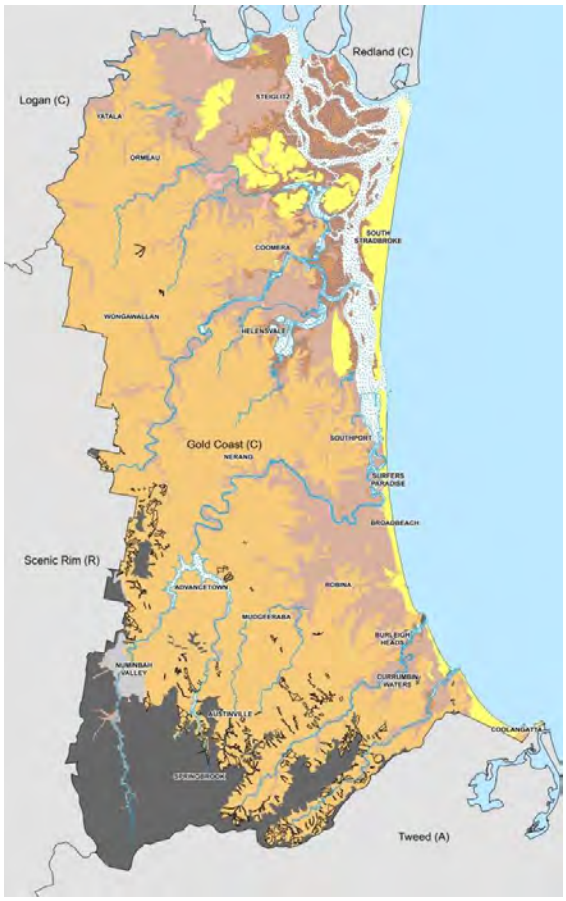
- **Veiny Lace Flower** *Archidendron muellerianum*
- **Ardisia** *Ardisia bakeri*
- **Pink Cherry** *Austrobuxus swainii*
- **Palm Lily** *Cordyline congesta*
- **Long-leaved Tuckeroo** *Cupaniopsis newmanii*
- **Smooth Tuckeroo** *Cupaniopsis serrata*
- **Lily of the Valley Orchid** *Dendrobium monophyllum*
- **Gympie Stinger** *Dendrocnide moroides*
- **Bristly Tree Fern** *Dicksonia youngiae*
- **Dagger Orchid** *Dockrillia pugioniformis*
- **Pencil Orchid** *Dockrillia teretifolia*
- **Rusty Rose Walnut** *Endiandra hayesii*
- **Green-leaved Rose Walnut** *Endiandra muelleri subsp. muelleri*
- **Rusty Helicia** *Helicia ferruginea*
- **Giant Stream Lily** *Helmholtzia glaberrima*
- **Red Boppel Nut** *Hicksbeachia pinnatifolia*
- **Soft Jasmine** *Jasminum jenniae*
- **Fine-leaved Tuckeroo** *Lepiderema pulchella*
- **Macadamia Nut** *Macadamia tetraphylla*
- **Southern Ochrosia** *Ochrosia moorei*
- **Smooth Scrub Turpentine** *Rhodamnia maideniana*
- **Hoop Pine Solanum** *Solanum serpens*
- **Straggling Nightshade** *Solanum shirleyanum*
- **Small-leaved Hazelwood** *Symplocos baeuerlenii*
- **Red Lily Pilly** *Syzygium hodgkinsoniae*
- **Spice Bush / Honeysuckle Bush** *Triunia youngiana*

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.

Gully vine forest on metasediments is restricted to moist, sheltered gullies on sediment-derived soils (shalestone, mudstone etc.) in the lower foothills of Gold Coast city. Similar to VT29 (Sub-tropical Vine Forest on metasediments), it replaces this drier rainforest type in wetter gullies, particularly in southern hinterland areas. Soils are generally at least moderately fertile, and typically have high moisture and organic content. Common localities include Lower Beechmont, Canungra, Advancetown, Numinbah, Mudgeeraba, Austinville, Bonogin, Tallebudgera and Currumbin Valleys.

Historic distribution of Vegetation Type 29a



LEGEND

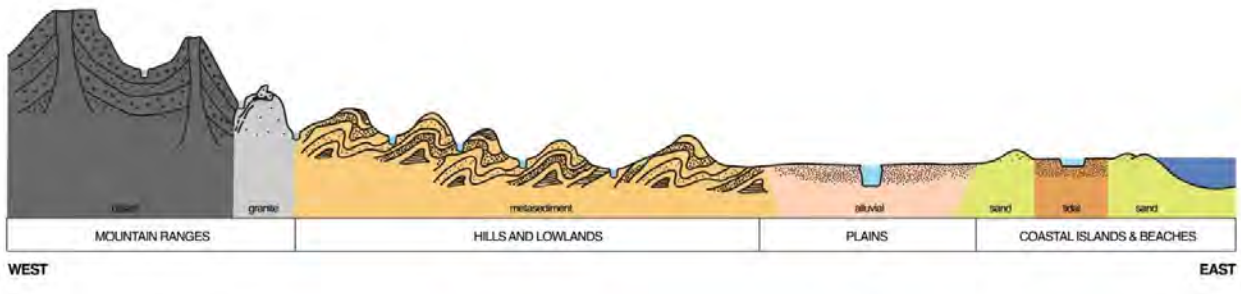
Vegetation Type 29a | Ocean | Major Waterways

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**

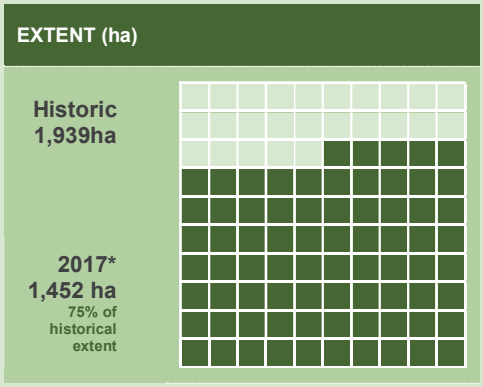
The most common underlying geology on the Gold Coast is metasediment rocks. Metasediment rocks are a type of metamorphic rock (rock transformed by heat and pressure). Originally these rocks were sedimentary rocks which were formed on the ocean floor through the deposition and solidification of sediment. 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 the third most common type of rainforest on the Gold Coast. The 2017 extent* of this vegetation type on the Gold Coast was 1,452 hectares.

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

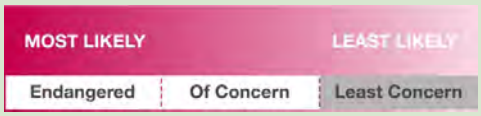


* Extent as mapped in 2017. Includes remnant vegetation only. Does not include disturbed remnant or regrowth.

Queensland

The conservation status of vegetation in Queensland is specified under the *Vegetation Management Act 1999*, which lists this regional ecosystem (RE 12.11.10) 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

Gully vine forest is sensitive to fire, particularly where it adjoins tall open forest in which eucalypts or Brush Box occur and should be managed to exclude fire. Clearing, landslip and localised flooding disturbances are additional threats to this vegetation, as appropriate land use management influences the sustainability of many areas of this vegetation. Invasion by exotic weeds, particularly Cat's Claw Creeper, Madeira Vine and Mist Flower is also major challenge in these fertile and productive vegetation communities, and require ongoing management and treatment, especially in fragmented areas and near forest edges.

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.