Biodiversity Report 2020
Technical Background Report

Sunshine Coast Local Government Area

2020 Edition

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Acknowledgements

Council wishes to thank all contributors and stakeholders involved in the development of this document.

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Contents

1 Introduction

The Biodiversity Report 2020 - Technical Background Report (TBR) outlines the datasets used and the methods adopted to analyse and generate the results for the reporting categories. The TBR is intended to be read in conjunction with the Biodiversity Report 2020 for the Sunshine Coast Local Government Area (the Report) and provides the background to each result as well as the reference and link to the detailed appendix. The appendices include a suit of tables detailing the local government and river catchment area's remnant and non-remnant vegetation, threatened flora and fauna, and conservation estate results.

The Report is the second report of its type to be produced by the Sunshine Coast Council and follows the inaugural Biodiversity Report 2016 for the Sunshine Coast Local Government Area.

This Report maintains the same reporting categories and provides a comprehensive overview of the local government areas biodiversity assets including:

- Native vegetation extent
- Vegetation community number, extent and distribution
- Conservation estate number, extent and distribution, and
- Threatened ecological communities, flora and fauna number, extent and distribution.

2 Method

2.1 Reporting categories and scale

In managing terrestrial biodiversity at a landscape scale within the Sunshine Coast Council area the focus is on our core **habitat** areas. The Sunshine Coast Council area has a range of different **vegetation** communities that contribute to **habitat areas** that may support threatened **flora and fauna** species listed as endangered, vulnerable or near threatened. Parts of our habitat areas are actively managed in the **conservation estate,** where properties are either protected by national parks, nature refuges, council reserves and statutory covenants or through voluntary programs such as Land for Wildlife. Habitat not conserved is considered more at risk from threats such as pest plants and animals, urbanisation, habitat loss and fragmentation. An improved understanding of these categories will assist to guide strategic biodiversity planning and investment. Table 2.1 lists the indicators associated with each reporting category. Collectively, these make up the reporting categories and are tabulated below.

Table 1: Biodiversity reporting categories and associated indicators

Reporting category	Indicator
Vegetation	• Total extent of vegetation • Type and extent of each vegetation community • Conservation status at a local, state and commonwealth scale
Flora and fauna	• Known endangered and vulnerable species • Catchment occurrence of endangered and vulnerable species • Seasonal and migratory fauna species
Conservation estate	• Type of conservation tenure and extent of vegetation conserved • Extent of vegetation in the conservation estate • Type and extent of vegetation communities within the conservation estate • Number and extent of poorly conserved vegetation communities
Habitats	• Number and type of core and connecting habitat areas • Extent of vegetation and conservation estate in core and connecting habitat areas • Occurrence of listed flora and fauna species within core and connecting habitat areas

*Each category utilises a different method of assessment outlined in the Methods.

Reporting units

The Sunshine Coast Council local government area as defined by the Queensland Government's Local Government Boundaries (2014) extent data (Department of Natural Resources and Mines) and the river catchments contained within the local government area are the reporting units used in this report. The local government area (LGA) supports the landscape management approach adopted by the *Environment and Liveability Strategy 2017* while the smaller catchment unit has a defined boundary thereby allowing changes in biodiversity to be more easily monitored, measured and communicated.

Spatial data analysis

All vegetation area values (from here on defined as extent) are reported in hectares and have been rounded to whole numbers, except values less than a hectare (10,000m^2). In these cases, results are reported to two decimal places to ensure representation of these limited extents.

2.2 Vegetation

Native vegetation is a fundamental component of biodiversity and provides an effective surrogate measure of general biodiversity health. Understanding the overall extent of vegetation, the type and extent of different vegetation communities and their respective conservation status in the Sunshine Coast Council area can inform the development of, and assist with, the effective delivery of strategic biodiversity conservation and management programs.

Vegetation extent provides an important snapshot in time against which future data can be compared in order to understand changes in vegetation extents across the Sunshine Coast Council area. The total extent of native vegetation in the Sunshine Coast Council area was determined by analysing state and council produced vegetation datasets.

The dataset and associated spatial layers were developed by combining the State's regional ecosystem vegetation mapping data and the fine-scale vegetation (FSV) data developed by Council to produce an integrated dataset known as the foundational vegetation layer.

Regional ecosystem vegetation mapping

The Queensland Herbarium's regional ecosystem mapping process originally defined by Sattler and Williams (1999) maps native remnant vegetation at a scale of 1:50,000 with a minimum patch/polygon size of 10,000m^2. The mapping uses a three part numeric code that systematically classifies remnant vegetation into distinct regional ecosystem/vegetation communities (Neldner *et al.,* 2012). The three part code refers to:

1. The biogeographic region: Queensland is split up into 13 bioregions and the Sunshine Coast Council area occurs within the South-east Queensland bioregion which is represented by the number 12
2. The land zone which is determined by the underlying geology or substrate on which the regional ecosystem occurs: there are 12 different land zones ranging from flood plain depositional soils and sands to ancient volcanic soils, and
3. The vegetation composition typically defined by the dominant vegetation species.

For example, if a vegetation community has a dominant canopy species made up of grey gums (*Eucalyptus propinqua*) and bloodwoods (*Corymbia intermedia*) occurring on volcanic soils and located within the South-east Queensland bioregion the resultant regional ecosystem classification would be 12.12.15 (for further information on the regional ecosystem classification go to www.ehp.qld.gov.au/regional-ecosystems).

The regional ecosystem data set also includes information about the extent of each regional ecosystem prior to European settlement, which is referred to as pre-clear regional ecosystem extent. This data indicates the type of vegetation that occurred in an area prior to European vegetation clearing. It should be noted that regional ecosystem datasets including Pre-clearing may be up-dated with new information. Version 11 (2017) of the regional ecosystem vegetation mapping dataset was used in the remnant vegetation analysis described in this Report.

For the purposes of this Report the term 'regional ecosystem' is used interchangeably with 'remnant vegetation'.

Fine-scale vegetation mapping

The Sunshine Coast Council has been using LiDAR technology to produce local-scale native vegetation mapping since 2008. LiDAR – Light Detection and Ranging – is a remote sensing method that uses laser technology to capture information about Earth's surface in great detail. A scanner which is typically attached to an airplane, helicopter or drone sends out a laser pulse which hits the Earth's surface and or the objects on it and a return pulse is recorded by the scanner. There were many multiple millions of laser points recorded for the Sunshine Coast Council area from which this

point data has been vectorised or converted into polygons thus defining a spatial extent of vegetation across the Sunshine Coast Council area.

This is the third LiDAR derived vegetation mapping dataset produced by council and is fundamental to the biodiversity reporting categories. The LiDAR data used for the Biodiversity Report 2020 analysis was captured on 16/11/2018 and subsequently processed into a native vegetation dataset at a scale of 1:2,500 with a minimum polygon size of 100m^2. A quality assurance process was applied to the data and resulted in the exclusion of certain polygons of vegetation such as, forestry, horticulture and urban areas likely to contain largely exotic species. Due to the LiDAR data height class used (class 5 high vegetation > = 2m) there is inherent limitations in mapping lower vegetation types such as some heathlands and grassland areas, and as a result some of these areas not well represented in this dataset.

This QA process was consistent with that applied to the previous native vegetation foundational dataset and this was considered critical to ensure repeatability and appropriate comparative analysis. For the purposes of reporting the term 'fine-scale vegetation' or 'FSV' is used interchangeably with 'non-remnant vegetation'.

Combined vegetation datasets to produce a foundational mapping layer

The regional ecosystem data was effectively combined or 'placed on-top' of the FSV data producing a foundational Sunshine Coast Council area native vegetation mapping layer which defines two distinct vegetation classes, remnant and non-remnant, maintaining the integrity of the respective datasets (see Figure 1).

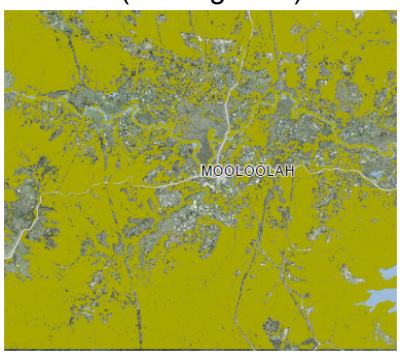

Plate 1a Fine-scale vegetation (FSV)

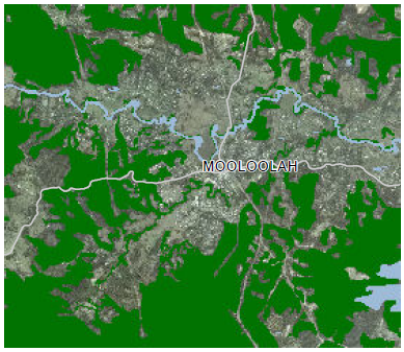

Plate 1b regional ecosystem vegetation

Plate 1c combined remnant and non-remnant vegetation

Figure 1: The non-remnant and remnant vegetation datasets were combined to provide a foundational Sunshine Coast Council area mapping layer.

Vegetation data analysis

Vegetation extent results were generated through spatial analysis of the Sunshine Coast Council area's native vegetation data using ESRI ArcInfo software designed in a Model-Builder framework and input data was manipulated via several geo-processing models. This approach was adopted to ensure repeatable results for comparison to previous data and future temporal analysis.

The different scales of the two datasets was considered when interpreting the results as the regional ecosystem data includes infrastructure such as roads and buildings, thus potentially overestimating the true extent of vegetation (Accad *et al*., 2001). In contrast, the FSV data may under estimate the true extent of non-remnant vegetation due to the removal of certain vegetation classes (i.e. forestry and horticulture) and establishing a minimum patch threshold (100m^2) during the quality assurance process.

Regional ecosystem extent, loss and conservation status

An understanding of the diversity, spatial extent and conservation status of different regional ecosystems is important to identify those which have a limited distribution, are under threat or at risk of being lost in order to improve protection and conservation management.

The extent of each regional ecosystem was determined through analysis of the regional ecosystem vegetation mapping dataset Version 11 (2017).

Vegetation loss analysis provides a long-term insight into the current extent and loss of each regional ecosystem since European settlement. This was undertaken by calculating the difference between the current and pre-clear extent data for each primary regional ecosystem.

The Queensland Government's regional ecosystem data is continually edited, amended, updated and published in map versions that are periodically released to the public. The different dataset versions enable comparisons to be drawn from one version to the next and provides an effective method of tracking change in vegetation extent over time. Version 11 regional ecosystem data was compared to Version 9 to identify changes for this report and is the basis of analyses to understand changes in vegetation extent associated with the *Environment & Liveability Strategy 2017* biodiversity target to 'maintain the 2016 native vegetation extent (no net loss)'. Table 2 below shows the year in which the data was published, released or captured.

Table 2 regional ecosystem publication and LiDAR data capture periods

Biodiversity Report	Regional Ecosystem dataset version release	LiDAR – fine-scale vegetation data capture
2016	2015	2014
2020	2017	2018

To assist with reporting on the 75 regional ecosystems occurring throughout the Sunshine Coast Council area the dominant species associated with each regional ecosystem was used to establish six broad vegetation communities. Vegetation results are reported at an individual regional ecosystem level, as well as the six broad vegetation groups.

The broad vegetation groups are:

1. Coastal foredune
2. Mangrove and saltmarsh
3. Melaleuca casuarina
4. Health and wallum
5. Eucalypt
6. Rainforest

Fine-scale vegetation analyses

Additional non-remnant vegetation analysis was undertaken by using the Regional Ecosystem Pre-clearing data and attributing the FSV extents to provide indicative identification of vegetation type and community.

Regional ecosystem conservation status

Under the *Vegetation Management Act 1999* three conservation status classifications *least concern*, *of concern* and *endangered* are being applied to individual regional ecosystems based on their remaining extent in the bioregion compared with their Pre-clearing extent.

The current conservation status of a regional ecosystem occurring in the Sunshine Coast Council area was identified by interrogating the State Government's Regional Ecosystem Description Database which provides the most up-to-date information about a particular regional ecosystems description, characteristics, distribution, declines and current status. The conservation status is determined by thresholds of remaining extents and criteria used under the *Vegetation Management Act* 1999 (the Act). The vegetation management status is listed in the Vegetation Management Regulation under the Act. Table 3 below for the specific criteria used to assess the status of regional ecosystems.

Table 3 State Regional Ecosystem conservation status criteria

***Vegetation Management Act 1999* Regional Ecosystem Conservation Status**	
Endangered	• remnant vegetation is less than 10% of its Pre-clearing extent across the bioregion; or • 10–30% of its Pre-clearing extent remains and the remnant vegetation is less than 10,000ha.
Of Concern	• remnant vegetation is 10–30% of its Pre-clearing extent across the bioregion; or

	• more than 30% of its Pre-clearing extent remains and the remnant extent is less than 10,000ha.
Least Concern	• remnant vegetation is over 30% of its Pre-clearing extent across the bioregion, and the remnant area is greater than 10,000ha.

The conservation status is used for a range of planning and management applications including the Biodiversity Planning Assessments and to determine environmentally sensitive areas that are used for regulation of the mining industry through provisions in the *Environmental Protection Act 1994*.

In addition to this, the percentage loss of each regional ecosystem in the Sunshine Coast Council area since European settlement was calculated using Equation 1.

Equation 1

$$\%\ \text{RE lost on Sunshine Coast} = \left(\frac{\text{Current RE extent on Sunshine Coast}}{\text{Pre - clearing extent of RE on Sunshine Coast}} \right) \times 100$$

Commonwealth listed threatened ecological communities

The Sunshine Coast Council area has three ecological communities listed as threatened under the Commonwealth Government's *Environmental Protection and Biodiversity Conservation Act 1999*. These include:

- **Critically endangered** Lowland Rainforest of Sub-tropical Australia
- **Endangered** Coastal Swamp Oak (*Casuarina glauca*) Forest of NSW and SEQ
- **Vulnerable** Subtropical and Temperate Coastal Saltmarsh

Commonwealth listed threatened ecological communities key diagnostics

Lowland Rainforest of Sub-tropical Australia (LRSA)

The Sunshine Coast Council area has nine regional ecosystems that are representative of the LRSA ecological community. The key diagnostic characteristics of the listed ecological community are:

- distribution of the ecological community is primarily in the NSW North Coast and South Eastern Queensland bioregions, according to Interim Biogeographic Regionalisation for Australia (IBRA) version 6.1 (2004)
- the ecological community occurs on: soils derived from basalt or alluvium; or enriched rhyolitic soils; or basalt enriched metasediments
- the ecological community generally occurs at an altitude less than 300 metres above sea level
- the ecological community typically occurs in areas with high annual rainfall (>1300mm)
- the ecological community is typically more than 2 km inland from the coast
- the structure of the ecological community is typically a tall (20m–30m) closed forest, often with multiple canopy layers, and
- patches of the ecological community typically have high species richness.

For full details of the listing advice for this listed ecological community please see the following link http://www.environment.gov.au/biodiversity/threatened/communities/pubs/101-conservation-advice.pdf

Coastal Swamp Oak (Casuarina glauca) Forest of NSW and SEQ (CSOF)

The Sunshine Coast Council area has two regional ecosystems that are representative of the CSOF ecological community. The key diagnostic characteristics of the listed ecological community are:

- Occurs in coastal catchments at elevations up to 50 m ASL, typically less than 20 m ASL, on coastal flats, floodplains, drainage lines, lake margins, wetlands and estuarine fringes where soils are at least occasionally saturated, water-logged or inundated. There are also minor occurrences on coastal dune swales or flats, particularly deflated dunes and dune soaks
- Occurs on soils derived from unconsolidated sediments (including alluvium), typically hydrosols (grey-black clay-loam and/or sandy loam soils) and sometimes organosols (peaty soils). It may occur in transitional soils (or catenas) where shallow unconsolidated sediments border lithic substrates
- Has an open woodland, woodland, forest, or closed forest structure, with a tree canopy that has a total crown cover1 of at least 10 per cent
- Has a canopy of trees dominated by Casuarina glauca (swamp-oak, swamp she-oak), and
- Other characteristics that may help identify the ecological community include:
    - Typically occurs where groundwater is saline or brackish
    - Typically occurs within 30km of the coast, but in some areas, such as along tidal river catchments, the ecological community can occur more than 100km inland
    - Does not occur on rocky headlands, sea cliffs or other consolidated sediments.

For full details of the listing advice for this listed ecological community please see the following link http://www.environment.gov.au/biodiversity/threatened/communities/pubs/141-conservation-advice.pdf

Subtropical and Temperate Coastal Saltmarsh (STCM)
The Sunshine Coast Council area has one predominant regional ecosystem that is representative of the STCM ecological community. The key diagnostic characteristics of the listed ecological community are:

- occurs south of 23° 37' S latitude - from the central Mackay coast on the east coast of Australia, southerly around to Shark Bay on the west coast of Australia (26° latitude), and including the Tasmanian coast and islands within the above range
- occurs on the coastal margin, along estuaries and coastal embayments and on low wave energy coasts
- occurs on places with at least some tidal connection, including rarely-inundated supratidal areas, intermittently opened or closed lagoons, and groundwater tidal influences, but not areas receiving only aerosol spray
- occurs on sandy or muddy substrate and may include coastal clay pans (and the like)
- consists of dense to patchy areas of characteristic coastal saltmarsh plant species (i.e. salt-tolerant herbs, succulent shrubs or grasses, that may also include bare sediment as part of the mosaic), and
- proportional cover by tree canopy such as mangroves, melaleucas or casuarinas is not greater than 50%, nor is proportional ground cover by seagrass greater than 50%, and
- characterised by salt-tolerant vegetation (halophytes) including: grasses, herbs, sedges, rushes and shrubs

For full details of the listing advice for this listed ecological community please see the following link http://www.environment.gov.au/biodiversity/threatened/communities/pubs/118-conservation-advice.pdf

Ecological communities at a national scale are identified, described and classified differently to that of the state's regional ecosystems. They do however use the regional ecosystems to assist in characterising these broad ecological communities (see Table 4).

Table 4: Diagnostic regional ecosystems for the LRSA, CSOF and STCM ecological communities in the Sunshine Coast Council area including their state conservation status

Commonwealth listed ecological communities		
Diagnostic regional ecosystem description		**Qld *VMA 1999* conservation status**
LRSA	12.3.1a	Endangered
	12.5.13a	Endangered
	12.8.3	Least Concern
	12.8.13	Of Concern
	12.11.1	Least Concern
	12.11.10	Least Concern
	12.12.1	Of Concern
	12.12.16	Least Concern
	*12.9-10.16	Of Concern
CSOF	12.1.1	Of Concern
	12.3.20	Endangered
STCM	12.1.2	Least Concern
	^12.1.3	Least Concern

*Regional ecosystem 12. 9-10.16 is only included where it is enriched with soils derived from landzone 3 (alluvia) or 8 (basalt).
^Regional ecosystem 12.1.3 is typically mangrove shrubland however in some circumstances may include saltmarsh features.

Refer to Appendix A for full details of each commonwealth listed regional ecosystem.

2.3 Habitat analysis

The term 'habitat' is used to holistically describe the biotic and abiotic elements of an area and includes soil, rocks, waterbodies, flora and fauna, along with the myriad of ecological processes needed for an area to function and remain viable.

The principles of landscape ecology and island biogeography underpins council's approach to mapping, describing and understanding the council area's habitat network. A number of GIS habitat models were peered reviewed and it was determined that a fragmentation model was the most appropriate enabling the identification of critical pinch-points and connectivity issues.

An internal buffer fragmentation model was applied to the Sunshine Coast Council foundational native vegetation layer to determine the nature and distribution of habitat areas throughout the council area. The mapping process categorised the Sunshine Coast Council area's vegetation into three broad landscape elements including core habitat areas, contiguous core habitat areas and connecting habitat areas (Figure 2).

Core habitat areas (CHA) are defined by patches of contiguous native vegetation (remnant and non-remnant) of 50 hectares or greater with an internal buffer *width* of 50 metres applied. A minimum contiguous area of 50 hectares was chosen to identify CHAs given relative scales to regional and state core habitat area identification (i.e. bioregional cores are defined as 500 hectares in extent). With an internal 50 metre buffer applied vegetation/habitat that remains connected (contiguous) but falls below the buffer width is subsequently classified as another class of habitat referred to as Contiguous Core Habitat Areas.

Contiguous core habitat areas (CCA) is vegetation that remains connected to a core habitat area but narrows below the defined width (constrained by a general 10 metre vegetation buffer which means CCA can extend through vegetation bottlenecks as narrow 20 metres). CCA is often irregularly shaped, consisting of multiple nodes and branches of vegetation extending from a central consolidated core habitat area (see inset Figure 2). This class of habitat has the potential to connect up multiple core habitat areas throughout the landscape and is considered an integral and functional component of most CHAs. The CCA provides important information about the level of fragmentation and ecological connectivity.

Figure 2 core and connecting habitat areas showing where CAA is differentiated from CHA need to replace inset example.

Connecting habitat areas (CNA) are defined as patches of native vegetation, made up of remnant and non-remnant vegetation, less than 50 hectares in area with internal buffers of 10 metres applied. Connecting habitat areas have been further categorised into patch sizes ranging from:

- **Large CNA** – these are patches greater than 25 hectare and less than 49.99 hectares of contiguous vegetation with a 10 metre internal buffer
- **Medium CNA** – these are patches greater than 10 hectares and less than 24.99 hectares of contiguous vegetation with a 10 metre internal buffer
- **Small CNA** – these are patches greater than 1 hectare and less than 9.99 hectares of contiguous vegetation with a 10 metre internal buffer, and
- **Very small CNA** – patches of vegetation <1 hectare but greater than 100m^2 and predominately made up of non-remnant vegetation

All habitat classes, except CHAs, has an outer 10 metres or edge of the polygon identified as 'fringing vegetation' – this class of habitat can assist in understanding edge-effects, movement bottle-necks and pinch-points where restoration works and management approaches could be applied to improve ecological connectivity and functionality.

Once the core and connecting habitat areas were determined spatial analysis was undertaken to quantify the extent of remnant and non-remnant within each of the habitat area and categorised both at a local government area and river catchment area.

It should be noted that areas that no longer contain vegetation may also provide habitat for particular species. For example, many raptor species prey on small mammals and reptiles in redundant cane fields providing an important food resource. However, the habitat value of non-vegetated areas was not considered as a part of the habitat analysis due to a lack of information and appropriate identification methods.

Flora and Fauna analysis

Flora and fauna are a fundamental component of biodiversity. However, it is unrealistic to monitor and manage every plant and animal species in the Sunshine Coast Council area due to their number and diversity, the habitats in which they are found and the large spatial extent of the region. However, an understanding of the endangered, vulnerable and near threatened species that exist in the Sunshine Coast Council area, and where they are known to occur, can inform future conservation and management strategies.

Rare and threatened species

Endangered, vulnerable and near threatened (EVNT) and presumed extinct species likely to occur in Queensland and the Sunshine Coast Council area were determined by querying the State Government's Species Profile database. This database stores confirmed records of plant and animal species listed under the Queensland Government's *Nature Conservation Act 1992* and the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* as occurring in Queensland. Table 5 summarises the datasets used and the treatment applied in the data analysis.

Table 5: Summary of datasets used in the EVNT data analysis for the Sunshine Coast

Dataset name	Owner	Description	Last updated or obtained	Precision/ accuracy scale
Species profile (previously wildnet)	Department of Environment and Heritage Protection (DEHP)	Queensland government's online wildlife database. Based on collated species lists and wildlife records acquired from a range of internal and external sources including specimen collections, research and monitoring programs, inventory programs including extension activities, literature records, wildlife permit returns and community wildlife recording programs. https://environment.ehp.qld.gov.au/report-request/species-list/	April 2020	10m to 20000m
Atlas of Living Australia	Australian Government Initiative with the Global Biodiversity Information Facility (GBIF), in collaboration with 17 partner organisations	The Atlas of Living Australia is a collaborative, national project that aggregates biodiversity data from multiple sources and makes it available and usable online. http://www.ala.org.au	April 2020	up to 26000m
Sunshine Coast Council	Various Sunshine Coast Council teams	Sourced from a range of Council programs and projects including Land for	2019	Various and unknown

Internal Data		Wildlife program, Council reserve management		

*A number of other associated datasets (Faunawatch, Koala Tracker and Glossy Black Cockatoo Conservancy) collected and managed using citizen science were used to determine the occurrence of individual species across the catchments.

2.4 Conservation estate analysis

The Sunshine Coast's conservation estate is a cornerstone of the region's approach to biodiversity conservation and management. Expanding the conservation estate is critical to protecting regional biodiversity, enhancing ecological connectivity and increasing the estate's resilience to climate change.

The conservation estate has two components (see Table 6):

1. **Protected areas** – state, council and private land tenures that include a level of protection for conservation purposes. These include land designated as:
   - State reserves and Nature Refuges gazetted under the *Nature Conservation Act 1992*
   - Reserve for environmental purposes under the *Land Act 1994*
   - A statutory covenant under the *Land Title Act 1994,* and
   - Freehold land owned by Council and managed for conservation purposes.

2. **Voluntary conservation areas** – land tenures not bound by any encumbrances for environmental conservation purposes. Voluntary conservation areas consist of land owned by private landholders who are engaged in the Land for Wildlife program, which aims to improve land management practices and actively manage habitat areas.

Table 6: Conservation estate tenure types and data source

Conservation estate	Conservation tenure type	Data source
Tenure with a legal protection mechanism	**State protected areas*** • National Parks • Conservation Parks	Protected Estates dataset (Department of Environment and Heritage Protection) downloaded at 26/11/2019
	Nature Refuge • Council and private freehold land	Department of Environment and Resource Management Version 26/11/2019
	Statutory covenants • voluntary and non-voluntary private freehold land	Sunshine Coast Council's Covenant dataset 26/11/2019.
Tenure with conservation as primary purpose	**Council conservation areas** (Council and State owned land managed by Council) • Council owned freehold • State owned Council trustee • Council Trust under Nominee • Riparian esplanades • Reserves outside of SCC cadastre	Sunshine Coast Council's Open Space (conservation) dataset 26/11/2019.
Tenure subject to voluntary conservation	**Land for Wildlife**	Land for Wildlife Enquire Database transferred into T1 Property as at Sept 2019.

*Queensland Government lands designated as "State Forests" or "Timber Reserve" were not included in the State protected areas. These tenures do not currently protect the biodiversity values that occur in these areas. However, the report recognises the biodiversity values of these areas and the non-plantation remnant and non-remnant vegetation occurring within these tenures are considered as a part of the vegetation and habitat analysis.

**The data used in this report associated with the state, nature refuge, statutory covenant, Council conservation areas and registered Land for Wildlife properties is representative of a point in time and therefore may not reflect property changes, including tenure gazettal and designations occurring after December 2019.

Conservation estate and associated vegetation

Establishing the extent and composition of vegetation in the conservation estate and associated tenures provides important information on the habitat values being conserved. It also provides a baseline from which the estate can be increased to ensure adequate representation and protection of the region's diverse vegetation communities.

The extent and composition of vegetation in the conservation estate and associated tenures were determined through a GIS spatial analysis of the Sunshine Coast vegetation layer and available cadastral and tenure datasets. To ensure that individual properties of the conservation estate were analysed only once and that results represented the actual extent of reported tenures, a hierarchy priority method was applied. The hierarchical priorities were:

1. Nature Refuges
2. Covenants
3. State protected areas
4. Council conservation areas, and
5. Land for Wildlife.

This priority hierarchy was particularly relevant to properties with multiple conservation tenures, for example, a Land for Wildlife property with a registered statutory covenant or a Council conservation area with a Nature Refuge.

For the purposes of reporting the various conservation tenures are grouped into three classes including:

1. **State** made up of National and Conservation Parks;
2. **Council** made up of Nature Refuge, freehold and trustee land; and
3. **Private** made up of Nature Refuge, covenants and Land for Wildlife.

Conservation estate and poorly conserved regional ecosystems

Understanding which regional ecosystems are represented within the conservation estate (excluding Land for Wildlife properties) and their respective extents is vital to ensure long-term protection and management of the region's biodiversity.

The nationally accepted Comprehensive Adequate and Representative (CAR) reserve system (ANZECC & MCFFA, 1997) approach to understanding appropriate levels of conservation informed the identification of the Sunshine Coast's poorly conserved regional ecosystems.

The CAR criteria and method used to define adequacy was applied to the conservation estate's protected area tenures (excluding Land for Wildlife properties), and the Sunshine Coast vegetation layer to identify regional ecosystems considered to be poorly conserved at a Sunshine Coast Council local government area scale.

This was determined by comparing the extent to which a regional ecosystem is currently 'protected' to its Pre-clearing extent (Equation 2). If the current protected extent exceeds 10% of the total Pre-clearing extent, the regional ecosystem was considered to be adequately represented however, if the extent was less than 10%, it was considered to be poorly conserved.

Equation 2

$$\%\ \text{of Pre - clearing RE extent in conservation} = \frac{\text{Current extent of RE in protected areas}}{\text{Pre - clearing extent of RE}} \times 100$$

Protected areas and poorly conserved regional ecosystems

Analysis undertaken determined the Sunshine Coast Council area has 24 poorly conserved regional ecosystems including three melaleuca, two heath and wallum, three rainforest and 16 eucalypt vegetation communities (see Table 7).

Table 7 Sunshine Coast Council area's poorly conserved regional ecosystems

Vegetation communities	Number of poorly conserved at SCC LGA	Poorly conserved	Pre-clearing extent (ha)	Current extent (ha)	Non-remnant extent (ha)	Extent in protected areas (ha)	Additional extent required to be adequately conserved at SCC LGA scale (ha)
Heath and wallum	2	12.2.15a	2	2	0	0	1
		12.9-10.22	263	15	37	17	9
Melaleuca	3	12.3.4	5,728	1,327	910	323	249
		12.3.7	1,025	462	192	38	64
		12.3.7b	80	80	0.1	0	8
Eucalypt	16	12.2.8	60	8	6	2	4
		12.3.2	9,301	3,026	1,745	743	187
		12.3.11	11,273	578	1,115	212	915
		12.3.11a	9	4	4	0	1
		12.5.2a	471	18	131	11	36
		12.5.3	12,126	1,390	985	707	505
		12.8.8	3,457	578	1,111	222	215
		12.8.8a	67	22	26	2	5
		12.8.14	747	127	238	9	66
		12.9-10.1	2,569	627	455	111	146
		12.9-10.4	7,881	1,611	762	650	138
		12.9-10.7a	1,636	228	398	28	136
		12.9-10.14a	3,819	1,414	711	376	6
		12.11.3b	127	101	23	0	13
		12.11.14	3,642	384	543	101	263
		12.12.12	9,771	1,032	1,910	191	786
Rainforests	3	12.3.1a	4,554	1,749.6	906	421	34
		12.8.3	12,758	1,561	3,645	580	696
		12.8.13	25	1	7	0	3

** Regional ecosystems considered to have limited Pre-clearing extent (less than 200 hectares) within the Sunshine Coast Council area*

Seven poorly conserved regional ecosystems are considered to have had limited Pre-clearing extents of less than 200 hectares and of those five ecosystems have no current representation in protection. Regional ecosystems with limited Pre-clearing and current extents will present challenges to achieving adequate representation in the conservation estate. This will be particularly difficult where the remaining extents of a regional ecosystem is spatially scattered across the region and made up of multiple small patches, resulting in the need to secure numerous properties potentially making adequate representation economically unviable.

For full details of each regional ecosystem and their relative protections refer to Appendix C

3 Glossary

Term	Description
Biodiversity	The diversity of all life forms including plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part.
Bioregion	A biogeographic region in which a regional ecosystem is found. These regions are based on broad landscape patterns that reflect the major structural geologies and climate as well as major changes in flora and fauna assemblages.
Catchment	The area where water is collected by the natural landscape. In a catchment, all rain and run-off water eventually flows to a creek, river, lake or ocean, or into the groundwater system.
Connecting habitat areas	Areas of remnant and non-remnant vegetation less than 50 hectares in extent, and which may comprise: • fragmented and isolated patches of vegetation as small as $10m^2$ • a group of loosely aggregated, but proximal, small habitat fragments in natural or near natural condition • groups of habitat fragments within discrete physical regions such as catchments and landform elements not identified as core habitat areas
Conservation	The preservation, protection, or restoration of the natural environment, natural ecosystems, vegetation, and wildlife.
Conservation estate	Vegetation conserved through a legislative and/or voluntary conservation mechanism.
Core Habitat Areas (CHAs)	Contiguous remnant and non-remnant vegetation equal to or greater than 50 hectares in extent, which may comprise: • multiple vegetation community types (or regional ecosystems) • wetlands, rivers and wide coastal waterways that traverse the core habitat area • known rare and threatened flora and fauna populations • lands with a variety of tenures • infrastructure easements that retain a grassy ground cover or shrubby understorey that reflects the characteristics of nearby habitat types • narrow infrastructure corridors such as local roads or rail easements
Ecological functionality	The range of services provided to an organism through a subset of ecological processes and habitat structures. Each function is the result of the natural processes of the total ecological subsystem of which it is a part. Natural processes, in turn, are the result of complex interactions between biotic (living organisms) and abiotic (chemical and physical) components of ecosystems.
Ecosystem	An ecosystem is a natural unit consisting of all plants, animals and microorganisms in an area, functioning together with all the non-living physical factors, including soil, rocks, minerals, water sources and the local atmosphere.

Term	Description
Endangered	Under the Queensland *Nature Conservation Act 1992*, a regulation may prescribe native wildlife as endangered wildlife if: (a) there have not been thorough searches conducted for the wildlife and the wildlife has not been seen in the wild over a period that is appropriate for the life cycle or form of the wildlife (b) the habitat or distribution of the wildlife has been reduced to an extent that the wildlife may be in danger of extinction (c) the population size of the wildlife has declined, or is likely to decline, to an extent that the wildlife may be in danger of extinction (d) the survival of the wildlife in the wild is unlikely if a threatening process continues
Endemic	The situation in which a species is restricted to a particular geographic region, owing to factors such as isolation or response to soil or climatic conditions. Such a taxon is said to be endemic to that region.
Environment Levy	Refers to a levy raised by the Sunshine Coast Regional Council (in accordance with section 971 of the *Queensland local Government Act 2009*), on all rateable properties within the jurisdiction, in order to assist with environmental protection and management.
EPBC Act	The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places – defined in the EPBC Act as matters of national environmental significance.
Extinct in the wild	Under the Queensland *Nature Conservation Act 1992*, a regulation may prescribe native wildlife as extinct in the wild wildlife if: (a) there have been thorough searches conducted for the wildlife (b) the wildlife has not been seen in the wild over a period that is appropriate for the life cycle or form of the wildlife
Fauna	Animal life.
Fine-scale vegetation (FSV)	Fine-scale vegetation (woody vegetation) was identified from a dataset produced by the Sunshine Coast Council generated using a combination of Aerial Laser Survey (LiDAR), Vegetation Index (NDVI), infra-red and aerial photography. It captures much of the vegetation outside the mapped blocks of vegetation through the regional ecosystem mapping. This report also refers to this data set as 'non-remnant vegetation' layer.
Flora	Plant life.
Forest reserves	The dedication of areas within State Forests, Timber Reserves, Land Act reserves or unallocated State land as protected areas under the Na*ture Conservation Act 1992.*
Geographical Information System (GIS)	A system designed to capture, store, manipulate, analyse, manage, and present all types of geographical data.
Geoprocessing models	These models utilise spatial data analysis tools (e.g., union, merge, append, erase, clip) within a Geographical Information System (GIS).

Term	Description
Habitat	(1) Place where an organism or a biological population normally lives or occurs (2) The location or environment where an organism is most likely to be found (3) The home to a particular organism where the species will attempt to be as adaptive as possible to that particular environment (4) The place being occupied by an organism, population, or community
Habitat connectivity	The connectedness between areas of habitat.
Habitat fragmentation	The situation when a continuous habitat has become divided into separate and often isolated patches of small habitat areas.
Land for Wildlife program	Land for Wildlife is a free, voluntary conservation program that supports participants in protecting, enhancing and rehabilitating native flora and fauna on their property. Land for Wildlife registration does not alter the legal status of a property, convey the right of public access, nor represent an official wildlife sanctuary.
Landscape ecology	The science of studying and improving relationships between ecological processes in the environment and particular ecosystems. This is done within a variety of landscape scales, development spatial patterns, and organizational levels of research and policy.
Least concern	Under the Queensland *Nature Conservation Act 1992*, a regulation may prescribe native wildlife as least concern wildlife if the wildlife is common or abundant and is likely to survive in the wild.
LiDAR	Light Detection and Ranging Data (LiDAR) is aerial laser survey technology which remotely senses the height of objects on the earth's surface using laser scanners mounted to an aircraft.
Local Government Area (LGA)	The area defined by the Queensland Boundary Commissioner as being the Sunshine Coast Council area.
National Parks National Parks (Scientific) National Parks (Recovery)	A class of protected area declared under the *Nature Conservation Act 1992.*
Natural assets	Resources (actual and potential) supplied by nature including air, water, plants and animals.
Nature Conservation Act 1992	One of the Queensland government's central pieces of environmental legislation. It provides a legal framework to protect and manage state, nationally and internationally important flora, fauna and ecological communities.
Nature Refuge	A class of protected area declared under the *Nature Conservation Act 1992*
Near threatened	Under the Queensland *Nature Conservation Act 1992*, a regulation may prescribe native wildlife as: (a) the population size or distribution of the wildlife is small and may become smaller

Term	Description
	(b) the population size of the wildlife has declined, or is likely to decline, at a rate higher than the usual rate for population changes for the wildlife (c) the survival of the wildlife in the wild is affected to an extent that the wildlife is in danger of becoming vulnerable
Non-remnant vegetation	For the purpose of this Report, means vegetation that doesn't qualify as remnant vegetation (see below definition) and may include native, indigenous, endemic, non-native, and invasive pest flora species.
Pre-clearing regional ecosystem	Pre-clearing vegetation is defined by the *Vegetation Management Act 1999* (amended 2009) and depicted by the Queensland Herbarium's regional ecosystem mapping as the vegetation present before clearing
Regional ecosystem	A vegetation community in a bioregion that is consistently associated with a particular combination of geology, landform and soil (Sattler and Williams, 1999).
Remnant vegetation	As defined by the *Vegetation Management Act 1999* (amended 2009) and depicted by the Queensland Herbarium's regional ecosystem mapping. Remnant vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy.
Resource reserves	A class of protected area prescribed under the *Nature Conservation Act 1992.*
River catchments	A catchment is defined as the area of land that contains a river system and its associated coastal waters. Catchment boundaries are often formed by high ground separating them, at a line known as a watershed.
Theory of island biogeography	Island biogeography is a field that examines the factors that affect the species richness of isolated natural communities. The theory was developed to explain the species richness of actual islands. It has since been extended and used in reference to any ecosystem surrounded by unlike ecosystems.
Threatened ecological community	Ecological communities listed under the *Environment Protection and Biodiversity Conservation Act 1999*. An ecological community may be categorised as critically endangered, endangered or vulnerable.
Urbanisation	Urbanisation is the increase in the proportion of people living in towns and cities.
Vegetation	Vegetation is all the plants or plant life of a place, taken as a whole.
Vegetation community	An assembly of different species of plants growing together in a particular habitat; the floral component of an ecosystem.
Vegetation Management Act 1999	The purpose of the *Vegetation Management Act 1999* is to regulate the clearing of vegetation in a way that conserves regional ecosystems, conserves vegetation in declared areas, ensures clearing does not cause land degradation, prevents the loss of biodiversity, manages the environmental effects of clearing in relation to the abovementioned elements and reduces greenhouse emissions.
Vulnerable	Under the *Queensland Nature Conservation Act 1992*, a regulation may prescribe native wildlife as vulnerable wildlife if:

Term	Description
	(a) the population size or distribution of the wildlife has declined, or is likely to decline, to an extent that the wildlife may become endangered because of a threatening process (b) the population size of the wildlife has been seriously depleted and the protection of the wildlife is not secured (c) the population of the wildlife is (i) low or localised; (ii) dependent on habitat that has been, or is likely to be, adversely affected, in terms of quantity or quality, by a threatening process
Woody vegetation	A woody plant is a plant that produces wood as its structural tissue. Woody plants are usually either trees or shrubs. Remnant vegetation under the *Vegetation Management Act 1999* includes both woody and non-woody vegetation. Woody vegetation is mapped as remnant if the dominant canopy has greater than 70% of the height and greater than 50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy.

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Appendix A: Sunshine Coast vegetation communities and regional ecosystems

Please note: All extent values have been rounded to whole numbers, except where extent values are less than 10,000m^2 (1ha). These values are reported to two decimal places to ensure representation of their limited extents.
[#] Current extent value is greater than the pre extent value due to the reclassification of the regional ecosystem by the Queensland Herbarium.

		Regional ecosystem									
Vegetation communities (Number of regional ecosystems within each)	Classification	Description	Ver 11 [2017] Pre-clearing extent (ha)	Ver 9 [2015] extent (ha)	Ver 11 [2017] extent (ha)	Ver 11 [2017] to Pre-clearing Loss (%)	Non-remnant vegetation attributed with Pre-clearing classification extent (ha)	Conservation status (VMA 1999)	Combined Pre-clearing extent (ha)	Combined current extent (ha)	Combined extent loss (ha) (%)
Mangrove and saltmarsh (2)	12.1.2	Saltpan vegetation comprising *Sporobolus virginicus* grassland and samphire herbland. Grasses including *Zoysia macrantha* subsp. *macrantha* sometimes present in upper portions of tidal flats. Includes saline or brackish sedgelands. Occurs on Quaternary estuarine deposits. Marine plains/tidal flats.	**701**	**489**	**490**	30	**14**	Least Concern	2,328	2,106	222 (10%)
	12.1.3	Mangrove shrubland to low closed forest. Occurs on Quaternary estuarine deposits.	**1,627**	**1,613**	**1,617**	1	**41**	Least Concern			
Foredunes (2)	12.2.5	Open-forest to low closed forest. Species can include *Corymbia intermedia, C. tessellaris, Banksia integrifolia subsp. integrifolia, B. aemula, Acacia spp., Lophostemon confertus, Callitris columellaris, Livistona spp.* and *Endiandra sieberi. Melaleuca quinquenervia* in swales. Understorey generally shrubby and can include vine forest species. Occurs of Quaternary coastal dunes and beaches and sandy banks of coastal streams.	**205**	**64**	**58**	72	**22**	Least Concern	628	334	294 (47%)
	12.2.14	Strand and fore dune complex comprising Spinifex sericeus grassland *Casuarina equisetifolia subsp. incana* woodland/open-forest and with *Acacia leiocalyx, A. disparrima subsp. disparrima, Banksia integrifolia subsp. integrifolia, Pandanus tectorius, Corymbia tessellaris, Cupaniopsis anacardioides, Acronychia imperforata*. Occurs mostly on frontal dunes and beaches but can occur on exposed parts of dunes further inland.	**423**	**274**	**276**	35	**32**	Least Concern			
Heath and wallum (15)	12.2.9	*Banksia aemula* low shrubby woodland. Mallee eucalypts sometimes present, e.g. *Eucalyptus latisinensis*. Occurs on Quaternary coastal dunes and sandplains with deeply leached soils.	**179**	**69**	**68**	62	**9**	Least Concern	8,270	2,900	5,370 (65%)
	12.2.12	Closed or wet heath +/- stunted emergent shrubs/low trees. Characteristic shrubs include Banksia spp. (especially B. robur) *Boronia falcifolia, Epacris spp., Baeckea frutescens, Schoenus brevifolius, Leptospermum spp., Hakea actites, Melaleuca thymifolia, M. nodosa, Xanthorrhoea fulva with Baloskion spp.* and *Sporadanthus spp*. in ground layer. Occurs on poorly drained Quaternary coastal dunes and sandplains. Low part of sand mass coastal landscapes where water collects from both overland flow and infiltration from adjoining sand dunes.	**2,334**	**748**	**748**	68	**148**	Least Concern			
	12.2.15	Coastal sedgeland with *Baumea spp., Juncus spp. Lepironia articulata, Gahnia spp.* and *Eleocharis spp*. and associated water bodies. Occurs on Quaternary coastal dunes and beaches. Low part of coastal landscape where water collects from both overland flow and infiltration from adjoining sand dunes.	**207**	**160**	**160**	23	**7**	Least Concern			
	12.2.15a	Lacustrine wetland (e.g. lake). Permanent and semi-permanent window lakes. Occurs as a window into the water table on Quaternary coastal dunes and beaches. Low part of coastal landscape where water collects from both overland flow and infiltration from adjoining sand dunes.	**2**	**2**	**2**	0	**0**	Least Concern			
	12.3.8	Characteristic species include *Cyperus spp., Schoenoplectus spp., Philydrum lanuginosum, Eleocharis spp., Leersia hexandra, Triglochin procerum, Nymphaea spp., Nymphoides indica, Persicaria spp., Phragmites karka Typha spp*. and a	**272**	**206**	**205**	25	**16**	Of Concern			

		Regional ecosystem									
Vegetation communities (Number of regional ecosystems within each)	Classification	Description	Ver 11 [2017] Pre-clearing extent (ha)	Ver 9 [2015] extent (ha)	Ver 11 [2017] extent (ha)	Ver 11 [2017] to Pre-clearing Loss (%)	Non-remnant vegetation attributed with Pre-clearing classification extent (ha)	Conservation status (VMA 1999)	Combined Pre-clearing extent (ha)	Combined current extent (ha)	Combined extent loss (ha) (%)
		wide range of sedges grasses or forbs. Occurs in freshwater swamps associated with floodplains.									
	12.3.13	Closed or wet heathland . Characteristic species include *Melaleuca thymifolia, Banksia robur, Xanthorrhoea fulva, Hakea actites, Leptospermum spp.* and *Baeckea frutescens*. Occurs on seasonally waterlogged Quaternary alluvial plains along coastal lowlands.	**4,175**	**1,309**	**1,295**	69	**239**	Least Concern			
	12.3.14	*Banksia aemula* woodland +/- mallee eucalypt low woodland. Associated canopy species include *Eucalyptus latisinensis, Corymbia intermedia, E. robusta* and *Lophostemon confertus*. Occurs on Quaternary alluvial plains along coastal lowlands.	**487**	**124**	**124**	74	**49**	Of Concern			
	12.5.9	Open or dry heath. Characteristic shrubs include *Leptospermum spp., Leucopogon spp., Ricinocarpos pinifolius, Strangea linearis, Brachyloma daphnoides, Persoonia virgata, Xanthorrhoea spp., Styphelia viridis, Monotoca scoparia, Woollsia pungens* and stunted *Allocasuarina littoralis*. Includes minor seepage areas containing *Banksia robur* and *Xanthorrhoea fulva*. Occurs on complex of remnant Tertiary surfaces and Tertiary sedimentary rocks. Lower slopes.	**50**	**23**	**23**	53	**3**	Of Concern			
	12.5.10	*Banksia aemula +/- E. latisinensis* low shrubby open-woodland. Diverse understorey of heath species. Occurs on complex of remnant Tertiary surfaces and Tertiary sedimentary rocks.	**45**	**35**	**35**	23	**5**	Least Concern			
	12.8.19	Montane shrubland, heath and rock pavement with scattered shrubs or open-woodland. Occurs on Cainozoic igneous rocks especially rhyolite and trachyte.	**207**	**207**	**207**	0	**0**	Of Concern			
	12.9-10.22	Closed sedgeland to heathland with emergent trees. Lower slopes subject to periodic water logging. Characteristic species include *Schoenus brevifolius* and/or *Baumea juncea* and/or *Banksia robur* and/or *Melaleuca nodosa*. Sometimes grading into *Banksia aemula* woodland on rises. Occurs on Cainozoic and Mesozoic sediments.	**263**	**18**	**15**	94	**37**	Of Concern			
	12.12.10	Shrubland or heath. Associated with rocky soils derived from Mesozoic to Proterozoic igneous rocks.	**7**	**7**	**7**	0	**0**	Of Concern			
	12.12.19	Vegetation complex of exposed rocky headlands. Vegetation types include *Themeda triandra* grassland and wind-sheared shrubland and woodland. Occurs on Mesozoic to Proterozoic igneous headlands.	**9**	**4**	**4**	62	**1**	Of Concern			
	12.12.19x2	Vegetation complex of exposed rocky headlands. Vegetation types include *Themeda triandra* grassland and wind-sheared shrubland and woodland. Occurs on headlands of Cainozoic and Mesozoic sediments.	**26**	**4**	**4**	84	**2**	Of Concern			
	12.12.19x3	Vegetation complex of exposed headlands. Vegetation types include *Themeda triandra* grassland and wind-sheared shrubland and woodland. Occurs on headlands of remnant Tertiary surfaces.	**7**	**4**	**4**	47	**1**	Of Concern			
Melaleuca Casuarina (10)	12.1.1	*Casuarina glauca* +/- mangroves open-forest. Occurs on margins of Quaternary estuarine deposits.	**680**	**425**	**425**	**38**	**60**	Of Concern	28,998	8,956	20,042 (70%)
	12.2.7	*Melaleuca quinquenervia* or *M. viridiflora* or *M. dealbata* open-forest to woodland. Other species include *Eucalyptus tereticornis, Corymbia intermedia, E. bancroftii, E. latisinensis, E. robusta, Lophostemon suaveolens* and *Livistona decora*. A shrub layer may occur with frequent species including *Melastoma malabathricum subsp. malabathricum* or *Banksia robur*. The ground layer is sparse to dense and comprised of species including the ferns *Pteridium esculentum* and *Blechnum*	**7,230**	**2,260**	**2,240**	**69**	**745**	Least Concern			

		Regional ecosystem									
Vegetation communities (Number of regional ecosystems within each)	Classification	Description	Ver 11 [2017] Pre-clearing extent (ha)	Ver 9 [2015] extent (ha)	Ver 11 [2017] extent (ha)	Ver 11 [2017] to Pre-clearing Loss (%)	Non-remnant vegetation attributed with Pre-clearing classification extent (ha)	Conservation status (VMA 1999)	Combined Pre-clearing extent (ha)	Combined current extent (ha)	Combined extent loss (ha) (%)
		indicum the sedges *Schoenus brevifolius*, *Baloskion tetraphyllum, Baumea rubiginosa* and *Gahnia sieberiana* and the grass *Imperata cylindrica*. Occurs on Quaternary coastal dunes and seasonally waterlogged sandplains usually fringing drainage system behind beach ridge plains or on old dunes, swales and sandy coastal creek levees.									
	12.2.7a	Palustrine wetland (e.g. vegetated swamp). *Melaleuca quinquenervia* low woodland with *Gahnia sieberiana* shrub layer. Occurs on Quaternary coastal sand dunes fringing swamps.	**74**	**30**	**30**	**60**	**11**	Least Concern			
	12.2.7c	Palustrine wetland (e.g. vegetated swamp). *Melaleuca quinquenervia, Eucalyptus robusta, Melicope elleryana* open forest with understorey of *Todea barbara*. Occurs along watercourses on Quaternary coastal dunes and beaches and seasonally waterlogged sandplains.	**174**	**154**	**154**	**11**	**6**	Least Concern			
	12.3.4	Open-forest to woodland of *Melaleuca quinquenervia* and Eucalyptus robusta. Occurs fringing drainage lines and floodplains in coastal areas.	**5,728**	**1,337**	**1,327**	**77**	**910**	Of Concern			
	12.3.5	*Melaleuca quinquenervia* open-forest to woodland. Understorey depends upon duration of water logging; sedges and ferns, especially *Blechnum indicum*, in wetter microhabitats and grasses and shrubs in drier microhabitats. Ground layer species include the grasses *Leersia hexandra* and *Imperata cylindrica,* the sedges/rushes, *Baumea rubiginosa, Gahnia sieberiana, Lepironia articulata, Schoenus brevifolius* and *Schoenus scabripes* and the fern *Lygodium microphyllum.* Other tree species that may be present as scattered individuals or clumps include Lophostemon suaveolens, Eucalyptus robusta, E. tereticornis, E. bancroftii, E. latisinensis, Corymbia intermedia, Melaleuca salicina, Livistona australis, Casuarina glauca, Endiandra sieberi. Melastoma malabathricum subsp. malabathricum, Glochidion sumatranum and Melicope elleryana are often in understorey. Occurs on Quaternary alluvial plains in coastal areas.	**9,797**	**2,929**	**2,921**	**70**	**1,160**	Least Concern			
	12.3.6	*Melaleuca quinquenervia, Eucalyptus tereticornis, Lophostemon suaveolens +/- Corymbia intermedia* open-forest to woodland with a grassy ground layer dominated by species such as *Imperata cylindrica*. Occurs on Quaternary floodplains and fringing drainage lines in coastal areas.	**2,827**	**814**	**811**	**71**	**379**	Least Concern			
	12.3.7	Narrow fringing community of *Eucalyptus tereticornis, Melaleuca viminalis, Casuarina cunninghamiana +/- Waterhousea floribunda*. Other species associated with this RE include *Melaleuca bracteata, M. trichostachya, M. linariifolia* and *M. fluviatilis* in north of bioregion. *Lomandra hystrix* often present in stream beds. Occurs on fringing levees and banks of rivers and drainage lines of alluvial plains throughout the region.	**1,025**	**460**	**462**	**55**	**192**	Least Concern			
	12.3.7b	Riverine wetland or fringing riverine wetland. Naturally occurring waterholes and lagoons, both permanent and intermittent. Includes exposed stream bed and bars. Occurs in the bed of active (may be intermittent) river channels.	**80**	**80**	**80**	**0**	**0.1**	Least Concern			
	12.3.20	*Melaleuca quinquenervia*, *Casuarina glauca +/- Eucalyptus tereticornis*, *E. siderophloia* open forest on low coastal alluvial plains	**1,382**	**N/A**	**505**	**63**	**150**	Endnagered			
Eucalypt (36)	12.2.6	*Eucalyptus racemosa subsp. racemosa, Corymbia intermedia, C. gummifera, Angophora leiocarpa* and *E. pilularis* shrubby or grassy woodland to open-forest. Occurs on Quaternary coastal dunes and beaches. Dunes with deeply leached soils.	**41**	**6**	**6**	**85**	**7**	Least Concern	146,001	61,511	84,499 (58%)

		Regional ecosystem									
Vegetation communities (Number of regional ecosystems within each)	Classification	Description	Ver 11 [2017] Pre-clearing extent (ha)	Ver 9 [2015] extent (ha)	Ver 11 [2017] extent (ha)	Ver 11 [2017] to Pre-clearing Loss (%)	Non-remnant vegetation attributed with Pre-clearing classification extent (ha)	Conservation status (VMA 1999)	Combined Pre-clearing extent (ha)	Combined current extent (ha)	Combined extent loss (ha) (%)
	12.2.8	*Eucalyptus pilularis, E. microcorys, E. resinifera* and *Syncarpia hillii* open-forest. Occurs on parabolic high dunes.	**60**	**8**	**8**	**86**	**6**	Least Concern			
	12.3.2	*Eucalyptus grandis* +/- *E. microcorys, Lophostemon confertus* tall open-forest with vine forest understorey ('wet sclerophyll'). Patches of *Eucalyptus pilularis* sometimes present especially in vicinity of sedimentary rocks (e.g. around Palmwoods). Fringing streams and in narrow gullies in high rainfall areas.	**9,301**	**3,041**	**3,026**	**67**	**1,745**	Of Concern			
	12.3.11	Open-forest to woodland of *Eucalyptus tereticornis, E. siderophloia* and *Corymbia intermedia. Corymbia tessellaris, Lophostemon suaveolens* and *Melaleuca quinquenervia* frequently occur and often form a low tree layer. Other species present in scattered patches or low densities include *Angophora leiocarpa, E. exserta, E. grandis, C. trachyphloia, C. citriodora, E. latisinensis, E. tindaliae, E. racemosa, Melaleuca sieberi* and *M. viridiflora. E. seeana* may be present south of Landsborough. Occurs on Quaternary alluvial plains and drainage lines along coastal lowlands. Rainfall usually exceeds 1000mm/y.	**11,273**	**584**	**578**	**95**	**1,115**	Of Concern			
	12.3.11a	Open-forest of *Eucalyptus tereticornis and/or E. siderophloia* with vine forest understorey. Other canopy species include *Corymbia intermedia, Araucaria cunninghamii* and *Agathis robusta*. Frequently occurring understorey species include *Flindersia spp., Lophostemon suaveolens, L. confertus, Cupaniopsis parvifolia, Acronychia spp., Alphitonia excelsa* and *Acacia disparrima subsp. disparrima*. Occurs on sub-coastal Quaternary alluvial plains. Rainfall usually exceeds 1000mm/y.	**9**	**4**	**4**	**57**	**4**	Of Concern			
	12.3.14a	*Eucalyptus racemosa* woodland to open-forest. Other canopy species may include *Corymbia intermedia, C. gummifera, Eucalyptus latisinensis, E. tindaliae* and *Melaleuca quinquenervia*. Occurs on Quaternary alluvial plains in near coastal areas.	**876**	**196**	**194**	**78**	**62**	Of Concern			
	12.5.2a	*Corymbia intermedia, Eucalyptus tereticornis* woodland. Other species can include *Lophostemon suaveolens, Angophora leiocarpa, Eucalyptus acmenoides* or *E. portuensis, E. siderophloia* or *E. crebra, Corymbia tessellaris* and *Melaleuca quinquenervia* (lower slopes). *Eucalyptus exserta* is usually present in northern parts of bioregion. Occurs on complex of remnant Tertiary surfaces +/- Cainozoic and Mesozoic sediments usually in coastal areas with deep red soils.	**471**	**19**	**18**	**96**	**131**	Endangered			
	12.5.3	*Eucalyptus tindaliae* and/or *E. racemosa subsp. racemosa* open-forest with *Corymbia intermedia, E. siderophloia* +/- *E. resinifera, E. pilularis, E. microcorys, Angophora leiocarpa. Melaleuca quinquenervia* is often a prominent feature of lower slopes. Minor patches (<1ha) dominated by *Corymbia citriodora* can sometimes occur. Occurs on complex of remnant Tertiary surfaces +/- Cainozoic and Mesozoic sediments.	**12,126**	**1,397**	**1,390**	**89**	**985**	Endangered			
	12.5.4	Eucalyptus spp.-*Corymbia spp.-Melaleuca spp*. shrubby or grassy open-forest to woodland. Characteristic species include *Angophora leiocarpa, Eucalyptus latisinensis, E. siderophloia, E. exserta, Corymbia intermedia, C. trachyphloia, Lophostemon suaveolens, Melaleuca viridiflora, M. quinquenervia, M. nodosa* and *Grevillea banksii*. Patches of *Allocasuarina luehmannii* or *Banksia oblongifolia* present locally and *Xanthorrhoea johnsonii* common in ground layer. Occurs on complex of remnant Tertiary surfaces and Tertiary sedimentary rocks.	**40**	**27**	**27**	**33**	**9**	Least Concern			
	12.5.6c	*Eucalyptus pilularis* open forest +/- *E. siderophloia, E. propinqua, Corymbia intermedia, E. microcorys, E. acmenoides, E. tereticornis, E. biturbinata, Lophostemon confertus* with *E.*	**620**	**290**	**289**	**53**	**116**	Endangered			

		Regional ecosystem									
Vegetation communities (Number of regional ecosystems within each)	Classification	Description	Ver 11 [2017] Pre-clearing extent (ha)	Ver 9 [2015] extent (ha)	Ver 11 [2017] extent (ha)	Ver 11 [2017] to Pre-clearing Loss (%)	Non-remnant vegetation attributed with Pre-clearing classification extent (ha)	Conservation status (VMA 1999)	Combined Pre-clearing extent (ha)	Combined current extent (ha)	Combined extent loss (ha) (%)
		saligna, E. montivaga at higher altitudes. Occurs on remnant Tertiary surfaces. Usually deep red soils.									
	12.8.8	*Eucalyptus saligna* or *E. grandis* tall open-forest often with vine forest understorey ('wet sclerophyll'). Other species include *Eucalyptus microcorys, E. acmenoides, Lophostemon confertus, Syncarpia glomulifera subsp. glomulifera*. Occurs on Cainozoic igneous rocks and areas subject to local enrichment from Cainozoic igneous rocks.	**3,457**	**579**	**578**	**83**	**1,111**	Of Concern			
	12.8.8a	*Eucalyptus siderophloia, E. microcorys, E. propinqua, Corymbia intermedia +/- Eucalyptus carnea* open forest on Cainozoic igneous rocks. Occurs on Cainozoic igneous rocks and areas subject to local enrichment from Cainozoic igneous rocks.	**67**	**22**	**22**	**68**	**26**	Of Concern			
	12.8.14	*Eucalyptus eugenioides, E. tereticornis, E. melliodora, E. biturbinata, Allocasuarina torulosa +/- E. moluccana* grassy open-forest. Localised occurrences of *Eucalyptus laevopinea* and *E. banksii* may occur. Occurs on Cainozoic igneous rocks, especially basalt.	**747**	**127**	**127**	**83**	**238**	Least Concern			
	12.8.20	Low shrubby woodland to open-woodland complex. Canopy trees include *Eucalyptus racemosa subsp. racemosa, E. dura, Corymbia trachyphloia, E. carnea, Allocasuarina littoralis, Acacia spp.* and *Lophostemon confertus*. Occurs on Cainozoic igneous rocks, especially rhyolite.	**722**	**667**	**667**	**8**	**26**	Of Concern			
	12.9-10.1	Shrubby open-forest. Canopy species include *Eucalyptus resinifera, E. grandis, E. robusta, Corymbia intermedia +/- E. microcorys, Melaleuca quinquenervia, Syncarpia glomulifera subsp. glomulifera* and *Lophostemon confertus.* Occurs on Cainozoic and Mesozoic sediments.	**2,569**	**631**	**627**	**76**	**455**	Of Concern			
	12.9-10.4	Open-forest to woodland with *Eucalyptus racemosa subsp. racemosa* locally prominent. Other species can include *Angophora leiocarpa, Eucalyptus seeana, E. siderophloia, Corymbia intermedia, E. tindaliae* with *Lophostemon suaveolens, Melaleuca quinquenervia, E. tereticornis* on lower slopes. Occurs on Cainozoic and Mesozoic sediments +/- remnant Tertiary surfaces.	**7,881**	**1,620**	**1,611**	**80**	**762**	Least Concern			
	12.9-10.7a	*Eucalyptus tereticornis, E. siderophloia* and/or *E. crebra, Corymbia intermedia* and *Lophostemon suaveolens* woodland. Occurs on Cainozoic and Mesozoic sediments in near coastal areas.	**1,636**	**230**	**228**	**86**	**398**	Of Concern			
	12.9-10.14	*Eucalyptus pilularis* tall open-forest with shrubby understorey. Other species include *Syncarpia glomulifera subsp. glomulifera, S. verecunda, Corymbia intermedia, Angophora woodsiana* and *Eucalyptus microcorys* in coastal areas and species of RE 12.9-10.5 in drier sub coastal areas. *Eucalyptus pilularis* sometimes extends onto colluvial lower slopes. Occurs on Cainozoic and Mesozoic sediments especially sandstone.	**17,235**	**7,279**	**7,179**	**58**	**3,269**	Least Concern			
	12.9-10.14a	Open-forest of *Eucalyptus grandis, Lophostemon confertus, E. microcorys, Syncarpia glomulifera subsp. glomulifera +/- E. pilularis*. Occurs on Cainozoic and Mesozoic sediments especially sandstone in wet gullies and southern slopes.	**3,819**	**1,421**	**1,414**	**63**	**711**	Least Concern			
	12.9-10.17a	*Lophostemon confertus* dominated open-forest. Occurs in gullies and southern slopes on Cainozoic and Mesozoic sediments.	**203**	**116**	**116**	**43**	**46**	Least Concern			
	12.9-10.17d	Open-forest with *Eucalyptus siderophloia, E. propinqua, Corymbia intermedia +/- E. microcorys, E. acmenoides or E. portuensis, Lophostemon confertus, Eucalyptus tereticornis, E.*	**3,418**	**1,947**	**1,932**	**43**	**750**	Least Concern			

Vegetation communities (Number of regional ecosystems within each)	Regional ecosystem										
	Classification	Description	Ver 11 [2017] Pre-clearing extent (ha)	Ver 9 [2015] extent (ha)	Ver 11 [2017] extent (ha)	Ver 11 [2017] to Pre-clearing Loss (%)	Non-remnant vegetation attributed with Pre-clearing classification extent (ha)	Conservation status (VMA 1999)	Combined Pre-clearing extent (ha)	Combined current extent (ha)	Combined extent loss (ha) (%)
		moluccana, *Angophora subvelutina* and occasional vine forest species. Other species that may be present locally include *Corymbia trachyphloia, E. major, E. fibrosa subsp. fibrosa* and *Angophora leiocarpa* Hills and ranges on Cainozoic and Mesozoic sediments.									
	12.11.2	*Eucalyptus saligna* or *E. grandis, E. microcorys, E. acmenoides, Lophostemon* confertus tall open forest on metamorphics +/- interbedded volcanics.	**4,748**	**3,543**	**3,530**	**26**	**417**	Least Concern			
	12.11.3	Open-forest generally with *Eucalyptus siderophloia* and *E. propinqua* +/- *E. microcorys, Lophostemon confertus, Corymbia intermedia, E. biturbinata, E. acmenoides, E. tereticornis, E. moluccana, Angophora leiocarpa, Syncarpia verecunda* with vine forest species and *E. grandis* or *E. saligna* in gullies. *Eucalyptus pilularis* and *E. tindaliae* sometimes present e.g. mid D'Aguilar Range, Conondale Range. Occurs predominantly on hills and ranges of Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics.	**13,333**	**9,336**	**9,332**	**30**	**1,388**	Least Concern			
	12.11.3a	Open-forest of Lophostemon confertus +/- *Eucalyptus microcorys, E. propinqua, E. carnea, E. major, E. siderophloia*. Occurs in gullies and exposed ridges of Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics.	**137**	**114**	**114**	**17**	**4**	Least Concern			
	12.11.3b	Open-forest of *Eucalyptus pilularis*. Frequent species are *E. microcorys, E. siderophloia, E. eugenioides, Corymbia intermedia*. Occasionally present are *Syncarpia verecunda, E. saligna*. Occurs on higher altitude (>300m) subcoastal hills and ranges of Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics.	**127**	**101**	**101**	**21**	**23**	Least Concern			
	12.11.9	Open-forest to woodlands with *Eucalyptus tereticornis*. Other canopy species include *Eucalyptus biturbinata, E. melliodora, Corymbia intermedia, E. longirostrata, E. eugenioides, Allocasuarina torulosa, E. moluccana, E. saligna, E siderophloia* and *Angophora subvelutina.* Occurs on ridges and upper slopes especially at higher altitudes on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. These occurrences are often associated with small areas of intermediate and basic volcanic rocks. Minor occurrences on low coastal ridges and upper slopes.	**1,150**	**1,101**	**1,101**	**4**	37	Of Concern			
	12.11.9x1	*Eucalyptus montivaga* open forest. Other canopy species can include *Corymbia trachyphloia*, *E. acmenoides*, *Syncarpia glomulifera* subsp. *glomulifera and C. intermedia.* Occurs on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Altitude >500m. (BVG1M: 8b)	**20**	**20**	**20**	**0**	**0**	Of Concern			
	12.11.14	*Eucalyptus crebra, E. tereticornis* grassy woodland. Other species including *Eucalyptus melanophloia, Corymbia clarksoniana, C. erythrophloia, C. tessellaris, Angophora spp.* may be present in low densities or in patches. Mid-layer generally sparse but can include low trees such as *Acacia bidwillii, Capparis spp., Dodonaea triquetra, Alphitonia excelsa* and *Xanthorrhoea spp*. Occurs on mid and lower slopes on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics.	**3,642**	**394**	**384**	**89**	543	Of Concern			
	12.11.27	Woodland to open forest of *Eucalyptus racemosa subsp. racemosa* and/or *E. seeana.* Other characteristic species include *Lophostemon suaveolens, Corymbia intermedia, E.*	**32**	**32**	**32**	**0**	**0**	Endangered			

		Regional ecosystem									
Vegetation communities (Number of regional ecosystems within each)	Classification	Description	Ver 11 [2017] Pre-clearing extent (ha)	Ver 9 [2015] extent (ha)	Ver 11 [2017] extent (ha)	Ver 11 [2017] to Pre-clearing Loss (%)	Non-remnant vegetation attributed with Pre-clearing classification extent (ha)	Conservation status (VMA 1999)	Combined Pre-clearing extent (ha)	Combined current extent (ha)	Combined extent loss (ha) (%)
		siderophloia, C. citriodora, E. pilularis on low-altitude coastal metamorphics around Brisbane. *Melaleuca quinquenervia* may be present and at times becomes locally co-dominant. Occurs on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics.									
	12.12.2	*Eucalyptus pilularis* tall open-forest with shrubby understorey. Other canopy species include *Syncarpia verecunda, Angophora woodsiana, Eucalyptus microcorys, E. resinifera, E. tindaliae, E. propinqua and E. saligna*. Occurs on Mesozoic to Proterozoic igneous rocks.	**12,284**	**9,325**	**9,322**	**24**	1,185	Least Concern			
	12.12.12	*Eucalyptus tereticornis, E. crebra* (sometimes *E. siderophloia*) open-forest to woodland. Other species present can include *Eucalyptus melanophloia, Corymbia tessellaris, Angophora subvelutina, A. leiocarpa, C. clarksoniana* (central and northern parts) and *E. siderophloia, C. intermedia* with *Melaleuca quinquenervia, Lophostemon suaveolens* near drainage lines in moister areas. Occurs on Mesozoic to Proterozoic igneous rocks, especially granite lowlands and basins.	**9,771**	**1,053**	**1,032**	**89**	1,910	Of Concern			
	12.12.14	Shrubby woodland. Canopy species include *Eucalyptus racemosa subsp. racemosa, Corymbia trachyphloia, E. carnea, E. tindaliae, E. exserta, Angophora woodsiana, E. resinifera* and *E. microcorys*. Occurs on Mesozoic to Proterozoic igneous rocks.	**1,536**	**1,157**	**1,151**	**25**	161	Of Concern			
	12.12.15	Open-forest with *Eucalyptus propinqua, Corymbia intermedia, E siderophloia +/- E. microcorys, E. acmenoides, Lophostemon confertus, E. moluccana, Angophora subvelutina* and occasional vine forest species. Patches of *Eucalyptus pilularis* sometimes present. Occurs on Mesozoic to Proterozoic igneous rocks.	**16,072**	**11,617**	**11,620**	**28**	1,931	Least Concern			
	12.12.15a	*E. grandis* tall open-forest +/- vine forest understorey. Other canopy species *include E. microcorys, E. acmenoides, Lophostemon confertus, E. siderophloia, E. propinqua, Corymbia intermedia* Occurs in wet gullies on Mesozoic to Proterozoic igneous rocks.	**5,692**	**2,958**	**2,950**	**48**	1,015	Least Concern			
	12.12.15b	*Lophostemon confertus* open-forest +/- *Eucalyptus microcorys, E. siderophloia, E. carnea* and *E. propinqua*. Vine forest species are often present in understorey. Occurs in gullies and exposed ridges on Mesozoic to Proterozoic igneous rocks often amongst vine forest.	**531**	**501**	**501**	**6**	17	Least Concern			
	12.12.23	Open-forest to woodland generally with *Eucalyptus tereticornis +/- E. eugenioides*. Other species present, vary from place to place but commonly include *Corymbia intermedia, Eucalyptus acmenoides +/- E. biturbinata, E. longirostrata, E. melliodora, Corymbia trachyphloia, Lophostemon confertus* (tree form and whipstick form), *Angophora subvelutina, E. crebra* and *Allocasuarina torulosa*. Occurs at higher altitudes on granite hills and ranges.	**363**	**284**	**282**	**22**	41	Least Concern			
Rainforest (10)	12.3.1a	Complex to simple notophyll vine forest. *Waterhousea floribunda* is predominant fringing stream channels. Other species can include *Cryptocarya hypospodia*, *C. obovata, C. triplinervis, Argyrodendron trifoliolatum, Ficus coronata, F. fraseri, F. macrophylla forma macrophylla, Aphananthe philippinensis, Elaeocarpus grandis, Grevillea robusta, Castanospermum australe* and *Syzygium francisii. Ficus racemosa* and *Nauclea orientalis* in north of bioregion. Eucalyptus spp. emergents (e.g. *E. grandis*) and *Araucaria cunninghamii*; less commonly *Agathis robusta* may also be present. Occurs on Quaternary alluvial plains and channels.	**4,554**	**1,752**	**1,750**	**62**	905.8	Endangered	39,237	16,759	22,478 (57%)

		Regional ecosystem									
Vegetation communities (Number of regional ecosystems within each)	Classification	Description	Ver 11 [2017] Pre-clearing extent (ha)	Ver 9 [2015] extent (ha)	Ver 11 [2017] extent (ha)	Ver 11 [2017] to Pre-clearing Loss (%)	Non-remnant vegetation attributed with Pre-clearing classification extent (ha)	Conservation status (VMA 1999)	Combined Pre-clearing extent (ha)	Combined current extent (ha)	Combined extent loss (ha) (%)
	12.5.13a	Microphyll to notophyll vine forest +/- *Araucaria cunninghamii*. Characteristic species include *Araucaria cunninghamii, Cupaniopsis parvifolia, Dendrocnide photinophylla, Rhodosphaera rhodanthema, Flindersia australis, F. schottiana, F. xanthoxyla, Drypetes deplanchei, Olea paniculata, Diospyros geminata, Gossia bidwillii, Excoecaria dallachyana* and *Vitex lignum-vitae. Argyrodendron trifoliolatum* sometimes present especially in subregion 6. Occurs on remnant Tertiary surfaces especially lateritised basalt.	**1**	**0.84**	**0.9**	**36**	0.1	Endangered			
	12.8.3	Complex notophyll vine forest. Characteristic species include *Argyrodendron trifoliolatum, Argyrodendron sp.* (Kin Kin W.D.Francis AQ81198), *Olea paniculata, Castanospermum australe, Cryptocarya obovata, Ficus macrophylla forma macrophylla, Syzygium francisii, Diploglottis australis, Pseudoweinmannia lachnocarpa, Podocarpus elatus, Beilschmiedia obtusifolia, Neolitsea dealbata* and *Archontophoenix cunninghamiana*. Occurs on Cainozoic igneous rocks, especially basalt <600m altitude.	**12,758**	**1,563**	**1,561**	**88**	3645.3	Least Concern			
	12.8.9	*Lophostemon confertus* open-forest often with vine forest understorey ('wet sclerophyll') Occurs on Cainozoic igneous rocks. Tends to occur mostly in gullies and on exposed ridges on basalt.	**4**	**4**	**4**	**0**		Least Concern			
	12.8.13	Microphyll and microphyll/notophyll vine forest +/- *Araucaria cunninghamii.* Characteristic species include *Araucaria cunninghamii, A. bidwillii, Cupaniopsis parvifolia, Dendrocnide photinophylla, Rhodosphaera rhodanthema, Flindersia australis, F. schottiana, F. xanthoxyla, Drypetes deplanchei, Olea paniculata, Diospyros geminata, Gossia bidwillii, Excoecaria dallachyana, Pleiogynium timorense* (north of bioregion) and *Vitex lignum-vitae. Argyrodendron trifoliolatum* sometimes present especially in subregion 6. Occurs on Cainozoic igneous rocks, especially basalt.	**25**	**1**	**1**	**96**	7.3	Of Concern			
	12.9-10.16	Microphyll to notophyll vine forest +/- *Araucaria cunninghamii*. Characteristic species include *Argyrodendron sp.*(Kin Kin W.D.Francis AQ81198), *Araucaria cunninghamii, Agathis robusta, Backhousia myrtifolia, Cupaniopsis parvifolia, Dendrocnide photinophylla, Rhodosphaera rhodanthema, Flindersia australis, F. xanthoxyla, Drypetes deplanchei, Olea paniculata, Diospyros geminata, Gossia bidwillii, Excoecaria dallachyana* and *Vitex lignum-vitae.* Occurs on Cainozoic and Mesozoic sediments.	**1,733**	**1,177**	**1,176**	**32**	302.7	Of Concern			
	12.11.1	Simple notophyll vine forest often with abundant *Archontophoenix cunninghamiana* (gully vine forest) on metamorphics +/- interbedded volcanics	**4,480**	**4,088**	**4,088**	**9**	189.9	Least Concern			
	12.11.10	Notophyll and notophyll/microphyll vine forest +/- *Araucaria cunninghamii.* Characteristic species include *Argyrodendron trifoliolatum, Argyrodendron sp.* (Kin Kin W.D.Francis AQ81198), *Choricarpia subargentea, Dissiliaria baloghioides, Brachychiton discolor, Beilschmiedia obtusifolia, Diospyros pentamera, Grevillea robusta, Gmelina leichhardtii* and *Ficus macrophylla forma macrophylla.* Occurs on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics.	**6,425**	**2,579**	**2,576**	**60**	778.1	Least Concern			
	12.12.1	Notophyll and notophyll/microphyll vine forest, sometimes with *Archontophoenix cunninghamiana* and/or *Lophostemon confertus* closed forest. The plant families Lauraceae, Myrtaceae and Elaeocarpaceae are diagnostic of the type and Pouteria queenslandica is common in the northern half of the bioregion. *Araucaria cunninghamii* is often present on margins.	**5,386**	**4,057**	**4,055**	**25**	676.5	Of Concern			

		Regional ecosystem									
Vegetation communities (Number of regional ecosystems within each)	Classification	Description	Ver 11 [2017] Pre-clearing extent (ha)	Ver 9 [2015] extent (ha)	Ver 11 [2017] extent (ha)	Ver 11 [2017] to Pre-clearing Loss (%)	Non-remnant vegetation attributed with Pre-clearing classification extent (ha)	Conservation status (VMA 1999)	Combined Pre-clearing extent (ha)	Combined current extent (ha)	Combined extent loss (ha) (%)
		Occurs in gullies on Mesozoic to Proterozoic igneous rocks especially granite and rhyolite.									
	12.12.16	Notophyll vine forest. Characteristic species include *Araucaria bidwillii, A. cunninghamii, Argyrodendron trifoliolatum, Argyrodendron sp.* (Kin Kin W.D.Francis AQ81198), *Choricarpia subargentea, Brachychiton discolor, Beilschmiedia obtusifolia, Diospyros pentamera, Grevillea robusta, Gmelina leichhardtii, Ficus macrophylla forma macrophylla and Sloanea woollsii. Eucalyptus spp.* especially *E. siderophloia, E. propinqua* and *E. grandis* may be present as emergents. Occurs on Mesozoic to Proterozoic igneous rocks.	**3,869**	**1,547**	**1,547**	**60**	837.0	Least Concern			

Appendix B: Sunshine Coast rare and threatened flora and fauna species

The below acronyms/information are incorporate into the following three tables of EVNT data;
Table B1: Sunshine Coast rare and threatened flora and fauna species

- CE (critically endangered), E (endangered), V (vulnerable), NT (near threatened), LC (least concern), EX (extinct), PE (extinct), C (confirmed), U (unconfirmed), O (Other), RSC (resident of the Sunshine coast), RM (regular migrant), OM (occasional migrant), RV (rare vagrant)
- Confirmed - Officially vetted sighting by the Queensland Herbarium or Queensland Museum
- Unconfirmed - unvalidated records in the Wildnet database
- Other - Record validated by local experts but not officially validated by the State departments
- Confirmed - Officially vetted sighting by the Queensland Herbarium or Queensland Museum
- Regular migrant - sunshine coast council area provides necessary seasonal habitat for these species life cycle requirements
- Occasional migrant - these species occasionally utilise habitat areas in the sunshine coast council area.
- Rare vagrant -sunshine coast council area provides no real known habitat attributes for these species and it is considered unlikely that any conservation actions will directly benefit the conservation or recovery of the species.

Table B1 Summary Sunshine Coast listed threatened plants and animals, their respective commonwealth and state listing and comparison to Queensland's listed plant and animal numbers

Sunshine Coast Threatened Fauna & Flora										Queensland listed species NCA		
Group	**Queensland species NCA**		**Commonwealth species EPBC**			**SCC Total combined/reconciled NCA EPBC**						
	E	V	CE	E	V	CE	E	V	Total	E	V	Total
Amphibians	2	5	-	2	1	-	2	5	**7**	13	19	32
Birds	11	17	5	6	7	5	9	15	**29**	29	35	64
Invertebrates	1	1	-	-	-	-	1	1	**2**	6	7	13
Fish	-	2	-	2	2	-	2	2	**4**	4	5	9
Mammals	-	11	-	3	7	-	3	10	**13**	17	29	46
Reptiles	3	4	1	2	4	1	2	5	**8**	13	39	52
Crustacean	1	-	-	-	-	-	1	-	**1**	-	-	-
Total animals	20	41	6	15	21	**6**	**20**	**38**	**64**	**82**	**134**	**216**
Plants	21	31	-	12	16	**-**	**21**	**32**	**53**	**227**	**484**	**711**

Table B1.1: Sunshine Coast council area catchment records of endangered and vulnerable native flora and fauna species

							Sightings in major catchments							
Kingdom	**Class**	**Common Name**	**Scientific Name**	**NCA status**	**EPBC status**	**Shire sighting status**	**Maroochy River**	**Mooloolah River**	**Noosa River**	**Pumicestone Passage**	**Mary River**	**Upper Stanley River**	**Occurrence**	**Comments**
animals	amphibians	tusked frog	*Adelotus brevis*	V		C	✓	✓	×	✓	✓	✓	RSC	
animals	amphibians	wallum froglet	*Crinia tinnula*	V		C	✓	✓	✓	✓	✓	×	RSC	
animals	amphibians	Cooloola sedgefrog	*Litoria cooloolensis*	NT		U	undisclosed location						RSC	
animals	amphibians	wallum rocketfrog	*Litoria freycineti*	V		C	✓	✓	×	✓	✓	×	RSC	
animals	amphibians	wallum sedgefrog	*Litoria olongburensis*	V	V	C	✓	✓	×	✓	×	×	RSC	
animals	amphibians	cascade treefrog	*Litoria pearsoniana*	V		C	✓	×	×	×	✓	✓	RSC	
animals	amphibians	Fleay's barred frog	*Mixophyes fleayi*	E	E	C	×	×	×	×	✓	×	RSC	
animals	amphibians	giant barred frog	*Mixophyes iteratus*	E	E	C	✓	✓	×	✓	✓	✓	RSC	
animals	amphibians	southern gastric brooding frog	*Rheobatrachus silus*	PE	EX	C	×	×	×	×	✓	×		NCA status change - previously E
animals	amphibians	southern dayfrog	*Taudactylus diurnus*	PE	EX	C	×	×	×	×	✓	×		NCA status change - previously E
animals	birds	regent honeyeater	*Anthochaera phrygia*	E	CE	U	undisclosed location						OM	EPBC status change - previously E. NB: recently recorded in MBRC area

							Sightings in major catchments							
Kingdom	**Class**	**Common Name**	**Scientific Name**	**NCA status**	**EPBC status**	**Shire sighting status**	**Maroochy River**	**Mooloolah River**	**Noosa River**	**Pumicestone Passage**	**Mary River**	**Upper Stanley River**	**Occurrence**	**Comments**
animals	birds	wedge-tailed shearwater	*Ardenna pacifica*	V		C	✓	✓	✓	✓	×	×	RM	Added May 2017 previously Special LC
animals	birds	red knot	*Calidris canutus*	E	E	C	×	×	×	✓	×	×	RM	Added May 2017 previously Special LC
animals	birds	curlew sandpiper	*Calidris ferruginea*	E	CE	C	✓	✓	×	✓	×	×	RM	Added May 2017 previously Special LC
animals	birds	great knot	*Calidris tenuirostris*	E	CE	C	×	×	×	✓	×	×	RM	Added May 2017 previously Special LC
animals	birds	glossy black-cockatoo (eastern)	*Calyptorhynchus lathami lathami*	V		C	✓	✓	✓	✓	✓	✓	RSC	
animals	birds	greater sand plover	*Charadrius leschenaultii*	V	V	C	✓	✓	×	✓	×	×	RM	Added May 2017 previously Special LC
animals	birds	lesser sand plover	*Charadrius mongolus*	E	E	C	✓	✓	×	✓	×	×	RM	Added May 2017 previously Special LC
animals	birds	Coxen's fig-parrot	*Cyclopsitta diophthalma coxeni*	E	E	C	✓	✓	×	×	✓	×		Insufficient knowledge of population & distribution
animals	birds	eastern bristlebird	*Dasyornis brachypterus*	E	E	C	✓	×	×	×	✓	×	RSC	Addition to list since previous, however, possibly locally extinct
animals	birds	wandering albatross	*Diomedea exulans*	V	V	C	✓	×	×	✓	×	×	RV	
animals	birds	red goshawk	*Erythrotriorchis radiatus*	E	V	C	×	×	×	×	✓	×		No recent records in SEQ region
animals	birds	beach stone-curlew	*Esacus magnirostris*	V		C	✓	✓	✓	✓	×	×	RSC	
animals	birds	Grey falcon	*Falco hypoleucos*	V		O	✓	×	✓	×	×	×	RV	NCA status change - previously NT
animals	birds	white-throated needletail	*Hirundapus caudacutus*	V	V	C	✓	✓	×	✓	✓	✓		Addition since the 2016 list
animals	birds	swift parrot	*Lathamus discolor*	E	CE	C	×	×	×	✓	×	×	OM	EPBC status change - previously E. Non-breeding migrant, rare to this area
animals	birds	Western Alaskan bar-tailed godwit	*Limosa lapponica baueri*	V	V	C	✓	✓	×	✓	×	×		Addition since the 2016 list
animals	birds	southern giant-petrel	*Macronectes giganteus*	E	E	C	×	×	×	✓	×	×	RV	
animals	birds	northern giant-petrel	*Macronectes halli*	V	V	C	×	×	×	✓	×	×	RV	
animals	birds	powerful owl	*Ninox strenua*	V		C	✓	✓	×	✓	✓	✓	RSC	
animals	birds	eastern curlew	*Numenius madagascariensis*	V	CE	C	✓	✓	×	✓	×	×	RM	NCA status change - previously NT, EPBC status change - previously not listed
animals	birds	ground parrot	*Pezoporus wallicus wallicus*	V		C	undisclosed location						RSC	
animals	birds	red-tailed tropicbird	*Phaethon rubricauda*	V		C	×	✓	×	✓	×	×	RM	
animals	birds	plumed frogmouth	*Podargus ocellatus plumiferus*	V		C	✓	✓	×	×	✓	✓	RSC	
animals	birds	Australian painted snipe	*Rostratula australis*	V	E	U	×	✓	×	×	×	×	RM	EPBC status change - previously V

							Sightings in major catchments							
Kingdom	**Class**	**Common Name**	**Scientific Name**	**NCA status**	**EPBC status**	**Shire sighting status**	**Maroochy River**	**Mooloolah River**	**Noosa River**	**Pumicestone Passage**	**Mary River**	**Upper Stanley River**	**Occurrence**	**Comments**
animals	birds	little tern	*Sternula albifrons*	E		C	✓	✓	×	✓	✓	×	RM	
animals	birds	southern emu-wren	*Stipiturus malachurus*	V		C	✓	✓	×	×	✓	×	RSC	
animals	birds	black-breasted button-quail	*Turnix melanogaster*	V	V	C	✓	×	×	×	✓	×	RSC	
animals	bony fish	Mary River cod	*Maccullochella mariensis*		E	C	×	×	×	×	✓	×	RSC	
animals	bony fish	Oxleyan pygmy perch	*Nannoperca oxleyana*	V	E	C	×	×	×	✓	×	×	RSC	
animals	bony fish	Australian lungfish	*Neoceratodus forsteri*		V	U	×	×	×	×	✓	×	RSC	
animals	bony fish	honey blue eye	*Pseudomugil mellis*	V	V	C	×	×	×	✓	×	×	RSC	
animals	insects	Australian fritillary	*Argyreus hyperbius inconstans*	E		U	✓	×	×	✓	×	×	RSC	
animals	insects	Richmond birdwing	*Ornithoptera richmondia*	V		C	✓	✓	×	✓	✓	✓	RSC	
animals	mammals	northern quoll	*Dasyurus hallucatus*		E	C	×	×	×	×	✓	×	RSC	Hasn't been recorded locally for some time
animals	mammals	spotted-tailed quoll (southern subspecies)	*Dasyurus maculatus maculatus*	V	E	U	undisclosed location						RSC	Hasn't been recorded locally for some time
animals	mammals	dugong	*Dugong dugon*	V		C	✓	✓	×	✓	×	×	RM	
animals	mammals	humpback whale	*Megaptera novaeangliae*	V	V	C	✓	✓	×	✓	×	×	RM	
animals	mammals	eastern long-eared bat	*Nyctophilus corbeni*	V	V	U	undisclosed location							
animals	mammals	Southern greater glider	*Petauroides volans volans*	V	V	C	✓	✓	✓	✓	✓	×	RSC	Added in May 2017 previously LC
animals	mammals	koala	*Phascolarctos cinereus*	V	V	C	✓	✓	✓	✓	✓	✓	RSC	
animals	mammals	long-nosed potoroo	*Potorous tridactylus tridactylus*	V	V	C	✓	×	×	✓	✓	✓	RSC	
animals	mammals	Hastings River mouse	*Pseudomys oralis*	V	E	C	×	×	×	×	✓	×	RSC	
animals	mammals	grey-headed flying-fox	*Pteropus poliocephalus*		V	C	✓	✓	✓	✓	✓	✓	RSC	
animals	mammals	Indo-Pacific humpback dolphin	*Sousa chinensis*	V		U	undisclosed location						RM	NCA status change - previously NT
animals	mammals	Australian humpback dolphin	*Sousa sahulensis*	V		C	undisclosed location						RM	Addition to list since previous list
animals	mammals	water mouse	*Xeromys myoides*	V	V	C	✓	×	×	✓	×	×	RSC	
animals	reptiles	common death adder	*Acanthophis antarcticus*	V		C	✓	✓	×	✓	✓	×	RSC	NCA status change - previously NT
animals	reptiles	striped blind snake	*Anilios silvia*	NT		C	✓	✓	×	×	×	×	RSC	Addition to list since previous list
animals	reptiles	loggerhead turtle	*Caretta caretta*	E	E	C	✓	✓	×	×	×	×	RM	
animals	reptiles	green turtle	*Chelonia mydas*	V	V	C	✓	✓	×	✓	×	×	RM	
animals	reptiles	three-toed snake-tooth skink	*Coeranoscincus reticulatus*		V	C	×	×	×	×	✓	✓	RSC	NCA status change - previously NT
animals	reptiles	southern snapping turtle	*Elseya albagula*	E	CE		×	×	×	×	✓	×	RSC	Addition to list since previous list
animals	reptiles	Mary River turtle	*Elusor macrurus*	E	E	U	×	×	×	×	✓	×	RSC	
animals	reptiles	hawksbill turtle	*Eretmochelys imbricata*	V	V		×	✓	×	×	×	×	RM	Addition to list since previous list
animals	reptiles	flatback turtle	*Natator depressus*	V	V	U	✓	✓	×	×	×	×	RM	
animals	reptiles	Cooloola blind snake / striped blind snake	*Ramphotyphlops silvia / Anilios silvia*	NT		C	✓	✓	×	×	×	×	RSC	
animals	crustaceans	Swamp crayfish	*Tenuibranchiurus glypticus*	E		C	✓	✓	×	✓	×	×		Addition to list since previous list
plants	ferns	slender tree fern	*Cyathea cunninghamii*	NT		U	undisclosed location							

							Sightings in major catchments							
Kingdom	**Class**	**Common Name**	**Scientific Name**	**NCA status**	**EPBC status**	**Shire sighting status**	**Maroochy River**	**Mooloolah River**	**Noosa River**	**Pumicestone Passage**	**Mary River**	**Upper Stanley River**	**Occurrence**	**Comments**
plants	ferns		*Dryopteris wattsii*	V		O	✓	×	×	×	×	✓		*Revwattsia fragilis* (sp.on 2011 list) has been superseded
plants	ferns		*Thelypteris confluens*	V		U	undisclosed location							
plants	higher dicots	whipstick wattle	*Acacia attenuata*	V	V	C	×	✓	×	✓	×	✓		
plants	higher dicots	tiny wattle	*Acacia baueri subsp. baueri*	V		C	✓	✓	×	✓	×	×		
plants	higher dicots	Mt Emu she-oak	*Allocasuarina emuina*	E	E	C	✓	✓	×	×	×	×		
plants	higher dicots	Mt Beerwah she-oak	*Allocasuarina filidens*	V		C	×	×	×	✓	×	✓		
plants	higher dicots	Mt Coolum she-oak	*Allocasuarina thalassoscopica*	E	E	U	✓	×	×	×	×	×		
plants	higher dicots		*Banksia conferta*	V		C	×	×	×	✓	×	✓		
plants	higher dicots	Mt Coolum bertya	*Bertya sharpeana*	NT		U	✓	×	×	×	×	×		
plants	higher dicots	Wide Bay boronia	*Boronia rivularis*	NT		C	×	✓	×	×	×	×		
plants	higher dicots	Three-leaved Bosistoa	*Bosistoa transversa*		V	C	✓	✓	×	✓	✓	✓		
plants	higher dicots		*Coleus omissus*	E	E	U	×	×	×	×	✓	×		Genus change form Plectranthus
plants	higher dicots		*Coleus torrenticola*	E	E	U	✓	×	×	×	✓	×		Genus change form Plectranthus
plants	higher dicots	southern corynocarpus	*Corynocarpus rupestris subsp. arborescens*	V		C	✓	✓	×	×	✓	×		
plants	higher dicots		*Dodonaea rupicola*	V	V	U	×	×	×	✓	×	×		
plants	higher dicots	durringtonia	*Durringtonia paludosa*	NT		C	✓	×	×	×	×	×		
plants	higher dicots	swamp stringybark	*Eucalyptus conglomerata*	E	E	C	✓	✓	×	✓	×	✓		
plants	higher dicots	Plunkett mallee	*Eucalyptus curtisii*	NT		C	×	×	×	✓	×	×		
plants	higher dicots	Mt Beerwah mallee	*Eucalyptus kabiana*	V	V	C	×	×	×	✓	×	✓		
plants	higher dicots	ball nut	*Floydia praealta*	V	V	C	✓	×	×	×	✓	×		
plants	higher dicots		*Gonocarpus effusus*	V		C	×	×	×	✓	×	✓		
plants	higher dicots	sweet myrtle	*Gossia fragrantissima*	E	E	U	×	✓	×	×	×	×		
plants	higher dicots	angle-stemmed myrtle	*Gossia gonoclada*	E	E	U	undisclosed location							
plants	higher dicots	thready barked myrtle	*Gossia inophloia*	NT		C	✓	✓	×	✓	✓	✓		
plants	higher dicots	reticulated holly	*Graptophyllum reticulatum*	E	E	C	✓	✓	×	×	×	×		
plants	higher dicots	Coochin Hills grevillea	*Grevillea hodgei*	V		C	×	×	×	✓	×	×		
plants	higher dicots	rusty oak	*Helicia ferruginea*	V		C	×	✓	×	×	×	✓		
plants	higher dicots	small-leaved jasmine	*Jasminum jenniae*	E		U	✓	×	×	×	×	×		
plants	higher dicots	Sunshine Coast myrtle	*Lenwebbia sp. (Blackall Range P.R.Sharpe 5387)*	E		C	✓	✓	✓	×	✓	×		
plants	higher dicots	fine-leaved tuckeroo	*Lepiderema pulchella*	V		U	×	×	×	×	✓	✓		
plants	higher dicots	Glass House Mountains tea tree	*Leptospermum luehmannii*	V		C	×	×	×	✓	×	✓		
plants	higher dicots		*Leptospermum oreophilum*	V		C	✓	×	×	✓	×	×		
plants	higher dicots		*Leucopogon recurvisepalus*	E		U	×	×	×	✓	×	×		
plants	higher dicots	native lobelia	*Lobelia membranacea*	NT		O	✓	✓	×	×	×	×		
plants	higher dicots	macadamia nut	*Macadamia integrifolia*	V	V	C	✓	✓	×	×	✓	×		
plants	higher dicots	bopple nut	*Macadamia ternifolia*	V	V	C	✓	✓	×	×	✓	✓		
plants	higher dicots	rough-shelled bush nut	*Macadamia tetraphylla*	V	V	C	×	×	×	×	✓	×		
plants	higher dicots		*Mallotus megadontus*	V		C	✓	×	×	×	×	×		
plants	higher dicots	slender milkvine	*Marsdenia coronata*	V		C	✓	✓	✓	✓	✓	×		

							Sightings in major catchments							
Kingdom	**Class**	**Common Name**	**Scientific Name**	**NCA status**	**EPBC status**	**Shire sighting status**	**Maroochy River**	**Mooloolah River**	**Noosa River**	**Pumicestone Passage**	**Mary River**	**Upper Stanley River**	**Occurrence**	**Comments**
plants	higher dicots	Kingaroy bottlebrush	*Melaleuca formosa*	NT		O	×	×	×	×	✓	×		*Callistemon formosus* (sp.on 2011 list) has been superseded
plants	higher dicots	grove's paperbark	*Melaleuca groveana*	NT		C	×	×	×	✓	×	✓		
plants	higher dicots	corky cucumber	*Nothoalsomitra suberosa*	NT		C	✓	✓	×	×	✓	✓		
plants	higher dicots	large-flowered silkpod	*Parsonsia largiflorens*	E		U	✓	✓	×	×	✓	✓		
plants	higher dicots	slender silkpod	*Parsonsia tenius*	V		C	×	✓	×	×	×	×		
plants	higher dicots	hawkweed	*Picris evae*	V	V	C	×	×	×	×	✓	×		
plants	higher dicots	shiny-leaved condoo	*Planchonella eerwah*	E	E	C	✓	×	×	×	✓	×		
plants	higher dicots	hairy ricinocarpus	*Ricinocarpos speciosus*	V		U	✓	✓	×	×	✓	×		
plants	higher dicots	hairy hazelwood	*Symplocos harroldii*	NT		C	✓	✓	×	×	✓	×		
plants	higher dicots	red lilly pilly	*Syzygium hodgkinsoniae*	V	V	C	✓	✓	×	✓	✓	✓		
plants	higher dicots	Fraser Island creeper	*Tecomanthe hillii*	NT		U	✓	×	×	×	×	×		
plants	higher dicots	glossy spice bush	*Triunia robusta*	E	E	C	✓	×	×	×	✓	×		
plants	higher dicots		*Westringia blakeana*	NT		C	×	×	×	×	✓	×		
plants	higher dicots		*Westringia grandifolia*	E		C	×	×	×	✓	×	✓		
plants	higher dicots	Nambour zieria	*Zieria bifida*	E	E	C	✓	×	×	×	×	×		
plants	higher dicots		*Zieria exsul*	E		U	×	✓	×	×	×	×		
plants	higher dicots		*Zieria furfuracea subsp. gymnocarpa*	E		O	×	×	×	×	✓	×		
plants	lower dicots	stinking cryptocarya	*Cryptocarya foetida*	V	V	C	✓	✓	×	×	×	×		
plants	lower dicots	birdwing butterfly vine	*Pararistolochia praevenosa*	NT		C	✓	✓	×	✓	✓	✓		
plants	monocots	Queensland lace	*Aponogeton elongatus subsp. elongatus*	NT		U	✓	×	×	×	×	×		
plants	monocots		*Aponogeton elongatus subsp. fluitans*	V		U	✓	×	×	×	×	×		
plants	monocots		*Arthraxon hispidus*	V	V	C	✓	✓	×	×	✓	×		
plants	monocots	Christmas bells	*Blandfordia grandiflora*	E		C	✓	✓	×	✓	×	×		
plants	monocots	miniature moss-orchid	*Bulbophyllum globuliforme*	NT	V	U	undisclosed location							
plants	monocots		*Eulophia bicallosa*	NT		U	×	×	×	×	✓	×		
plants	monocots		*Genoplesium cranei*	V		U	undisclosed location							
plants	monocots		*Genoplesium sigmoideum*	NT		U	undisclosed location							
plants	monocots		*Liparis simmondsii*	NT		U	×	✓	×	×	✓	×		
plants	monocots	Beckler's Papillilabium	*Papillilabium beckleri*	NT		U	×	×	×	×	✓	×		
plants	monocots	yellow swamp orchid/ Greater Swamp orchid	*Phaius australis*	E	E	U	✓	✓	×	✓	✓	✓		*Phaius tancarvilleae* (sp.on 2011 list) has been superseded
plants	monocots		*Prasophyllum exilis*	NT		U	✓	✓	×	✓	×	×		
plants	monocots	Wallum leek orchid	*Prasophyllum wallum*	V	V		undisclosed location							Addition to list since previous list
plants	monocots	dark greenhood	*Pterostylis nigricans*	NT		U	✓	×	×	×	×	×		
plants	monocots		*Romnalda strobilacea*	V	V	U	✓	✓	×	×	✓	✓		
plants	monocots	ravine orchid	*Sarcochilus fitzgeraldii*	E	V	U	✓	×	×	×	×	✓		
plants	monocots		*Thismia rodwayi*	NT		U	×	×	×	×	✓	×		

Table B2: EVNT species not considered to occur or seasonally occur in SCC LGA

Kingdom	Class	Common Name	Scientific Name	2016 NCA status	2016 EPBC status	Comments
animals	birds	Major Mitchell's cockatoo	*Lophochroa leadbeateri*	V		Records within SCC LGA are likely to be aviary escapees
animals	birds	Albert's lyrebird	*Menura alberti*	NT		Previous records in SCC LGA are now erroneous
animals	reptiles	collared delma	*Delma torquata*	V	V	
plants	ferns		*Cyathea exilis*	E	E	Distribution is considered to be restricted to Cape York
plants	higher dicots		*Allocasuarina rigida subsp. exsul*	V		
plants	higher dicots	jointed baloghia	*Baloghia marmorata*	V	V	
plants	higher dicots	Dunn's white gum	*Eucalyptus dunnii*	V		
plants	higher dicots	holly-leaved graptophyllum	*Graptophyllum ilicifolium*	V	V	
plants	higher dicots	bulberin nut	*Macadamia jansenii*	E	E	
plants	higher dicots		*Prostanthera sp. (Mt Tinbeerwah P.R.Sharpe 4781)*	V		
plants	higher dicots		*Samadera bidwillii*	V	V	
plants	higher dicots		*Senegalia pennata*	NT		
plants	higher dicots	brush sophora	*Sophora fraseri*	V	V	
plants	higher dicots	southern penda	*Xanthostemon oppositifolius*	V	V	
plants	lower dicots	cudgerie	*Hernandia bivalis*	NT		

Table B3: Previously species no longer listed as EVNT by NCA

						Sightings in major catchments							
Kingdom	Class	Common Name	Scientific Name	2016 NCA status	Shire sighting status	Maroochy River	Mooloolah River	Noosa River	Pumicestone Passage	Mary River	Upper Stanley River	Comments	2012 NCA status
animals	amphibians	pouched frog	*Assa darlingtoni*	LC	C	×	×	×	×	✓	✓	status change	NT
animals	amphibians	green thighed frog	*Litoria brevipalmata*	LC	C	✓	✓	×	✓	✓	✓	status change	NT
animals	amphibians	whirring treefrog	*Litoria revelata*	LC	U	undisclosed location						status change	NT
animals	birds	grey goshawk	*Accipiter novaehollandiae*	LC	C	✓	✓	×	✓	✓	✓	status change	NT
animals	birds	Australian swiftlet	*Aerodramus terraereginae*	LC	U	undisclosed location						status change	NT
animals	birds	red-browed treecreeper	*Climacteris erythrops*	LC	C	✓	×	×	✓	✓	×	status change	NT
animals	birds	black-necked stork	*Ephippiorhynchus asiaticus*	LC	C	✓	✓	✓	✓	✓	×	status change	NT
animals	birds	sooty oystercatcher	*Haematopus fuliginosus*	LC	C	✓	✓	×	✓	×	×	status change	NT
animals	birds	Lewin's rail	*Lewinia pectoralis*	LC	C	✓	✓	×	✓	✓	✓	status change	NT
animals	birds	square-tailed kite	*Lophoictinia isura*	LC	C	✓	✓	×	✓	✓	×	status change	NT
animals	birds	black-chinned honeyeater	*Melithreptus gularis*	LC	C	×	✓	×	×	✓	×	status change	NT
animals	birds	turquoise parrot	*Neophema pulchella*	LC	C	✓	×	✓	×	✓	×	status change	NT
animals	birds	cotton pygmy-goose	*Nettapus coromandelianus*	LC	C	✓	✓	×	×	✓	×	status change	NT
animals	birds	freckled duck	*Stictonetta naevosa*	LC	C	✓	✓	×	×	✓	×	status change	NT
animals	birds	sooty owl	*Tyto tenebricosa tenebricosa*	LC	C	✓	✓	×	✓	✓	✓	status change	NT
animals	mammals	golden-tipped bat	*Kerivoula papuensis*	LC	C	×	×	×	×	✓	×	status change	NT
animals	reptiles	elf skink	*Eroticoscincus graciloides*	LC	C	✓	✓	×	✓	✓	✓	status change	NT
animals	reptiles	Rose's shadeskink	*Saproscincus rosei*	LC	C	✓	×	×	×	✓	✓	status change	NT
plants	ferns	coarse tassel fern	*Phlegmariurus phlegmaria*	LC	O	×	✓	×	✓	×	×	name change from *Huperzia phlegmaria*	NT
plants	higher dicots		*Acomis acoma*	LC	C	×	×	×	×	✓	×	status change	NT
plants	higher dicots	doughwood	*Acronychia octandra*	LC	O	×	×	×	×	✓	×	status change	
plants	higher dicots	giant ironwood	*Backhousia subargentea*	LC	O	✓	×	×	×	✓	×	name change from *Choricarpia subargentea*	NT

plants	higher dicots		*Commersonia salviifolia*	LC	U	undisclosed location						status change	NT
plants	higher dicots	rusty vine	*Marsdenia hemiptera*	LC	C	✓	✓	×	×	✓	✓	status change	NT
plants	higher dicots		*Senna acclinis*	LC	U	✓	×	×	×	✓	✓	status change	NT
plants	monocots	mountain reed grass	*Arundinella montana*	LC	C	×	×	×	✓	×	✓	status change	NT
plants	monocots	stream lily	*Helmholtzia glaberrima*	LC	U	×	✓	×	×	×	×	status change	NT
plants	monocots		*Paspalidium scabrifolium*	LC	C	×	×	×	✓	×	×	status change	NT
plants	monocots		*Schoenus scabripes*	LC	C	✓	✓	×	×	×	×	status change	NT

Sightings records that are not formally confirmed, and are thereby classified as ‘unconfirmed’ or ‘other’ are not necessarily unreliable, but simply have not been vetted by the state herbarium or museum. Studies have shown that community monitoring can be valuable even without quality control and that the results can be similar to systematic surveys undertaken by experts (Szabo & Possingham, 2012).

Appendix C: Sunshine Coast conservation estate and regional ecosystems

Table C1: Sunshine Coast council area regional ecosystems and relative extents within protected areas tenure

Please note: All extent values have been rounded to whole numbers, except where extent values are less than 10,000m^2 (1ha). These values are reported to one decimal places to ensure representation of their limited extents.

		Vegetation (ha)			Conservation estate											
					Protected areas (ha)									Voluntary conservation areas (ha)		Total extent of native vegetation in the conservation estate (ha)
Vegetation community (Number of regional ecosystem's)	Regional Ecosystem classification	Ver 11 RE Pre-clearing extent	Ver 11 RE current extent	Non-remnant attributed with Ver 11 Pre-clearing RE	Nature Refuge		Covenants		State		Council		Total extent of native vegetation in protected areas	Land for Wildlife		
					RE	Non Rem	RE	Non Rem	RE	Non Rem	RE	Non Rem		RE	Non Rem	
Mangrove Saltmarsh (2)	12.1.2	**701**	**490**	**14**	0	0	0	0	147	3	67	1	**218**	0	0	**218**
	12.1.3	**1,627**	**1,617**	**41**	3	0	0	0	315	4	302	2	**626**	0	0	**626**
Foredunes (2)	12.2.5	**205**	**58**	**22**	0	0	4	0.1	40	0.1	9	0.7	**54**	0	0	**54**
	12.2.14	**423**	**276**	**32**	0	0	0	0	99	6	154	9	**268**	0	0	**268**
Heath Wallum (15)	12.2.9	**179**	**68**	**9**	0	0	0	0	43	0	19	1	**63**	0	0	**63**
	12.2.12	**2,334**	**748**	**148**	0	0	2	1	495	8	56	17	**578**	0	0	**578**
	12.2.15	**207**	**160**	**7**	0	0	0	0	141	2	7	0	**150**	0	0	**150**
	12.2.15a	**2**	**2**	**0**	0	0	0	0	0	0	0	0	**0**	0	0	**0**
	12.3.8	**272**	**205**	**16**	5	0	3	0	50	0	33	1	**92**	2	0	**94**
	12.3.13	**4,175**	**1,295**	**239**	72	1	3	0	802	6	119	15	**1,018**	15	13	**1,045**
	12.3.14	**487**	**124**	**49**	0	0	0	0	102	1	10	4	**118**	0	0	**119**
	12.5.9	**50**	**23**	**3**	7	0	6	0	9	0	0	0	**21**	0	0	**21**
	12.5.10	**45**	**35**	**5**	0	0	0	0	28	0	0	0	**28**	3	3	**33**
	12.8.19	**207**	**207**	**0**	0	0	0	0	203	0	0	0	**203**	0	0	**203**
	12.9-10.22	**263**	**15**	**37**	0	0	0	0	1	0	10	6	**17**	0	0	**17**
	12.12.10	**7**	**7**	**0**	0	0	0	0	7	0	0	0	**7**	0	0	**7**
	12.12.19	**9**	**4**	**1**	0	0	0	0	0	0	3	1	**4**	0	0	**4**
	12.12.19x2	**26**	**4**	**2**	0	0	0	0	0	0	4	0	**4**	0	0	**4**
	12.12.19x3	**7**	**4**	**1**	0	0	0	0	0	0	3	0	**3**	0	0	**3**
Melaleuca Casuarina (10)	12.1.1	**680**	**425**	**60**	24	7	0	0	158	8	109	10	**315**	0	0	**315**
	12.2.7	**7,230**	**2,240**	**745**	0	0	1	2	1,253	226	266	74	**1,822**	1	3	**1,825**
	12.2.7a	**74**	**30**	**11**	0	0	0	0	29	11	0	0	**41**	0	0	**41**

		Vegetation (ha)			Conservation estate											
					Protected areas (ha)									Voluntary conservation areas (ha)		Total extent of native vegetation in the conservation estate (ha)
Vegetation community (Number of regional	Regional Ecosystem classification	Ver 11 RE Pre-clearing extent	Ver 11 RE current extent	Non-remnant attributed with Ver 11 Pre-clearing	Nature Refuge		Covenants		State		Council		Total extent of native vegetation in protected areas	Land for Wildlife		
	12.2.7c	**174**	**154**	**6**	0	0	0	0	152	6	0	0	**158**	0	0	**158**
	12.3.4	**5,728**	**1,327**	**910**	14	0	2	1	145	25	103	32	**323**	8	8	**339**
	12.3.5	**9,797**	**2,921**	**1,160**	12	0	15	3	935	120	573	156	**1,814**	19	16	**1,849**
	12.3.6	**2,827**	**811**	**379**	2	0	8	1	510	101	53	12	**688**	8	4	**700**
	12.3.7	**1,025**	**462**	**192**	3	1	24	4	3	0	2	0	**38**	32	12	**81**
	12.3.7b	**80**	**80**	**0.1**	0	0	0	0	0	0	0	0	**0**	0	0	**0**
	12.3.20	**1,382**	**505**	**150**	0	0	0	0	286	19	63	18	**386**	0	1	**387**
Eucalypt (36)	12.2.6	**41**	**6**	**7**	0	0	0	0	0	0	5	0	**5**	0	0	**5**
	12.2.8	**60**	**8**	**6**	0	0	0	0	0	0	2	0	**2**	0	0	**2**
	12.3.2	**9,301**	**3,026**	**1,745**	54	8	86	24	203	10	255	102	**743**	217	123	**1,083**
	12.3.11	**11,273**	**578**	**1,115**	4	1	7	19	82	9	40	50	**212**	16	70	**299**
	12.3.11a	**9**	**4**	**4**	0	0	0	0	0	0	0	0	**0**	0	0	**0**
	12.3.14a	**876**	**194**	**62**	14	0	2	0	120	1	2	5	**144**	4	1	**150**
	12.5.2a	**471**	**18**	**131**	0	0	1	3	0	0	4	3	**11**	0	2	**13**
	12.5.3	**12,126**	**1,390**	**985**	7	0	9	2	577	50	24	37	**707**	48	30	**785**
	12.5.4	**40**	**27**	**9**	0	0	0	0	20	2	0	0	**22**	0	0	**22**
	12.5.6c	**620**	**289**	**116**	13	0	4	1	26	0	37	6	**86**	4	2	**93**
	12.8.8	**3,457**	**578**	**1,111**	33	6	10	5	105	26	5	32	**222**	81	132	**435**
	12.8.8a	**67**	**22**	**26**	2	0	0	0	0	0	0	0	**2**	9	12	**23**
	12.8.14	**747**	**127**	**238**	0	0	1	1	3	0	1	4	**9**	16	39	**64**
	12.8.20	**722**	**667**	**26**	0	0	0	0	596	14	2	0	**613**	6	3	**622**
	12.9-10.1	**2,569**	**627**	**455**	3	0	14	5	26	0	50	11	**111**	32	19	**163**
	12.9-10.4	**7,881**	**1,611**	**762**	11	0	1	1	421	23	138	55	**650**	0	2	**651**
	12.9-10.7a	**1,636**	**228**	**398**	0	0	5	3	0	0	17	3	**28**	24	9	**62**
	12.9-10.14	**17,235**	**7,179**	**3,269**	173	31	249	52	789	35	477	123	**1,928**	673	225	**2,826**
	12.9-10.14a	**3,819**	**1,414**	**711**	42	9	41	18	205	9	49	2	**376**	135	58	**568**
	12.9-10.17a	**203**	**116**	**46**	20	0	0	0	0	0	1	0	**22**	8	4	**34**

		Vegetation (ha)			Conservation estate											
					Protected areas (ha)									Voluntary conservation areas (ha)		Total extent of native vegetation in the conservation estate (ha)
Vegetation community (Number of regional	Regional Ecosystem classification	Ver 11 RE Pre-clearing extent	Ver 11 RE current extent	Non-remnant attributed with Ver 11 Pre-clearing	Nature Refuge		Covenants		State		Council		Total extent of native vegetation in protected	Land for Wildlife		
	12.9-10.17d	**3,418**	**1,932**	**750**	27	6	68	13	314	10	93	15	**546**	286	101	**933**
	12.11.2	**4,748**	**3,530**	**417**	21	5	2	6	2,959	6	16	6	**3,020**	177	84	**3,281**
	12.11.3	**13,333**	**9,332**	**1,388**	64	7	28	9	4,550	8	118	8	**4,792**	336	127	**5,254**
	12.11.3a	**137**	**114**	**4**	0	0	0	0	88	0	0	0	**88**	0	0	**88**
	12.11.3b	**127**	**101**	**23**	0	0	0	0	0	0	0	0	**0**	18	3	**20**
	12.11.9	**1,150**	**1,101**	**37**	1	0	5	3	826	4	41	1	**881**	0	1	**882**
	12.11.9x1	**20**	**20**	**0**	0	0	0	0	20	0	0	0	**20**	0	0	**20**
	12.11.14	**3,642**	**384**	**543**	0	2	1	1	77	2	15	4	**101**	11	87	**199**
	12.11.27	**32**	**32**	**0**	0	0	0	0	29	0	0	0	**29**	0	0	**29**
	12.12.2	**12,284**	**9,322**	**1,185**	8	0	128	11	5,795	36	65	3	**6,046**	517	129	**6,692**
	12.12.12	**9,771**	**1,032**	**1,910**	0	0	30	32	46	2	46	35	**191**	117	205	**513**
	12.12.14	**1,536**	**1,151**	**161**	2	0	24	4	805	20	59	6	**920**	19	0	**939**
	12.12.15	**16,072**	**11,620**	**1,931**	255	25	241	19	5,326	49	295	69	**6,279**	953	259	**7,491**
	12.12.15a	**5,692**	**2,950**	**1,015**	99	11	26	12	591	23	29	1	**792**	415	144	**1,350**
	12.12.15b	**531**	**501**	**17**	6	0	19	3	348	7	0	0	**384**	22	2	**408**
	12.12.23	**363**	**282**	**41**	1	0	1	0	153	0	1	2	**159**	40	8	**207**
Rainforest (10)	12.3.1a	**4,554**	**1,749.6**	**906**	16	5	23	6	150	5	159	57	**421**	88	55	**565**
	12.5.13a	**1**	**0.9**	**0.1**	0	0	0	0	0	0	1	0	**1**	0	0	**1**
	12.8.3	**12,758**	**1,561**	**3,645**	70	35	47	57	201	7	58	106	**580**	280	524	**1,385**
	12.8.9	**4**	**4**	**0**	0	0	0	0	4	0	0	0	**4**	0	0	**4**
	12.8.13	**25**	**1**	**7**	0	0	0	0	0	0	0	0	**0**	0	0	**0**
	12.9-10.16	**1,733**	**1,176**	**303**	27	1	46	9	260	5	124	11	**483**	141	51	**675**
	12.11.1	**4,480**	**4,088**	**190**	6	4	14	13	3,643	1	4	3	**3,688**	64	26	**3,778**
	12.11.10	**6,425**	**2,576**	**778**	2	0	24	4	1,156	13	4	4	**1,208**	79	71	**1,357**
	12.12.1	**5,386**	**4,055**	**677**	105	24	49	14	2,547	61	66	28	**2,895**	296	100	**3,291**
	12.12.16	**3,869**	**1,547**	**837**	104	16	43	21	358	3	54	20	**619**	177	123	**919**

		Vegetation (ha)			Conservation estate											
					Protected areas (ha)									Voluntary conservation areas (ha)		Total extent of native vegetation in the conservation estate (ha)
Vegetation community (Number of regional	Regional Ecosystem classification	Ver 11 RE Pre-clearing extent	Ver 11 RE current extent	Non-remnant attributed with Ver 11 Pre-clearing	Nature Refuge		Covenants		State		Council		Total extent of native vegetation in protected areas	Land for Wildlife		
Totals		**225,471**	**92,566**	**32,306**	**1,332**	**209**	**1,319**	**382**	**39,373**	**1,002**	**4,322**	**1,188**	**49,096**	**5,398**	**2,891**	**57,385**

Table C2: Breakdown of the Sunshine Coast council area reserve tenure, type and relative native vegetation extents

Sector	Reserve type	Tenure	Reserve Category	Number of Reserves	Number of Lots	Total area (ha)	Remnant vegetation extent (ha)	Non-remnant vegetation extent (ha)	Total vegetation extent (ha)
State	National Park	Public		15	62	38,192	36,884	923	37,806
	Conservation Park	Public		15	20	2,612	2,489	80	2,569
			Sub-totals	**30**	**82**	**40,804**	**39,373**	**1,003**	**40,375**
Council	Nature Refuge	Freehold	Conservation	6	7	158	153	3	157
			Nature	1	1	28	21	6	27
			Bushland	11	18	455	411	38	449
			Natural Amenity	0	0	0	0	0	0
			Coastal	0	0	0	0	0	0
			Sub-totals	**18**	**26**	**641**	**585**	**48**	**633**
	Environment Reserve	Freehold	Conservation	7	10	146	138	6	144
			Nature	5	8	315	301	8	310
			Bushland	58	130	2,119	1,178	435	1,613
			Natural Amenity	30	48	35	21	12	32
			Coastal	2	3	2	1		1
			Sub-totals	**102**	**216**	**2,617**	**1,639**	**461**	**2,100**
		Trustee	Conservation	2	5	42	27	12	39
			Nature	1	1	3	1	1	2
			Bushland	176	442	2,051	1,485	412	1,897
			Natural Amenity	198	297	222	124	80	204
			Coastal	19	31	135	115	15	130
			Sub-totals	**396**	**776**	**2,453**	**1,754**	**519**	**2,272**
		Nominee under trust	Conservation	1	1	3	0	2	2
			Nature	4	6	58	54	3	57
			Bushland	43	75	492	367	93	460
			Natural Amenity	31	43	41	13	17	30
			Coastal	1	1	0	0	0	0
			Sub-totals	**80**	**126**	**595**	**434**	**116**	**550**
		Other – these are reserves that do not have an associated cadastre lot plan Eg. Some coastal, esplanade and road parcels	Conservation	7	-	184	170	8	178
			Nature	1	-	4	2	1	3
			Bushland	71	-	268	202	45	248
			Natural Amenity	36	-	46	12	18	30
			Coastal	22	-	144	108	20	128
			Sub-totals	**137**	**-**	**645**	**495**	**93**	**588**
			Council Reserve Totals	**733**	**1,144**	**6,951**	**4,907**	**1,236**	**6,143**
Private	Nature Refuge	Freehold		36	46	937	747	162	909
	Voluntary Covenants	Freehold		-	53 (+7NR)	558	402	133	535
	Development Covenants	Freehold		-	1,426	1,466	903	243	1,146
	Land for Wildlife	Freehold		-	969	12,458	5,398	2,891	8,289
			Sub-totals	**36**	**2,494**	**15,426**	**7,450**	**3,429**	**10,879**
			Totals	**799**	**3,720**	**63,181**	**51,730**	**5,668**	**57,398**

Appendix D: Maroochy River catchment vegetation and conservation estate

Table D1: Maroochy River catchment regional ecosystems and relative extents within protected areas tenure

					Conservation estate											
	Native Vegetation (ha)				Protected areas (ha)									Voluntary conservation areas (ha)		Total extent of native vegetation in the conservation estate (ha)
Vegetation community	Regional Ecosystem Classification	Ver 11 RE Pre-clearing extent	Ver 11 RE current extent	FSV attributed with Ver 11 Pre-clearing RE	State		Council		Nature Refuge		Covenants		Total extent of native vegetation in protected areas	Land for Wildlife		
					RE	Non Rem	RE	Non Rem	RE	Non Rem	RE	Non Rem		RE	Non Rem	
Mangrove Saltmarsh	12.1.2	97	70	6	12	0	31	0	0	0	0	0	43	0	0	43
	12.1.3	480	454	13	150	0	119	1	3	0	0	0	273	0	0	273
	Sub-total	577	523	19	162	1	149	1	3	0	0	0	316	0	0	316
Foredune	12.2.5	53	17	7	8	0	8	0	0	0	4	0	20	0.1	0.2	20
	12.2.14	134	106	6	0	0	82	3	0	0	0	0	85	0.1	0	85.1
	Sub-total	187	123	12	8	0	91	3	0	0	4	1	107	0.2	0.2	107
Heath Wallum	12.2.9	62	49	1	38	0	8	0	0	0	0	0	46	0	0	46
	12.2.12	1,188	543	76	407	2	36	10	0	0	2	1	458	0	0.1	458
	12.2.15	80	51	5	43	1	6	0	0	0	0	0	50	0	0	50
	12.3.8	138	102	8	48	0	33	1	5	0	0.06	0	87	1.4	0	88.4
	12.3.13	412	162	54	44	0	38	1	12	0	2	0	97	13	1	111
	12.5.10	38	29	5	23	0	0	0	0	0	0.03	0	23	3	3	29
	12.8.19	51	51	0	51	0	0	0	0	0	0	0	51	0	0	51
	12.12.10	7	7	0	7	0	0	0	0	0	0	0	7	0	0	7
	12.12.19	9	4	1	0	0	3	1	0	0	0	0	4	0	0	4
	12.12.19x2	7	4	0	0	0	4	0	0	0	0	0	4	0	0	4
	Sub-total	1,991	1,002	151	661	3	128	13	17	0	4	1	827	17	4	848
Melaleuca Casuarina	12.1.1	428	253	44	35	1	93	8	24	7	0	0	168	0	0	168
	12.2.7	3,215	692	316	320	6	126	19	0	0	1	2	474	0.3	0.5	474.8
	12.3.4	76	18	12	0	0	14	1	0	0	0	0	15	0	0	15
	12.3.5	3,493	909	298	113	1	279	46	12	0	15	1	467	5	5	477
	12.3.6	627	50	123	11	0	1	2	2	0	0	1	17	7	4	28
	12.3.20	1,295	462	137	282	19	56	11	0	0	0	0	368	0.3	0.5	368.8
	Sub-total	9,134	2,385	930	760	26	569	86	37	7	16	4	1,505	13	10	1,528
Eucalypt	12.3.2	5,372	1,335	982	79	0	64	34	15	1	38	14	245	120	70	435
	12.3.11	4,188	106	441	1	0	10	21	0.04	0	5	12	49	4	11	64
	12.3.11a	9	4	4	0	0	0	0	0	0	0	0	0	0	0	0
	12.3.14a	12	12	0	0.7	0	0	0	0	0	0	0	1	0	0	1
	12.5.2a	343	14	91	0	0	3	2	0.4	0	1	1	7	0	0.3	7
	12.5.3	321	158	52	15	0	6	0	0	0	0	0	21	1	3	25
	12.5.4	9	2	5	2	2	0	0	0	0	0	0	4	0	0	4
	12.5.6c	266	183	29	17	0	17	0	13	0	4	1	52	3	2	57
	12.8.8	1,039	110	283	0.06	0	0	28	0	0	1	2	31	24	23	78
	12.8.14	219	29	58	3	0	0.07	0	0	0	0	0	3	11	5	19
	12.8.20	36	33	2	30	1	0.43	0	0	0	0	0	31	0	0	31
	12.9-10.1	2,217	524	383	26	0	27	9	3	0	13	5	83	20	17	120

	12.9-10.4	483	111	87	31	2	12	3	0	0	1	1	50	0	0	50
	12.9-10.7a	994	94	239	0	0	12	2	0	0	2	3	19	13	8	40
	12.9-10.14	8,254	3,033	1,752	172	5	151	18	48	4	134	27	559	335	124	1,018
	12.9-10.14a	13	10	1	0	0	0	0	0	0	0	0	0	5	0	5
	12.9-10.17a	58	3	20	0	0	1	0	0	0	0	0	1	0	0	1
	12.9-10.17d	673	316	147	0	0	23	3	0	0	13	2	41	55	13	109
	12.11.2	6	10	1	0	0	0	0	0	0	0	0	0	0	0	0
	12.11.3	1		0	0	0	0	0	0	0	0	0	0	0	0	0
	12.11.14	34	1	11	0	0	0	0	0	0	0	0	0	1	1	2
	12.12.2	6,891	4,966	732	2,735	23	54	3	8	0	66	10	2,899	279	71	3,249
	12.12.12	4,853	614	1,187	11	1	44	27	0	0	21	20	124	49	62	235
	12.12.14	973	589	161	287	20	49	6	0	0	24	4	390	19	0	409
	12.12.15	3,641	2,154	645	776	20	162	8	26	1	47	9	1,049	113	50	1,212
	12.12.15a	1,466	518	246	110	1	7	0	0.2	0	2	1	121	61	8	190
	12.12.23	42	7	14	0	0	1	2	0	0	0.83	0	4	0.6	0.7	5.3
	Sub-total	42,413	14,936	7,573	4296	76	644	165	112	7	374	109	5,783	1,114	468	7,365
Rainforest	12.3.1a	1,384	647	256	25	1	46	13	4	0	20	4	113	38	9	160
	12.5.13a	1	1	0	0	0	1	0	0	0	0	0	1	0	0	1
	12.8.3	2,266	203	749	8	1	4	47	4	3	3	20	90	25	101	216
	12.9-10.16	662	360	134	1	0	55	2	11	0	27	7	103	35	22	160
	12.11.10	696	117	229	0	0	0	0	0	0	0	0	0	5	18	23
	12.12.1	944	576	156	363	1	31	14	1	16	16	3	445	21	22	488
	12.12.16	2,213	786	492	117	3	35	20	26	0	41	18	260	114	49	423
	Sub-total	8,166	2,690	2,015	514	6	172	96	45	23	107	52	1,015	239	221	1,475
	Totals	**62,468**	**21,659**	**10,700**	**6,401**	**112**	**1,753**	**364**	**214**	**37**	**505**	**167**	**9,553**	**1,383**	**703**	**11,639**

Please note: All extent figures have been rounded to whole numbers, except where extent values are less than 10,000m^2 (1ha). These values are reported to two decimal places to ensure representation of their limited extents.

Table D2: Breakdown of the Maroochy River catchment reserve tenure, type and relative native vegetation extents

Sector	Reserve type	Number of Reserves	Number of Lots	Total area (ha)	Remnant vegetation extent (ha)	Non-remnant vegetation extent (ha)	Native vegetation extent (ha)
State	National Park	6	8	4,295	4,206	57	4,263
	Conservation Park	9	14	2,290	2,196	55	2,252
	Sub-totals	**15**	**22**	**6,585**	**6,402**	**113**	**6,515**
Council	Nature Refuge	5	11	193	175	15	190
	Freehold	53	91	1,007	632	101	734
	Trustee	187	352	1,017	765	207	972
	Nominee under trust	51	82	281	228	38	266
	Other	54	-	211	143	39	182
	Sub-totals	**350**	**536**	**2,710**	**1,943**	**400**	**2,343**
Private	Nature Refuge	5	9	66	40	21	61
	Voluntary Covenants	-	17	148	105	36	142
	Development Covenants	-	1,006	568	384	125	509
	Land for Wildlife	-	440	2,895	1,383	703	2,086
	Sub-totals	**5**	**1,472**	**3,678**	**1,912**	**885**	**2,798**
	Total	**370**	**2,030**	**12,972**	**10,257**	**1,398**	**11,655**

Appendix E: Mary River catchment vegetation and conservation estate

Table E1: Mary River catchment regional ecosystems and relative extents within protected areas tenure

					Conservation estate											
	Native Vegetation (ha)				Protected areas (Ha)									Voluntary conservation areas (Ha)		Total extent of native vegetation in the conservation estate (ha)
Vegetation community	Regional Ecosystem Classification	Ver 11 RE Pre-clearing extent	Ver 11 RE current extent	FSV attributed with Ver 11 Pre-clearing RE	State		Council		Nature Refuge		Covenants		Total extent of native vegetation in protected areas	Land for Wildlife		
					RE	Non Rem	RE	Non Rem	RE	Non Rem	RE	Non Rem		RE	Non Rem	
Heath Wallum	12.3.8	80	73	0.2	0	0	0	0	0	0	3	0	3	1	0	4
Melaleuca Casuarina	12.3.4	5	5	0.2	0	0	5	0.1	0	0	0	0	5	0	0	5
	12.3.5	4	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
	12.3.7	1,025	462	192	3	0	2	0	3	1	24	4	38	32	12	81
	12.3.7b	80	80	0.1	0	0	0	0	0	0	0	0	0	0	0	0
	Sub-total	1,114	547	193	3	0	7	0.1	3	1	24	4	42	32	12	86
Eucalypt	12.3.2	804	209	145	40	4	3	1	6	0.3	0	1	55	23	21	99
	12.3.11	5,372	260	447	33	8	18	18	0	0.7	1	6	85	9	46	140
	12.8.8	1,905	361	674	104	26	5	4	15	4	7	3	168	46	84	298
	12.8.8a	67	22	26	0	0	0	0	2	0	0	0	2	10	12	23
	12.8.14	46	0	27	0.1	0.0	0	0	0	0	0	0	0	0.2	1	1
	12.9-10.7a	258	69	46	0	0	0	0	0	0	0	0	0	11	1	12
	12.9-10.14	106	32	23	0	0	0	0	0	0	0	0	0	7	1	8
	12.9-10.14a	17	15	1	0	0	0	0	0	0	0	0	0	0	0	0
	12.9-10.17a	126	99	22	0	0	0	0	20	0	0	0	20	2	1	24
	12.11.2	4742	3520	415	2,959	6	16	6	21	5	2	6	3,020	177	84	3,281
	12.11.3	13,332	9332	1,388	4,550	8	118	8	64	7	28	9	4,792	336	127	5,254
	12.11.3a	137	114	4	88	0	0	0	0	0	0	0	88	0	0	88
	12.11.3b	127	101	23	0	0	0	0	0	0	0	0	0	18	3	20
	12.11.9	1,150	1101	37	826	4	41	1	1	0	5	3	881	0.2	1	882
	12.11.9x1	20	20	0	20	0	0	0	0	0	0	0	20	0	0	20
	12.11.14	3607	383	532	77	2	15	4	0	2	1	1	101	10	86	197
	12.11.27	32	32	0	29	0	0	0	0	0	0	0	29	0	0	29
	12.12.2	4367	3831	309	3,060	13	11	0.1	0	0	32	1	3,118	160	45	3,323
	12.12.12	4918	419	723	35	1	2	8	0.4	0	10	12	68	68	144	279
	12.12.14	562	562	0	518	0	10	0	2	0	0	0	531	0	0	531
	12.12.15	12010	9292	1,207	4,541	29	128	60	210	24	177	9	5,178	818	209	6,204
	12.12.15a	3268	1982	658	481	22	0	0	98	11	18	5	634	293	101	1,028
	12.12.15b	530	499	17	348	7	0	0	6	0.4	17	3	382	22	2	407
	12.12.23	321	275	27	153	0	0	0	1	0	0	0	155	39	7	202
	Sub-total	57,827	32,531	6,749	17,863	130	367	111	447	55	298	57	19,328	2,049	975	22,352
Rainforest	12.3.1a	1461	474	310	80	4	10	10	0.4	3	1	1	109	27	21	157
	12.8.3	8280	847	2,317	76	3	52	52	25	28	38	32	307	155	295	757
	12.8.9	4	4	0	4	0	0	0	0	0	0	0	4	0	0	4

	12.8.13	25	1	7	0	0	0	0	0	0	0	0	0	0	0	0
	12.9-10.16	30	23	4	0	0	0	0	5	0	0	0	5	0	0	5
	12.11.1	4480	4088	190	3,643	1	4	3	6	4	14	13	3,688	64	26	3,778
	12.11.10	5729	2459	549	1,156	13	4	4	2	0	24	4	1,208	74	53	1,334
	12.12.1	4147	3280	475	2,184	60	24	14	104	9	18	2	2,415	238	71	2,724
	12.12.16	1593	699	345	241	0.1	19	0.1	78	13	0	3	353	63	74	490
	Sub-total	25,750	11,875	4,199	7,385	81	113	84	220	57	96	54	8,089	621	538	9,249
Total		**84,771**	**45,027**	**11,141**	**25,250**	**211**	**486**	**195**	**670**	**113**	**421**	**115**	**27,462**	**2,703**	**1,525**	**31,690**

Please note: All extent figures have been rounded to whole numbers, except where extent values are less than 10,000m^2 (1ha). These values are reported to two decimal places to ensure representation of their limited extents.

Table E2: Breakdown of the Mary River catchment reserve tenure, type and relative native vegetation extents

Sector	Reserve type	Number of Reserves	Number of Lots	Total area (ha)	Remnant vegetation extent (ha)	Non-remnant vegetation extent (ha)	Native vegetation extent (ha)
State	National Park	5	22	25,508	25,250	211	25,462
	Conservation Park	0	0	0	0	0	0
	Sub-totals	**5**	**22**	**25,508**	**25,250**	**211**	**25,462**
Council	Nature Refuge	3	3	127	125	1	126
	Freehold	10	14	479	268	132	399
	Trustee	27	37	247	175	51	225
	Nominee under trust	5	7	43	39	2	42
	Other	12	-	21	4	11	15
	Sub-totals	**60**	**61**	**916**	**611**	**196**	**807**
Private	Nature Refuge	23	24	675	545	112	657
	Voluntary Covenants	-	24(+5NR)	253	182	60	241
	Development Covenants	-	68	530	238	46	284
	Land for Wildlife	-	319	6,774	2,703	1,525	4,228
	Sub-totals	**23**	**435**	**8,232**	**3,667**	**1,742**	**5,410**
	Total	**88**	**518**	**34,656**	**29,529**	**2,150**	**31,679**

Appendix F: Mooloolah River catchment vegetation and conservation estate

Table F1: Mooloolah River catchment regional ecosystems and relative extents within protected areas tenure

		Conservation estate														
		Native Vegetation (ha)			Protected areas (ha)									Voluntary conservation areas (ha)		Total extent of native vegetation in the conservation estate (ha)
Vegetation community	Regional Ecosystem Classification	Ver 11 RE Pre-clearing extent	Ver 11 RE current extent	FSV attributed with Ver 11 Pre-clearing RE	State		Council		Nature Refuge		Covenants		Total extent of native vegetation in protected areas	Land for Wildlife		
					RE	Non Rem	RE	Non Rem	RE	Non Rem	RE	Non Rem		RE	Non Rem	
Mangrove Saltmarsh (2)	12.1.2	40	10	1	3	0	3	0	0	0	0	0	6	0	0	6
	12.1.3	81	63	1	21	0	17	0	0	0	0	0	38	0	0	38
	Sub-total	121	73	2	24	0	20	0	0	0	0	0	44	0	0	44
Foredune (2)	12.2.5	22	0	7	0	0	0	0	0	0	0	0	1	0	0	1
	12.2.14	147	85	13	6	0	72	5	0	0	0	0	84	0	0	84
	Sub-total	169	86	20	6	0	72	6	0	0	0	0	84	0	0	84
Heath Wallum (10)	12.2.9	40	6	3	0	0	5	0	0	0	0	0	6	0	0	6
	12.2.12	838	66	47	36	1	6	1	0	0	0	0	44	0	0	44
	12.2.15	18	7	1	4	0	0	0	0	0	0	0	4	0	0	4
	12.2.15a	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
	12.3.8	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0
	12.3.13	1,494	512	85	401	1	22	9	48	1	0	0	482	0	11	494
	12.3.14	19	17	1	15	1	0	0	0	0	0	0	16	0	0	16
	12.9-10.22	242	10	33	0	0	6	4	0	0	0	0	10	0	0	10
	12.12.19x2	20	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	12.12.19x3	7	4	1	0	0	3	0	0	0	0	0	3	0	0	3
	Sub-total	2,684	626	171	455	2	44	15	48	1	0	0	566	0	11	578
Melaleuca Casuarina (6)	12.1.1	55	9	2	6	0	3	1	0	0	0	0	9	0	0	9
	12.2.7	1,071	129	65	42	0	42	7	0	0	0	0	91	0	0	91
	12.3.4	54	24	6	0	0	9	2	0	0	0	1	11	0	0	11
	12.3.5	2,406	847	293	296	10	219	95	0	0	0	1	622	5	10	637
	12.3.6	191	114	23	78	1	10	0	0	0	0	0	89	0	0	89
	12.3.20	31	5	8	0	0	4	7	0	0	0	0	10	0	0	10
	Sub-total	3,807	1,126	397	422	11	286	111	0	0	0	2	832	5	10	848
Eucalypt (16)	12.2.6	37	3	7	0	0	1	0	0	0	0	0	1	0	0	1
	12.2.8	60	8	6	0	0	2	0	0	0	0	0	2	0	0	2
	12.3.2	1,516	717	297	64	5	147	46	27	3	38	7	336	39	13	388
	12.3.11	1,266	50	175	9	0	6	8	4	1	1	1	29	1	12	42
	12.3.14a	255	102	15	79	0	2	5	12	0	0	0	98	0	1	99
	12.5.2a	128	5	40	0	0	1	1	0	0	0	2	4	0	2	5
	12.5.3	102	7	27	0	0	0	0	0	0	0	0	0	0	0	1
	12.8.8	102	14	35	0	0	0	0	0	0	0	0	0	4	9	12
	12.8.14	285	53	85	0	0	0	0	0	0	1	0	1	2	23	26
	12.9-10.1	352	103	72	0	0	24	2	0	0	1	0	28	12	3	43
	12.9-10.4	857	208	162	85	2	47	26	0	0	0	0	161	0	0	161
	12.9-10.7a	281	56	95	0	0	5	1	0	0	3	0	9	0	0	9

	12.9-10.14	4,625	2,390	818	261	22	219	20	71	9	99	22	723	221	51	995
	12.9-10.14a	1,278	672	227	152	6	13	0	28	3	39	18	259	40	10	310
	12.9-10.17a	18	14	4	0	0	0	0	0	0	0	0	0	6	3	9
	12.9-10.17d	1,900	1,097	417	259	9	40	9	7	2	42	5	373	140	42	556
	Sub-total	13,062	5,498	2,481	911	44	506	118	148	18	223	55	2,023	465	169	2,657
Rainforest (3)	12.3.1a	808	298	135	45	0	65	27	10	1	0	0	147	13	12	172
	12.8.3	926	121	279	2	0	0	6	32	0	0	1	42	47	62	151
	12.9-10.16	583	483	60	163	2	23	1	9	1	11	1	211	74	12	297
	Sub-total	2,316	901	474	209	3	88	34	51	2	11	2	399	134	87	620
Total		**22,159**	**8,310**	**3,545**	**2,027**	**61**	**1,016**	**284**	**247**	**21**	**235**	**59**	**3,950**	**604**	**277**	**4,831**

Please note: All extent figures have been rounded to whole numbers, except where extent values are less than 10,000m^2 (1ha). These values are reported to two decimal places to ensure representation of their limited extents.

Table F2: Breakdown of the Mooloolah River catchment reserve tenure, type and relative native vegetation extents

Sector	Reserve type	Number of Reserves	Number of Lots	Total area (ha)	Remnant vegetation extent (ha)	Non-remnant vegetation extent (ha)	Native vegetation extent (ha)
State	National Park	2	7	1843	1791	43	1834
	Conservation Park	5	5	257	236	18	254
	Sub-totals	**7**	**12**	**2,100**	**2,027**	**61**	**2,088**
Council	Nature Refuge	6	7	192	177	12	189
	Freehold	27	75	563	309	92	401
	Trustee	107	237	692	529	111	640
	Nominee under trust	16	25	234	141	68	208
	Other	41	-	56	37	13	51
	Sub-totals	**197**	**344**	**1,737**	**1,193**	**296**	**1,489**
Private	Nature Refuge	4	4	83	70	9	80
	Voluntary Covenants	-	3 (+1NR)	33	30	3	33
	Development Covenants	-	382	274	206	56	262
	Land for Wildlife	-	123	1,237	604	277	881
	Sub-totals	**4**	**868**	**1,627**	**910**	**345**	**1255**
Total		**208**	**483**	**5,464**	**4,131**	**701**	**4,832**

Appendix G: Pumicestone Passage (including north Bribie Island) catchment vegetation and conservation estate

Table G1: Pumicestone Passage catchment regional ecosystems and relative extents within protected areas tenure

Vegetation community	Native Vegetation (ha)				Conservation estate											
					Protected areas (ha)									Voluntary conservation areas (ha)		Total extent of native vegetation in the conservation estate (ha)
	Regional Ecosystem Classification	Ver 11 RE Pre-clearing extent	Ver 11 RE current extent	FSV attributed with Ver 11 Pre-clearing RE	State		Council		Nature Refuge		Covenants		Total extent of native vegetation in protected areas (ha)	Land for Wildlife		
					RE	Non Rem	RE	Non Rem	RE	Non Rem	RE	Non Rem		RE	Non Rem	
Mangrove Saltmarsh	12.1.2	564	410	8	132	3	34	1	0	0	0	0	168	0	0	168
	12.1.3	1,066	1,100	27	144	4	167	1	0	0	0	0	315	0	0	315
	Total	1,630	1,510	34	276	6	200	2	0	0	0	0	484	0	0	484
Foredune	12.2.5	122	33	8	32	0	0	0	0	0	0	0	32	0	0	32
	12.2.14	131	73	13	72	5	0	1	0	0	0	0	78	0	0	78
	Sub-total	253	106	21	104	6	0	1	0	0	0	0	111	0	0	111
Heath Wallum	12.2.9	71	8	5	0	0	5	0	0	0	0	0	6	0	0	6
	12.2.12	252	88	24	20	4	9	6	0	0	0	0	39	0	0	39
	12.2.15	93	89	1	85	1	0	0	0	0	0	0	86	0	0	86
	12.3.8	50	25	8	2	0	0	0	0	0	0	0	2	0	0	2
	12.3.13	2,183	540	99	284	5	59	5	11	0	0	0	364	0	0	364
	12.3.14	468	107	48	87	0	10	4	0	0	0	0	102	0	0	103
	12.5.9	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	12.8.19	132	132	0	128	0	0	0	0	0	0	0	128	0	0	128
	12.9-10.22	10	2	2	1	0	1	0	0	0	0	0	2	0	0	2
	Sub-total	3,263	991	187	607	11	85	16	11	0	0	0	730	0	0	730
Melaleuca Casuarina	12.1.1	198	163	14	117	7	13	1	0	0	0	0	139	0	0	139
	12.2.7	2,755	1,319	326	863	220	57	28	0	0	0	0	1,168	0	2	1,170
	12.2.7a	74	30	11	29	11	0	0	0	0	0	0	41	0	0	41
	12.2.7c	174	154	6	152	6	0	0	0	0	0	0	158	0	0	158
	12.3.4	5,416	1,251	798	145	25	75	22	14	0	2	1	285	8	8	301
	12.3.5	3,766	1,066	564	467	109	75	13	0	0	0	0	664	6	1	670
	12.3.6	2,007	647	232	421	100	43	10	0	0	8	0	583	1	0	584
	12.3.20	56	37	5	4	0	3	0	0	0	0	0	8	0	0	8
	Sub-total	14,447	4,668	1,956	2,199	478	266	75	14	0	11	1	3,044	14	12	3,070
Eucalypt	12.3.2	1,101	652	183	21	0	31	8	5	4	5	0	74	28	9	111
	12.3.11	301	161	44	39	0	7	3	0	0	0	1	49	3	1	52
	12.3.14a	572	52	45	36	1	0	0	0	0	0	0	37	0	0	37
	12.5.3	11,182	1,112	749	529	50	17	11	1	0	5	2	616	40	26	681
	12.5.6	328	102	85	7	0	20	5	0	0	0	0	32	0	0	32
	12.8.8	105	24	42	0	0	0	0	2	0	2	0	5	2	10	17
	12.8.14	60	2	31	0	0	0	0	0	0	0	0	0	0	6	6
	12.8.20	637	584	24	517	13	2	0	0	0	0	0	532	6	3	541
	12.9-10.4	4,944	942	351	273	18	76	25	11	0	0	0	403	0	2	405
	12.9-10.14	2,113	706	226	175	3	17	5	26	10	0	1	238	54	5	297
	12.9-10.14a	1,254	343	147	27	0	4	1	15	0	2	0	48	54	18	120
	12.9-10.17d	671	416	138	55	1	25	3	11	5	9	1	108	88	21	217
	12.12.2	43	35	5	0	0	0	0	0	0	0	0	0	0	0	0
	12.12.15	410	164	79	9	1	5	0	18	0	16	1	50	22	1	73
	Sub-total	23,721	5,295	2,148	1,688	88	202	61	88	19	40	6	2192	296	103	2,590
Rainforest	12.3.1a	143	80	34	0	0	12	2	3	0	1	0	18	2	1	21
	12.8.3	57	23	22	3	0	0	0	3	0	2	0	9	0	4	13
	12.9-10.16	58	44	10	4	0	1	0	1	0	0	0	6	6	1	13

	Sub-total	258	147	65	7	0	12	3	7	0	3	0	33	8	6	46
	Totals	**43,572**	**12,717**	**4,412**	**4,880**	**589**	**766**	**157**	**120**	**19**	**54**	**7**	**6,592**	**317**	**121**	**7,031**

Please note: All extent figures have been rounded to whole numbers, except where extent values are less than 10,000m^2 (1ha). These values are reported to two decimal places to ensure representation of their limited extents.

Table G2: Breakdown of the Pumicestone Passage River catchment reserve tenure, type and relative native vegetation extents

Sector	Reserve type	Number of Reserves	Number of Lots	Total area (ha)	Remnant vegetation extent (ha)	Non-remnant vegetation extent (ha)	Native vegetation extent (ha)
State	National Park	4	24	5,775	4,878	603	5,482
	Conservation Park	1	1	2	2		2
	Sub-totals	**5**	**25**	**5,777**	**4,880**	**603**	**5,484**
Council	Nature Refuge	4	4	129	109	19	128
	Freehold	13	13	282	226	46	272
	Trustee	71	134	374	237	83	320
	Nominee under trust	7	10	21	13	5	19
	Other	28		331	289	25	315
	Sub-totals	**123**	**161**	**1,137**	**875**	**179**	**1,054**
Private	Nature Refuge	2	2	12	11	0	11
	Voluntary Covenants	-	3	12	10	2	12
	Development Covenants	-	52	50	44	4	48
	Land for Wildlife	-	52	595	317	121	439
	Sub-totals	**2**	**109**	**668**	**383**	**128**	**511**
	Total	**130**	**295**	**7,582**	**6,138**	**910**	**7,048**

Appendix H: Upper Stanley River catchment vegetation and conservation estate

Table H1: Upper Stanley River catchment regional ecosystems and relative extents within protected areas tenure

					Conservation estate											
	Native Vegetation (ha)				Protected areas (ha)									Voluntary Conservation Areas (ha)		Total extent of native vegetation in the conservation estate (ha)
Vegetation community	Regional Ecosystem Classification	Ver 11 RE Pre-clearing extent	Ver 11 RE current extent	FSV attributed with Ver 11 Pre-clearing RE	State		Council		Nature Refuge		Covenants		Total extent of native vegetation in protected areas	Land for Wildlife		
					RE	Non Rem	RE	Non Rem	RE	Non Rem	RE	Non Rem		RE	Non Rem	
Heath Wallum	12.3.8	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
	12.8.19	9	9	0	9	0	0	0	0	0	0	0	9	0	0	9
	Sub-total	**11**	**11**	0	9	0	0	0	0	0	0	0	9	0	0	9
Melaleuca Casuarina	12.3.4	152	27	84	0	0	0	0	0	0	0	0	0	0	0	0
	Sub-total	152	27	84	0	0	0	0	0	0	0	0	0	0	0	0
Eucalypt	12.3.2	508	113	138	0	0	10	13	3	1	5	3	35	7	10	53
	12.3.11	145	0	8	0	0	0	0	0	0	0	0	0	0	0	0
	12.5.3	98	30	5	0	0	0	0	0	0	0	0	0	0	0	0
	12.5.6c	20	0	2	0	0	0	0	0	0	0	0	0	0	0	0
	12.8.8	306	69	76	1	0	0	0	15	2	0.1	0.1	18	5	7	30
	12.8.14	137	42	38	0	0	1	4	0	0	0	1	6	3	3	11
	12.8.20	11	11	0	11	0	0	0	0	0	0	0	11	0	0	11
	12.9-10.4	1,469	329	139	31	1	0	0	0	0	0	0	31	0	0	31
	12.9-10.7a	103	8	17	0	0	0	0	0	0	0	0	0	0	0	0
	12.9-10.14	2,133	1,017	450	181	5	90	79	29	7	16	2	408	56	44	509
	12.9-10.14a	1,256	374	335	26	3	32	1	0	6	0	0.2	68	35	29	133
	12.9-10.17d	175	103	49	0	0	5	1	8	0	4	5	24	3	25	52
	12.12.2	984	490	139	0	0	0	0	0	0	30	1	31	79	14	123
	12.12.15	10	10	0	0	0	0	0	0	0	1	0	1	0	0	1
	12.12.15a	958	450	111	0	0	22	0.3	1	0.5	6	6	36	61	34	131
	12.12.15b	1	1	0	0	0	0	0	0	0	1	0	1	0	0	1
	Sub-total	**8,315**	**3,047**	**1,506**	**249**	**9**	**160**	**99**	**56**	**15**	**63**	**18**	**670**	**250**	**166**	**1,086**
Rainforest	12.3.1a	758	251	171	0	0	26	5	0	0	2	1	35	9	13	56
	12.8.3	1,228	368	278	112	3	1	1	7	4	3	4	134	53	63	249
	12.9-10.16	401	265	95	92	3	46	8	1	0	8	2	160	26	15	200
	12.12.1	296	199	45	0	0	11	0	0	0	15	8	34	36	8	77
	12.12.16	63	62	0	0	0	0	0	0	0	2	0	2	0	0	2
	Sub-total	**2,746**	**1,146**	**590**	**204**	**5**	**84**	**13**	**8**	**4**	**30**	**15**	**363**	**123**	**98**	**585**
	Totals	**11,224**	**4,231**	**2,179**	**463**	**14**	**243**	**113**	**64**	**19**	**93**	**34**	**1,043**	**373**	**264**	**1,680**

Please note: All extent figures have been rounded to whole numbers, except where extent values are less than 10,000m^2 (1ha). These values are reported to two decimal places to ensure representation of their limited extents.

Table H2: Breakdown of the Upper Stanley River catchment reserve tenure, type and relative native vegetation extents

Sector	Reserve type	Number of Reserves	Number of Lots	Total area (ha)	Remnant vegetation extent (ha)	Non-remnant vegetation extent (ha)	Native vegetation extent (ha)
State	National Park	1	1	420	407	7	415
	Conservation Park	1	1	63	55	7	62
Sub-totals		**2**	**2**	**483**	**463**	**14**	**477**
Council	Nature Refuge	0	0	0	0	0	0
	Freehold	4	8	320	220	95	315
	Trustee	9	13	39	23	15	37
	Nominee under trust	1	2	1	1	0	1
	Other	3	0	4		3	3
Sub-totals		**17**	**23**	**364**	**244**	**112**	**356**
Private	Nature Refuge	4	4	85	64	19	84
	Voluntary Covenants	-	7 (+1NR)	87	61	23	84
	Development Covenants	-	22	43	31	11	43
	Land for Wildlife	-	59	936	373	264	637
Sub-totals		**4**	**92**	**1152**	**530**	**317**	**847**
Total		**23**	**117**	**1998**	**1236**	**444**	**1680**

Appendix I: Noosa River catchment summary results

The following catchment results summary relates to the small portion, less than 2%, of the Noosa catchment that occurs at the northern boundary of the local government boundary and adjacent to the Maroochy River catchment. The following results include, native vegetation communities, regional ecosystems, conservation estate and threatened flora and fauna species.

Table I1: Mary River catchment regional ecosystems and relative extents within protected areas tenure

					Conservation estate											
	Native Vegetation (ha)				Protected areas (ha)									Voluntary conservation areas (ha)		Total extent of native vegetation in the conservation estate (ha)
Vegetation community	Regional Ecosystem Classification	Ver 11 RE Pre-clearing extent	Ver 11 RE current extent	FSV attributed with Ver 11 Pre-clearing RE	State		Council		Nature Refuge		Covenants		Total extent of native vegetation in protected areas	Land for Wildlife		
					RE	Non Rem	RE	Non Rem	RE	Non Rem	RE	Non Rem		RE	Non Rem	
Foredune	12.2.5	8	8	0	8	0	0	0	0	0	0	0	0	0	0	0
	12.2.14	11	11	0	11	0	0	0	0	0	0	0	0	0	0	0
	Sub-total	**19**	**19**	**0**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**19**	**0**	**0**	**19**
Heath and Wallum	12.2.9	6	5	0.2	5	0	0	0	0	0	0	0	5	0	0	5
	12.2.12	56	51	0.8	32	0.1	5	0	0	0	0	0	37	0	0	37
	12.2.15	16	13	0.7	10	0	0.2	0	0	0	0	0	10	0	0	10
	12.3.13	87	81	0.5	73	0	0	0	0	0	0	0	73	2	0.4	75
	12.5.9	45	23	2	9	0	0	0	7	0	6	0	21	0	0	21
	12.5.10	7	6	0.1	5	0	0	0	0	0	0	0	5	0	0	5
	12.8.19	14	14	0	14	0	0	0	0	0	0	0	14	0	0	14
	12.9-10.22	11	3	3	0	0	2	1	0	0	0	0	4	0	0	4
	Sub-total	**241**	**196**	**7**	**148**	**0.1**	**8**	**1**	**7**	**0**	**6**	**0**	**170**	**2**	**0.4**	**172**
Melaleuca	12.2.7	189	100	38	28	0.1	41	21	0	0	0	0	90	0.7	0	91
	12.3.4	26	3	10		0	0.7	7	0	0	0	0	7	0	0	7
	12.3.5	128	98	5	60	0	0.5	2	0	0	0	0	62	3	0.1	65
	12.3.6	0.8	0.6	0.0	0.3	0	0	0	0	0	0	0	0	0	0	0
	Sub-total	**344**	**202**	**54**	**88**	**0.1**	**43**	**29**	**0**	**0**	**0**	**0**	**159**	**4**	**0.1**	**163**
Eucalypt	12.2.6	4	4	0	0	0	3	0	0	0	0	0	3	0	0	3
	12.3.14a	37	28	3	4	0	0	0	3	0	2	0	9	4	0.0	13
	12.5.3	424	83	152	32	0	0.7	26	7	0	4	0	70	7	0.4	77
	12.5.4	31	25	4	18	0.3	0	0	0	0	0	0	18	0	0	18
	12.5.6c	5	5	0.2	2	0	0	0	0	0	0	0	2	1	0	3
	12.8.20	39	39	0	38	0	0	0	0	0	0	0	38	0	0	38
	12.9-10.4	127	20	24	0	0.1	3	1	0	0	0.1	0.6	5	0	0	5
	12.9-10.14	4	0	0.9	0	0	0	0	0	0	0	0	0	0	0	0
	Sub-total	**671**	**204**	**183**	**95**	**0.4**	**7**	**27**	**9.5**	**0**	**5.8**	**0.6**	**145**	**13**	**0.4**	**158**
Totals		**1,275**	**622**	**243**	**350**	**0.7**	**57**	**57**	**16**	**0**	**12**	**0.6**	**493**	**18**	**0.8**	**512**

*Gain in extent as a result of regional ecosystems reclassification

Please note: All extent figures have been rounded to whole numbers, except where extent values are less than 10,000m^2 (1ha). These values are reported to two decimal places to ensure representation of their limited extents

Table I2: Breakdown of the Noosa River catchment reserve tenure, type and relative native vegetation extents

Sector	Reserve type	Number of Reserves	Number of Lots	Total area (ha)	Remnant vegetation extent (ha)	Non-remnant vegetation extent (ha)	Native vegetation extent (ha)
State	National Park	1	1	351	350	1	351
	Conservation Park	0	0	0	0	0	0
Sub-totals		**1**	**1**	**351**	**350**	**1**	**351**
Council	Nature Refuge	0	0	0	0	0	0
	Freehold	0	0	0	0	0	0
	Trustee	1	11	84	25	52	77
	Nominee under trust	3	4	15	11	4	15
	Other	1	-	23	21	1	22
Sub-totals		**5**	**15**	**122**	**57**	**57**	**114**
Private	Nature Refuge	1	1	16	16	0	16
	Voluntary Covenants	-	1	11	11	0	11
	Development Covenants	-	39	2	0	1	1
	Land for Wildlife	-	4	21	18	1	19
Sub-totals		**1**	**45**	**50**	**46**	**2**	**47**
Total		**7**	**61**	**524**	**453**	**59**	**513**

Native vegetation

- The Sunshine Coast Council area portion of the Noosa River catchment is covered in approximately 67% of native vegetation of which 72% remnant vegetation and 28% of non-remnant vegetation.

Table I3: Summary of vegetation extents in the Noosa River catchment

	Vegetation extent		
	Urban* extent (ha)	**Rural extent (ha)**	**Total extent (ha)**
Catchment	258	1,017	1,275
Remnant vegetation	69	553	622
Non-remnant vegetation	40	203	243
Combined remnant and non-remnant vegetation	109	756	865
No vegetation	149	261	410

*Urban includes Urban Footprint and Rural Living Areas as defined by the ShapingSEQ SEQRP 2017

Vegetation communities

The Sunshine Coast Council area portion of the Noosa River catchment contains 622 hectares of remnant vegetation comprising 21 regional ecosystems with representation in foredune, heath and wallum, melaleuca/casuarina and eucalypt vegetation communities

Table I4: Summary of vegetation communities in the Noosa River catchment

	Regional ecosystems					Non-remnant
	Pre-clearing number	Pre-clearing extent (ha)	Current number	Current extent (ha)	Loss (%)	Current extent (ha)
Catchment	22	1,275	21	622	51	243
Foredune	2	19	2	19	0	-
Heath Wallum	8	241	8	196	19	7
Melaleuca Casuarina	4	344	4	202	41	54
Eucalypt	8	671	7	204	70	182

Conservation Estate

The Sunshine Coast Council area's portion of the Noosa River catchment protects more than 300 hectares of remnant and non-remnant vegetation through both state and council protected areas, Nature Refuges and vegetation protection covenants. While the Land for wildlife program helps to conserve 34 hectares of habitat (see Table 3.47 and Appendix J).

Table I5 summary of vegetation in the Noosa River catchment's conservation estate

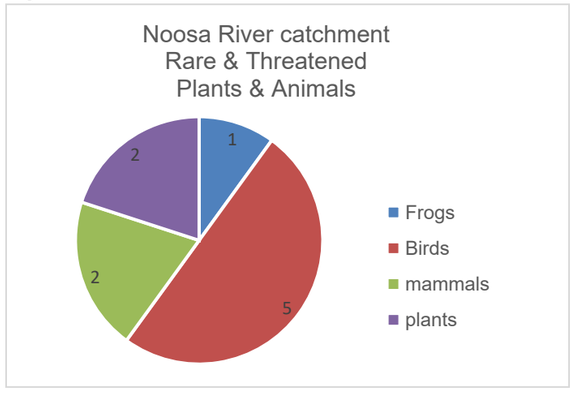
Sector	Number of Reserves or Lots	Total Area (ha)	Remnant vegetation extent (ha)	Non-remnant vegetation extent (ha)	Native vegetation extent (ha)
State	1	351	350	1	351
Council (incl NR)	5	122	57	57	114
Nature Refuge	1	16	16	0	16
Covenants	2	13	11	1	12
Land for Wildlife	4	21	18	1	19
Total	13	523	452	60	512

Approximately 240 hectares of the Noosa National Park lies within this portion of Sunshine Coast Council area and contains a number of locally and regionally important vegetation communities including the endangered and poorly conserved scribbly gum forests (12.5.3) and associated heath and wallum communities. This section of the Noosa National Park constitutes 80% of the protected areas within the catchment portion (see Table 3.47).

Flora and Fauna

The Sunshine Coast Council area's portion of the Noosa River catchment contains limited records that includes, 2 flora and 8 fauna threatened species (see Appendix B).

Figure I1



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