Sunshine Coast COUNCIL

Triunia Environmental Reserve Management Plan

2016 - 2026

Your Environment Levy in action

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Acknowledgements

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Disclaimer

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Contents

1. Executive Summary

Triunia Environmental Reserve is an important local biodiversity hotspot located in west Woombye on the eastern foothills of the Maleny-Mapleton plateau. The reserve is comprised of several land parcels that are managed by Sunshine Coast Council (Council) under freehold and trustee tenure agreements. In 2013, a substantial expansion of habitat was made possible under Council's Environment Levy land acquisition program, bringing the total reserve area to 105.56 hectares.

The management intent for Triunia Environmental Reserve is to provide a conservation area with the highest level of protection for the rich diversity of significant[1] species and threatened vegetation communities occurring at the site.

The reserve comprises a mixture of wet and dry sclerophyll and rainforest vegetation on mostly steep, hilly terrain. Five regional ecosystems (RE) have been mapped over the site by the Queensland Herbarium, including RE 12.9-10.14 (Tall to very tall Eucalypt dominant ecotone forest)—one of the most poorly conserved REs on the Sunshine Coast, and RE 12.12.1 and 12.12.16 that are representative of Lowland Rainforest of subtropical Australia—a Critically Endangered ecological community under the Environment Protection and Biodiversity Conservation Act 1999.

There are also five tributaries flowing across the site into Petrie Creek—providing important microhabitats for biodiversity.

At least 516 native plants species occur at the reserve, including 41 significant species. 12 of these are known to only occur in Southeast Queensland or the Sunshine Coast. There is also habitat for at least 141 native fauna species, including 29 significant species. The presence of at least 15 species of migratory bird suggests that the reserve also functions as an important stop over or resting point during migrations.

While much of the site exhibits a high level of resilience, recruitment and structural diversity—previous land use and fire management, and activities in the surrounding landscape are currently impacting on vegetation condition. Adopting a collaborative approach to management, which promotes partnerships with landowners, community groups, research institutions and Queensland Parks and Wildlife (who manage the adjoining Triunia National Park), is therefore imperative to protect the reserve's biodiversity values.

Since 2001, Council's Natural Areas Management team have coordinated a range of establishment works to protect and restore the reserve's inherent biodiversity values and ecological resilience. These include:

- Environment Levy signage and locked access gates installed 2012 / 2013
- Preliminary fauna and flora assessments completed 2015
- Fire trail and access trail upgraded 2012
- Weed control program targeting Restricted Invasive plants impacting on significant fauna and flora species habitat
- Significant species mapping
- Experimental, low intensity burn to determine Endangered *Zieria bifida* plant response to fire
- LFW partnerships open day held on site 2016.

Future management of this reserve will be guided by this management plan, supporting technical documents and the Environmental Reserves Master Management Plan (2017-2027).

[1]Flora or fauna species listed as Threatened, Marine or Migratory under the EPBC Act; Endangered, Vulnerable or Near Threatened (EVNT) or Special Least Concern under the *Nature Conservation Act 1992;* or Locally Significant under the Sunshine Coast Biodiversity Strategy 2010 - 2020.

2. Acknowledgements

Sunshine Coast Council acknowledges the establishment and management funding contributions received for this project under the Sunshine Coast Council Environment Levy Land Acquisition and Establishment Program.

Council also wishes to thank Marg and Ed Kruger and staff at the Nambour Museum for contributing historical records pertaining to early agriculture and landuses in the West Woombye region; and Marc Russell for accompanying the Environmental Operations team to identify Threatened Ecological Communities and significant species at the reserve.

Cover photo: Triunia Environmental Reserve (Carruthers Road section) photographed from the fire trail.

3. Introduction

Sunshine Coast Council's Corporate Plan, (2014-2019) identifies 'an enviable lifestyle and environment' as a corporate goal to achieving its vision to be "Australia's most sustainable region – vibrant, green, diverse". In order to achieve this, Council has endorsed a range of strategic directions and principles under the Biodiversity Strategy 2010-2020 which includes "expand, protect and enhance Council conservation areas". This is supported through the Environment Levy Land Acquisition Program.

3.1 Purpose of the Management Plan

This Management Plan provides an adaptive management framework which has been developed under nationally recognised guidelines and principles of protected area management (see **Appendix 1**).

The purpose of this Management Plan is to describe the reserve's ecological, cultural, social and economic values and express the associated management actions required to maintain or enhance these values.

This Management Plan is subject to a 10 year review schedule underpinned by the framework of actions, relevant monitoring and evaluation strategies, and performance indicators described in this plan.

3.2 Management Intent for the reserve

The management intent for this reserve is to provide a conservation area with the highest level of protection and restricted use in order to protect the rich diversity of significant species known to occur at the site, and to protect threatened vegetation communities that provides important habitat for many of these species.

4. Description of the reserve

4.1 Location and description

Triunia Environmental Reserve is located in West Woombye between the townships of Mapleton (4.6km northwest), Nambour (5.5km northeast) Woombye (5.6km east) and Montville (3.6km SSE) (see **Appendix 2a**).

The Reserve is composed of six allotments that cover a total area of 105.56 hectare (see **Figure 1)**. The reserve is divided into eastern and western sections that are separated by Blackall Range Road and Triunia National Park.

The eastern section comprises:

- Lot 5 and 8 on RP26985 (Council freehold properties purchased under the Environment Levy land acquisition program)
- Lot 6 on SP194366 (Council trustee)
- Lot 10 on SP172899 (previously called Triunia [Scientific] Conservation Area) (Council freehold)

The western section (previously Dulong Rd Bush Conservation Reserve) comprises:

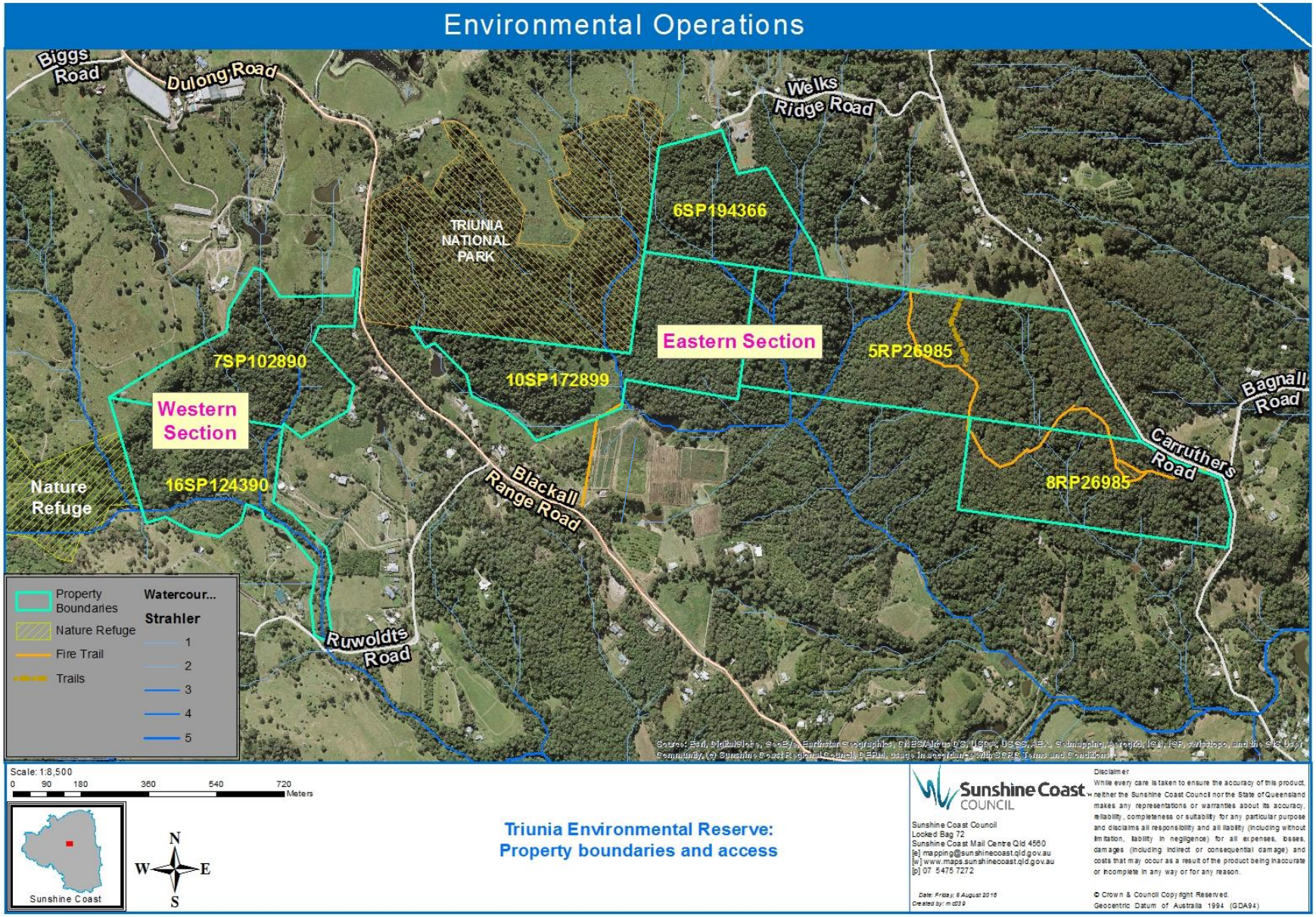
- Lot 7 on SP102890 (Council trustee)
- Lot 16 on SP124390 (Council trustee)

The Reserve area is situated on an escarpment that flanks the Maleny - Mapleton Plateau (Blackall Range). The complex site ranges from 50 to 220 metres above sea level and features a diversity of landforms, including steep rocky hillslopes, deep gullylines, ridges and spurs (see **Appendix 2b**).

4.1.1 Access

Current access to the eastern section is obtained via Welks Ridge Rd and Carruthers Rd whereas access to the western section is obtained via Ruwoldts Rd and Blackall Range Rd. A fire trail and linking access trail off Carruthers Rd are the only maintained trails at the reserve (see **Figure 1**). Access is limited across the reserve and supports the restricted use category assigned to this reserve.

Figure 1. Landscape Features at Triunia Environmental Reserve



4.1.2 Catchment and Landscape Context

Located at the headwaters of the Maroochy Catchment, the reserve covers two watersheds that are separated by the Blackall Range Road ridgeline. Numerous rocky drainage lines and ephemeral watercourses traverse the site and converge into 5 Stream Order (SO) 3 watercourses that drain into Petrie Creek 0.5 - 1 kilometre south of the reserve—eventually reaching the Maroochy River 19km east of the Reserve (see **Appendix 2c**).

Triunia National Park protects 33.93 hectares of adjoining bushland—enhancing connectivity between the eastern and western sections. A Nature Refuge protects 24.91 hectares of bushland adjacent to Lot 16 on SP124390—enhancing connectivity to the west (see **Figure 1**).

The surrounding landscape is dominated by rural and rural residential properties, comprising a mixture of pasture land, bushland, residential dwellings, and small-scale agriculture and horticulture enterprises.

As of 2016, there were 7 registered Land for Wildlife (LFW) properties adjoining the reserve, and numerous registered properties scattered throughout the broader landscape.

4.1.3 Geology and soils

The reserve is identified under the Queensland Government regional ecosystem (RE) mapping (v8) as containing Land Zone 12, which is found across the majority of the site and Land Zone 9-10, which is found on the Carruthers Rd ridgeline (see **Appendix 2d**). Wilson & Taylor (2012), describe the Land Zones as follows:

Land Zone 12: Mesozoic to Proterozoic Igneous rocks, forming ranges, hills and lowlands.

Land Zone 9-10: Cainozoic and Mesozoic coarse grained quartzose sedimentary rocks associated with outcropping fine grained sedimentary rocks.

Soils are predominantly rich, fertile, volcanic soils known as ferrosols. The boundary along Carruthers Rd features less fertile Kandosols derived from sandstone (Coyle 2013).

4.2 History and land use

Aboriginal people are thought to have settled in the Sunshine Coast as many as 20,000 years prior to European settlement (SCC 2016a). Mapping of tribal and clan divisions in the region indicate that the present day Triunia Environmental Reserve was located within the homeland boundaries of the Nalbo tribe (Kerkhove 1986, SCC 2016b). The reserve area is currently mapped within the native title application area of Kabi Kabi First Nation and native title determination area of the Jinibara People (see section 6.3.1 below).

The region was of great spiritual importance for indigenous groups between Bundaberg, Grafton, and as far west as St George—who would gather to feast on Bunya Pine nuts in the area now inundated by Lake Baroon—approximately 5 km southeast of the reserve.

In the late 1850s, the 'Bunya Proclamation', which reserved the region for aboriginal people, was revoked by the new Queensland Government. The region was opened for European settlement and initially attracted settlers who were drawn by the high quality timber.

Trees were felled and logs were drawn by bullock teams to the Maroochy River, Eudlo and Petrie Creeks, where they were rafted to the Maroochy River mouth for transport to a Brisbane sawmill. By the 1890's, logs were being sawn locally prior to shipment to Brisbane.

Second generation local resident Marg Kruger recalls that the present day Triunia Environmental Reserve was heavily logged in the past (pers. comm., 27 May 2016). Evidence of historical logging at the site includes numerous cut tree stumps, springboard notches, logging trails and 2 log loading ramps. Scattered, large trees remaining on site and the absence of large clearings in the site interior suggest that logging was selective in these areas.

The first agricultural activity in the region was the cultivation of bananas in the Mapleton, Flaxton and Palmwoods districts. By the early 1900's, much of the area between Nambour, Mapleton, and Petrie Creek was being cultivated with sugar cane, citrus and other fruit crops, or was under grass for grazing.

Marg Kruger recalls that her father, Charles 'Val' Downes purchased a vegetated property adjoining the present day reserve in 1936 and was required to cut timber using hand tools to clear land for bananas, pineapples and later citrus, beans and cucumber crops (pers. comm., 27 May 2016). This historical account is supported by **Figure 2a** and **Appendix 3** that shows much of the clearing in the broader landscape was carried out prior to 1958.

Pineapples and bananas being grown by Charles 'Val' Downes at adjoining property (early 1940s)

Within the reserve, the northern section of Lot 6 on SP194366 and northwest boundary of the western section were non-selectively cleared prior to 1958 (see **Figure 2a**). Non-remnant vegetation at Lot 10 on SP172899 is known to have been historically cultivated for stone fruit, bananas and other orchard crops (see **Figure 3**).

Today, grazing, agriculture and horticulture enterprises remain scattered throughout the landscape, although the landscape is being gradually subdivided for rural residential acreages and housing (see **Figure 1** and **2**).

The Triunia National Park site was previously a Council-owned Bushland Park before it was officially handed over to the Queensland Government for the purposes of a National Park in 1994.

The Triunia National Park Management Plan was developed in 2011 and highlights the importance of regular liaison with Council regarding shared natural resource issues, including habitat restoration along common boundaries, pest and fire management, and collaborative scientific research and monitoring programs.

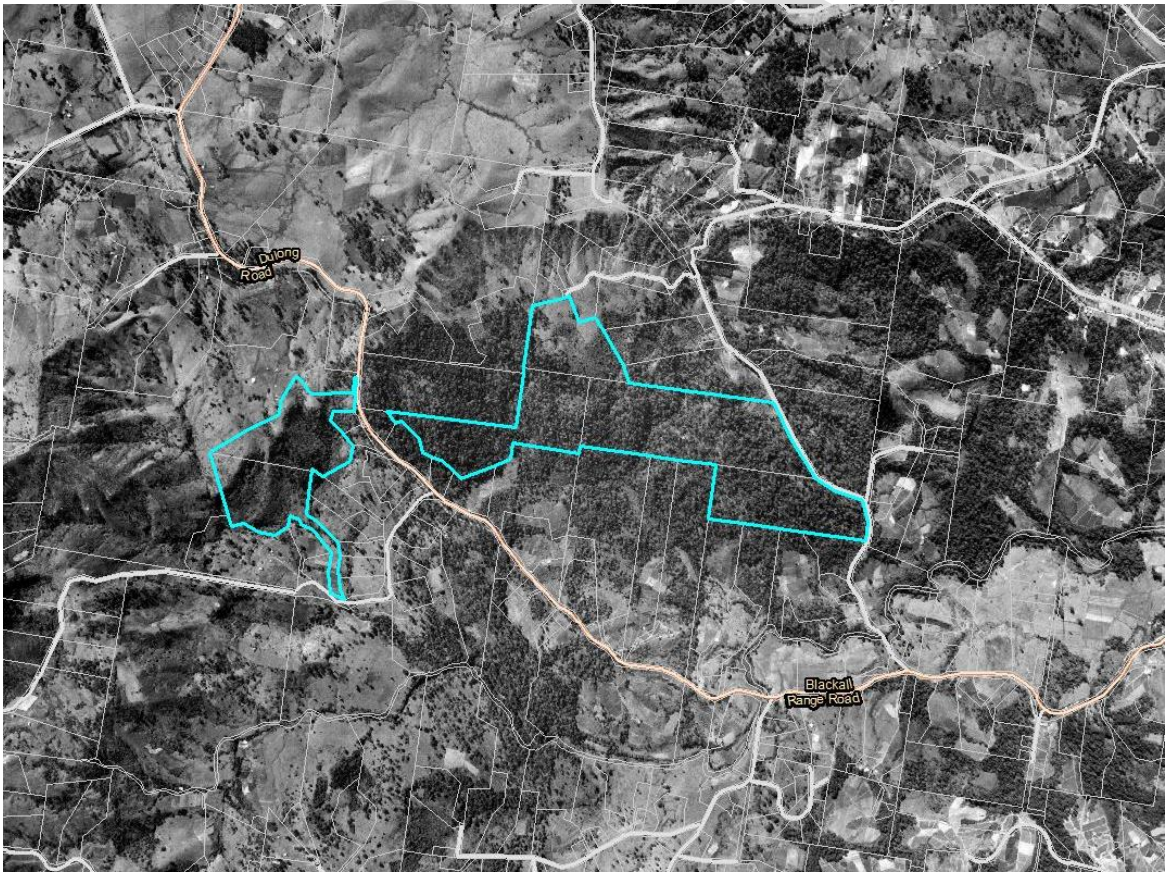
The history of Council management began with Queensland Government approval for Council to act as Trustee over the eastern section in 2001, followed by the purchase of Lot 10 on SP172899 in 2005 and approval for Council to act as Trustee over Lot 6 on SP194366 in 2008. The most recent acquisition of Lot 5 and 8 on RP26985 occurred under the Environment Levy land acquisition program in 2012.

In September 2016, the western section, Lot 10 on SP172899 and Lot 6 on SP194366 was being managed by the Natural Areas Environmental Operations team whereas Lot 5 and 8 on RP26985 was managed by the Natural Areas Operational Management team.

Charles 'Val' Downes (right) and Fred Schmidt cutting timber on property adjoining reserve (late 1930s)

Blackall Range Road (bottom of valley) in early 1940s

Figure 2: Aerial images showing land use history



a) 1958

5. Establishment Works

All properties purchased under the Environment Levy Land Acquisition Program receive a 3-5 year annual allocation of funding as a percentage of the purchase price from the Environment Levy budget for establishment works. This initial injection of funds covers the the establishment costs, planning reports and prepares the reserve for future on-going maintenance.

Establishment works completed for Triunia Environmental Reserve to date are described in **Table 1** below.

From 2016, the reserve will be managed by the Natural Areas Operational Management Team, guided by this Management Plan and supporting technical documents which are also summarised in this plan:

- Triunia Environmental Reserve (Carruthers Road Section) Rehabilitation Works Plan (Coyle 2013)
- Bushland Operational Assessments (BOA) (BTE 2012)
- Triunia (Scientific) Conservation Area: Statement of Management Intent (Maroochy Council 2007)
- Fauna and flora assessments (see **Section 6** below)

In addition to this, the Environmental Reserves Master Management Plan (2016-2026) provides an overarching management framework to guide priorities and review schedules for management and operational activities.

5.1 Planning and Maintenance

The on-going planning and maintenance requirements of Triunia Environmental Reserve are guided by Council's Service Level Reserve Score (rank 1-3 for each biodiversity and recreation score). The scoring matrix includes a biodiversity and a recreational score for each reserve based on a range of criteria including size, connectivity, significant species, biodiversity and recreational use.

The biodiversity score for Triunia Environmental Reserve is B1. **Table 2** and **3** list service level requirements under this category. There is no recreational service requirement for this reserve and therefore no recreational score.

Table 1: Status of establishment works at Triunia Environmental Reserve.

Establishment Activity	Description	Status
Condition Assessment	Commission the preparation of a resilience based condition assessment to guide management planning.	BOA completed **2007** (Western section) and **2012** (all sections)
Regeneration Works Plan	Commission the preparation of a bush Regeneration works plan	RWP completed for Lot 5 and 8 on RP36985 2**013**
Weed Management	According to the works plan all high priority areas are targeted for weed removal **Western section**: watercourse running north of Ruwoldts Rd **Eastern section:** disturbed patches at northern boundary of Lot 6 on SP194366 (upstream from biodiviersity hotspots). Works at *Zieria bifida* population adjacent Carruthers Rd and at Koala habitat along access track and along ridges.	Annual works plan implemented in line with service level for this reserve **Western section** commenced **2007** **Eastern section** Commenced **2008** at Lot 6 on SP194366 and in **2012** at Lot 5 and 8 on RP26985

Trail Maintenance	Development and maintenance of access and fire trails	Trails upgraded, and mapped on Council open space layer for management and maintenance scheduling. Completed **2012**
Sediment and Erosion Control	Monitor and mitigate erosion along fire and access trails. Stabilise gullylines that intersect fire trail. Prevent further erosion and impedement to vehicle access.	Rock chute constructed to stablise gullyline along fire trail. Completed **2012.**
Access Gate and fencing	Install access gate at entrance to fire trail Additional fencing currently not required for this site (Illegal vehicle access and associated impacts negligible)	Locked access gate installed **2012**
Revegetation	Potential revegetation site identified and maintained	Maintained as of **2016**
Signage	Install reserve signage at access points Install Illegal Dumping signage at popular dumping sites	Reserve signage installed **2013** Illegal Dumping signage installed at Welks Ridge Rd
Tenure Protection	SCC Planning Scheme 2014 (statutory) identifies Environmental Reserves, Riparian Protection Areas, Wetlands and Native Vegetation Areas as map overlays	Current
Values assessment	Commission a flora and a fauna assessment; Undertake Cultural heritage protected matters search and follow up as required with cultural heritage assessment	Flora surveys completed **1989, 2007 and 2012**; fauna survey completed **2010, 2014** and **2015**; Cultural heritage protected matters search completed **2016.**
Hazards removed	Remove overhanging boundary trees, dead trees and tree limbs	Safety pruning of dead tree next to gate entrance **2014**. Tree mainenance ongoing.

Table 2*:* Triunia Environmental Reserve Service Level category B1 – District Reserve

Category	MP	SMI	BOA	Flora Assessment .	Fauna Assessment	FMP	RWP
*B1	✓	✓	✓	✓	✓	✓	✓
Frequency	*Frequency will be determined as an outcome of the Natural Areas Master Management Plan (2016-2026)*						*Annual*
Current Status	*Complete 2016*	*Triunia (Scientific) Conservation Area: Complete 2007*	*Complete 2007, 2012*	*Complete 2012*	*Complete 2015*	*Scheduled 2016*	*Lot 5 and 8 on RP36985 : Complete 2013*

**B# = Biodiversity Class.*

Note: The above table provides an overview of the required planning documentation. SMI: Statement of Management Intent, BOA: Bushland Operational Assessment; FMP: Fire Management Plan; RWP: Regeneration Works Plan

Table 3. Maintenance Service Levels

Category	B1
Inspections	monthly
Weed management	monthly
Revegetation	annual
Planned burning – if required	as per FMP
Fire trail management drainage / surface maintenance	annual
Fire trail slashing	1-6/yr
Fuel reduced zones vegetation management	1-6/yr
Tree management	annual
Urgent & hazardous matter arising	24-48hrs

6. Reserve Values

6.1 Ecological Values

Floristic values described below have been compiled from the following sources:

- Triunia Environmental Reserve (Western section) (Moran 1989)
- Triunia (Scientific) Conservation Area vegetation survey (Thomas 2007)
- BTE Flora Assessment Triunia ER (Lot 5 & 8 on RP26985) (Shaw 2012)
- Preliminary flora surveys - Triunia Reserve and Ruwoldts Rd (Russell 2012, 2016)
- Management Considerations dataset (SCC 2012)
- BOA (BTE 2012)

6.1.1 Vegetation communities

Detailed ground truthing at Lot 10 on SP172899 and Lot 5 and 8 on RP26985 revealed minor discrepancies between Queensland Government's RE mapping and observed vegetation community types and boundary delineations (see **Appendix 2d** and **Figure 3**).

Mapped RE 12.12.1, 12.12.15, 12.12.16 and component vegetation communities of mapped RE 12.9-10.14, 12.12.15 and 12.12.2 were all verified during groundtruthing, whereas RE12.3.2 was declared as absent (See **Table 4**). Similar to Queensland Government mapping, ground truthing at Lot 5 and 8 on RP36985 confirmed 2 small areas of High value regrowth (HVR) containing an Of Concern RE and 3 small areas of HVR containing a Least Concern RE (see **Appendix 2e**).

The listing advice for Lowland Rainforest of Subtropical Australia (LRS) recognises RE 12.12.1 and 12.12.16 as representative of the LRS ecological community—where the LRS description, key diagnosic characteristics and condtion thresholds are met. LRS is 'Critically Endangered' under the EPBC Act. RE12.12.1 is also listed as Of Concern under the Queensland *Vegetation Management Act 1999* (VM ACT) (See **Appendix 2d - 2f**). The two rainforest communities support important biodiversity hotspots at the site (Coyle 2013).

The reserve supports regional ecosystems that are diagnostic of 'Lowland Rainforest of Sub-tropical Australia'—a Critically Endangered ecological community under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*—and a regional ecosystem that is listed as Of Concern under the Queensland *Vegetation Management Act 1999.*

The Sunshine Coast Council Biodiversity Report Card (2015) provides an assessment of the current status of REs within the Sunshine Coast Local Government Area (SCLGA). The report shows that RE 12.9-10.14a is among the most poorly conserved REs in the SCLGA—with only 4.7% of the pre-clearing extent protected in the Conservation Estate (see **Appendix 4**).

3 regional ecosystems are 'Target REs' for protection and conservation under the Sunshine Coast Council Biodiversity Report Card (2015) since they are representative of a Commonwealth Threatened Ecological Community or they are poorly conserved in the region or state.

Management Action

- Map observed RE boundaries at western section and Lot 10 on SP172899 and Lot 6 on SP194366 of the eastern section
- Submit application to Queensland Government to ammend RE mapping for reserve through a Property Map of Assessable Vegetation (PMAV)
- Map the extent of Lowland Rainforest of Sub-tropical Australia (LRS) at the reserve according to observed regional ecosystems, and descriptions, key diagnosic characteristics and condtion thresholds in the Commonwealth Listing Advice for LRS

Figure 3: Mapped and observed regional ecosystems at Triunia Environmental Reserve

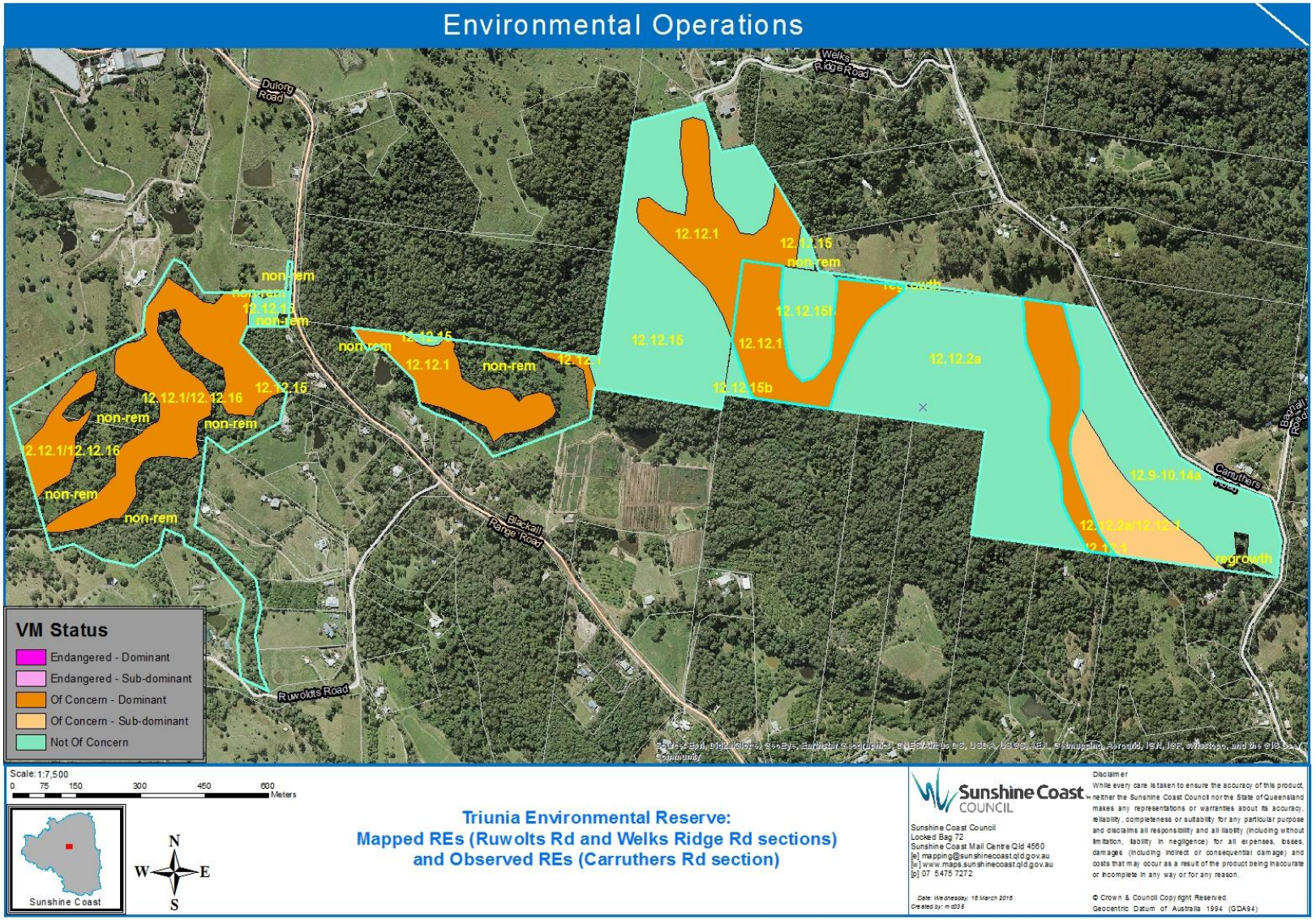


Table 4: Regional ecosystems of Triunia Environmental Reserve

Vegetation Community	RE	VM ACT status	Description	Distribution in the reserve
Rainforest	12.12.1	Of Concern	Tall to very tall notophyll vine forest with mixed species canopy, abundant *Archontophoenix cunninghamiana* in leveller areas	Observed dominating steep gullies in Lot 5 and 8 on RP36985 and Lot 10 on SP172899. Mapped in association with steep gullies across the reserve
	12.12.16	Least Concern	Notophyll vine forest on Mesozoic to Proterozoic igneous rocks	Mapped by QLD Government as part of Composite RE 12.12.1/12.12.16 (85/15) in western section. Associated with slopes and valleys. Observed dominating slopes mapped as RE 12.12.1/12.12.16 at north / northeast extent of western section. Community disturbed in areas
Eucalypt	12.9-10.14a	Of concern	Tall to very tall ecotone forest with *Eucalyptus pilularis, SyNC Actrpia glomulifera, Corymbia intermedia* and *E. grandis* dominants.	Observed along eastern site boundary of Lot 5 and 8 on RP36985
	12.12.2a	Least Concern	Tall to very tall ecotone forest with *Eucalyptus pilularis, S. glomulifera, C. intermedia* & *E. grandis* dominants.	Observed in central and southeast portions of Lot 5 and 8 on RP36985
	12.12.15	Least concern	*C. intermedia +/- E. propinqua, E. siderophloia*, *E. microcorys, Lophostemon confertus* open forest on Mesozoic to Proterozoic igneous rocks.	Observed on ridges and slopes at Lot 10 on SP172899. Mapped as dominating ridges and slopes at Lot 6 on SP194366 and Lot 10 on SP172899, and at NE extent of western section.
	12.12.15a	Least concern	*L. confertus, E. microcorys* and *E. propinqua* open-forest often with vine forest understorey ('wet sclerophyll'). Occurs in gullies and exposed ridges on Mesozoic to Proterozoic igneous rocks often amongst vine forest.	Observed at Lot 10 on SP172899

	12.12.15b	Least concern	Tall to very tall ecotone forest with *Eucalyptus pilularis, SyNC Actrpia glomulifera, Corymbia intermedia* and *Eucalyptus grandis* dominants. Notophyll vine forest canopy species as emergent's. *Schizomeria ovata* is a widespread dominant.	Observed on ridges at western extent of Lot 5 and 8 on RP36985
Rainforest / Eucalypt	12.12.1/ 12.12.2a	Of Concern	Tall to very tall ecotone forest with *Eucalyptus pilularis, S. glomulifera, Corymbia intermedia & E. grandis* dominants. Notophyll vine forest canopy species as emergent's.	Observed near eastern boundary of Lot 5 and 8 on RP36985 at ecotone between rainforest and eucalypt communities

6.1.2 Flora

Triunia Environmental Reserve is a hot spot for plant diversity. At least 516 native plant species have been recorded, making this site one the most species-rich Environmental Reserves on the Sunshine Coast.

Appendix 5 lists all flora species found at the reserve.

The area also supports a rich diversity of significant species including 19 species listed as Endangered, Vulnerable or Near Threatened under the *Environment Protection and Biodiversity Conservation Act 1999* and / or the Queensland *Nature Conservation Act 1992*.

An additional 22 plant species are classified as Locally Significant Flora under the Sunshine Coast Biodiversity Strategy 2010-2020 (SCBS) (see **Table 5**).

7 plant species are known to occur only in SEQ and a further 5 are known to occur only in the Sunshine Coast. *Zieria bifida* is endemic to Dulong and Towen Mountain. Although not declared as Locally Significant under the SCBS, Brush Coral Tree has only been recorded at only 1 other location (near Kenilworth) in the SCLGA.

An inventory of flora species was also compiled for the adjoining Triunia National Park (Bean *et al*. 1989 - 2015). The inventory includes 22 additional species, including 17 native and 5 weed species that are not recorded at Triunia Environmental Reserve. No additional significant flora species are recorded at Triunia National Park (see **Appendix 6**).

Furthermore, the EPBC Act Protected Matters Search returned 8 additional Threatened flora species that may potentially occur or are likely to occur within 3 km of the reserve (see **Appendix 7**). The Queensland Government Wildlife Online Search returned no records of additional EVNT flora species occurring within 3km of the reserve.

Management Actions

- GPS locate all significant species in reserve and adjoining road reserves
- Discuss with adjoining landholders possibility of GPS locating Signficant flora species on their properties
- Submit biodiversity data to a secure, reputable public database such as Wildnet
- Ensure Council managers and contractors are aware of the species on-site and their requirements for survival
- Monitor existing populations of Signficant fauna and flora to detect changes in population size

Management Actions

- Develop a database of fauna and flora species occurring at Sunshine Coast reserves that enables comparisons of diversity between reserves
- Undertaken likelihood of occurrence assessment for significant species that may potentially occur at the site. Undertake targeted searches for species with a moderate to high potential to occur

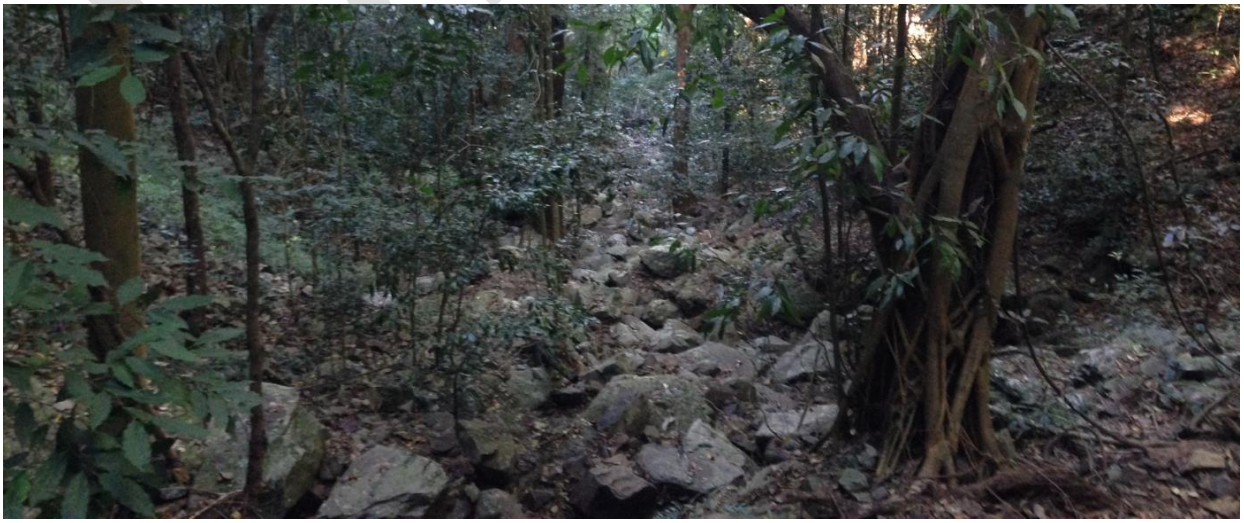
Buderim Holly (Image G. Morgan)

Table 5: Significant flora species found at Triunia Environmental Reserve

Common Name	Scientific Name	Status (EPBC /NC ACT/SCBS)
Alangium villosum ssp polyosmoides	Canary Muskheart	LSF
Araucaria bidwillii	Bunya Pine	LSF
Argyrodendron actinophyllum	Mackay Oak	LSF
Austromyrtus glabra	Narrow_leaved Midyim	LSF (SEQ)
Balanophora fungosa	Fungus Root	LSF
Bosistoa medicinalis	Eumundi Bosistoa	LSF
Bosistoa transversa	Three-Leaved Bosistoa	V/
Carronia multisepalea	Southern Carronia	LSF
Choricarpia subargentea	Giant Ironwood	LSF
Corynocarpus rupestris ssp. *arborescens*	Southern Corynocarpus	/ V / LSF
Cryptocarya onoprienkoana		LSF
Diospyros ellipticifolius	Shiny Ebony	LSF
Erythrina numerosa#	Brush Coral Tree	
Floydia praealta	Ball Nut	V / V / LSF
Gossia inophloia (syn Austromyrtus)	Thread-Barked Myrtle	/ NT / LSF (SEQ)
Graptophyllum reticulatum	Buderim Holly	E / E / LSF (SC)
Grevillea hilliana	White Yiel Yiel	LSF
Guioa acutifolia	Northern Guioa	LSF
Jasminum jenniae	Endangered Jasmine	E / LSF (SEQ)
Litsea leefeana	Northern Brown Bolly Gum	LSF
Macadamia integrifolia	Queensland Nut	V / V / LSF

Macadamia ternifolia	Gympie Nut	V / V / LSF (SC)
macadamia tetraphyla	Macadamia Nut	V / V
Mallotus megadontus	Toothed Kamala	/ V / LSF (SEQ)
Mallotus repandus	Creepy Mallotus	LSF
Marsdenia coronata	Vulnerable Hairy Milk Vine	V / LSF (SEQ)
*Medicosma sp. Mt. Mellum***		LSF (SC)
Mischocarpus australis	Red Pear Fruit	LSF
Myrsine subsessilis ssp. *subsessilis*	Red Muttonwood	LSF
Neisosperma poweri	Milkbush	LSF
Nothoalsomitra suberosa	Corky Cucumber	/ NT / LSF (SEQ)
Pararistolochia praevenosa	Birdwing Butterfly Vine	/ NT / LSF
Parsonsia largiflorens	Large-flowered Silkpod	/ E / LSF
Planchonella eerwah (syn *Pouteria)*	Endangered Black Plum	E / E / LSF (SEQ)
Polyosma cunninghamii	Featherwood	LSF
Quintinia verdonii	Grey Possumwood	LSF
Romnalda strobilacea	Vulnerable Shade Lily	V / V / LSF (SEQ)
Sarcochilus fitzgeraldii	Ravine Orchid	V / E /
Senna acclinis	Rare Brush Senna	LSF
Sloanea australis ssp. *australis*	Maiden's Blush	LSF
Triunia robusta	Northern Spicebush	E / E / LSF (SC mostly)
Zieria bifida	Brolga Park Zieria	E / E / LSF

E = Endangered species; V = Vulnerable species; NT = Near Threatened species; LSF = Locally Significant Flora under the SCBS; **Species possibly present but not reliably identified; SEQ = Endemic to South East Queensland; SC = Endemic to Sunshine Coast; # Noteworthy - Only one other specimen recorded in Sunshine Coast LGA (near Kenilworth)



Rocky gullylines associated with species-rich vegetation communities

6.1.3 Fauna

Fauna values described below have been compiled from the following sources:

- Carruther's Rd Section - Preliminary Assessment of Terrestrial Mammals and Reptiles (Fox 2015)
- Frog habitat assessment and survey results for Triunia Environmental Reserve (Meyer 2015)
- Camera Trap Survey (Morgan 2015)
- Faunawatch Fauna Survey Report (Burnett *et al.* 2010)
- SCC Koala survey (Woosnam 2014)
- Management Considerations GIS dataset (SCC 2012)

Fauna assessments identified 137 native vertebrate fauna species, including 29 significant fauna that are listed under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*, Queensland *Nature Conservation Act 1992* and / or the Sunshine Coast Biodiversity Strategy 2010-2020.

The following numbers of species in each of the major terrestrial vertebrate fauna groups were identified:

- 7 Amphibian
- 88 bird species
- 13 ground dwelling and arboreal mammal species
- 13 microbat species
- 13 reptile species
- 3 fish species

A detailed inventory of fauna is provided in **Appendix 8**.

Field surveys also recorded 4 invertebrate fauna species, including 3 crustaceans and 1 insect.

An additional 10 microbat species were recorded however they could not be reliably identified.

3 additional mammal species were recorded but could not be reliably identified to the species type (genus only).

29 significant fauna species are recorded at the reserve, including 3 species listed as Vulnerable under the EPBC Act and / or NC ACT, 1 Special Least Concern species under the Queensland *Nature Conservation Act 1992* (NC ACT), 15 Marine and Migratory birds and 10 Locally Significant Fauna under the SCBS (see **Table 6**). This suggests that the reserve is an important landscape feature recognised as a stop over or resting point for migratory birds.

Triunia Environmental Reserve also contains suitable habitat and / or previous nearby records of other significant fauna species including:

- *Apus pacificus* (Fork-tailed Swift)
- Blackbreasted Button Quail (Turnix melanogaster)
- *Hirundapus caudacutus* (White-throated Needletail)
- *Hirundo rustica* (Barn Swallow)Marbled Frogmouth (Podargus ocellatus plumeriferus)
- *Myiagra cyanoleuca* (Satin Flycatcher)
- *Ninox strenua* (Powerful Owl)
- *Phyllodes imperialis smithersi (Pink Underwing Moth)*

Management Actions

- Undertake targeted fauna searches for species with a moderate to high potential to occur at the site
- Obtain higher level of precision for bat survey to determine if additional 10 species present
- Inform road maintenance teams of Sigificant fauna and flora locations and ecological requirements.
- Coordinate with road mainenance teams to advise reserve managers of upcoming works

Isolated streamside pool containing Tusked Frog Spawn (Image E. Meyer)

Table 6: Significant fauna species known to occur at Triunia Environmental Reserve

Common Name	Scientific Name	Status (EPBC / NC ACT / SCBS)
Amphibians		
Adelotus brevis	Tusked Frog	/V/LSF
Birds		
Accipiter fasciatus	Brown Goshawk	Marine
Aquila audax	Wedge-tailed Eagle	//LSF
Cacomantis flabelliformis	Fan-tailed Cuckoo	Marine
Climacteris erythrops	Red-browed Treecreeper	//LSF
Coracina novaehollandiae	Black-faced Cuckoo-shrike	Marine
Coracina tenuirostris	Cicadabird	Marine
Dicrurus bracteatus	Spangled Drongo	Marine
Grallina cyanoleuca	Magpie-lark	Marine
Hirundo neoxena	Welcome Swallow	Marine
Merops ornatus	Rainbow Bee-eater	Migratory/Marine
Monarcha leucotis	White-eared Monarch	//LSF
Monarcha melanopsis	Black-faced Monarch	Migratory/Marine
Pitta versicolor	Noisy Pitta	Marine
Rhipidura rufifrons	Rufous Fantail	Migratory/Marine
Scythrops novaehollandiae	Channel-billed Cuckoo	Marine
Symposiachrus (Monarcha) trivirgatus	Spectacled Monarch	Migratory/Marine

Todiramphus macleayii	Forest Kingfisher	Marine
Todiramphus sanctus	Sacred Kingfisher	Marine
Zosterops lateralis	Silvereye	Marine
Mammals		
Chalinolobus gouldii	Gould's Wattled bat	//LSF
Petaurus norfolcensis	Squirrel Glider	//LSF
Phascolarctos cinereus	Koala	V/V/LSF
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	//LSF
*Scoteanax rueppellii***	Greater Broad-nosed Bat	//LSF
Tachyglossus aculeatus	Short-beaked Echidna	/SLC/
Wallabia bicolor	Swamp Wallaby	//LSF
Reptiles		
Eroticoscincus graciloides	Elf Skink	//LSF
Insects		
Ornithoptera richmondia	Richmond Birdwing Butterfly	/V/LSF
Crustaceans		
Euastacus urospinus	Spiny Crayfish	//LSF

** Species possibly present but not reliably identified from recorded calls; Marine = Listed Marine species under the EPBC Act; Migratory = Listed Migratory species under the EPBC Act; V = Vulnerable; SLC = Special Least Concern under the NC ACT; LSF = Locally Significant Fauna under the SCBS.

6.1.4 Habitat and ecosystems

Most of the reserve is contained within a semi-contiguous tract of Core Habitat (see **Appendix 2g**). Connecting habitat surrounds the core habitat parcel, linking it to other core habitats in the broader landscape. The reserve is also closely positioned to a Regional Corridor that connects Mapleton to Sippy Downs via Montville (See **Appendix 2h**).

The site is mapped by the Queensland Government as containing 'Essential Habitat' for a number of species under the VM ACT. All species were located during fauna and flora assessments.

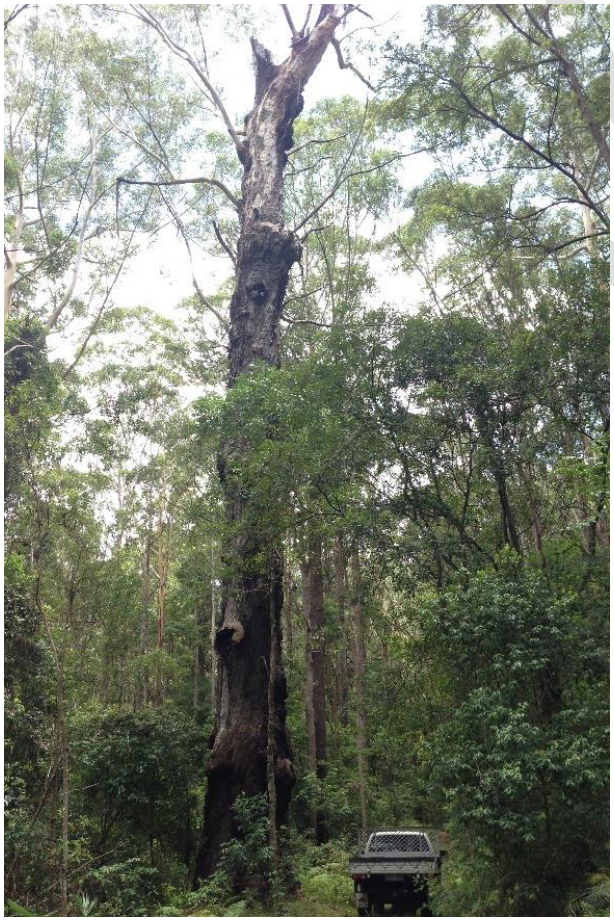
The site features a wide range of potential habitat opportunities for fauna and flora. Habitat features include: scattered large, hollow-bearing trees; abundant fallen logs and leaf litter; and ephemeral creeks with a range of sediment sizes, pools and riffles.

A range of significant species are dependent on the site's preserved habitat values (see **Table 5** and **6**). For example, the ecotone between grassy, open forest and rainforest provides ideal habitat for *Zieria bifida.* Zieria plants have also been observed in disturbed areas such as road cuttings and where bulldozers have undertaken works on site. Ecotonal areas also provide feeding opportunities for birds, such as White-eared Monarchs, whereas habitats with a dense understorey are preferred by Swamp Wallabies, Elf Skink and Rufous Fantail.

Under the Sunshine Coast Koala Conservation Plan (2015), Tallowwoods and Small-fruited Grey Gum occurring at the site are regarded as Preferred koala food trees in the region whereas Pink Bloodwood, Flooded Gum and Blackbutt are regarded as Supplementary koala food trees (Source: Australia Zoo). Other tree species, such as Lophostemons, Casuarinas and Melaleucas, may provide additional food and habitat.

Surface water in the western section provides important breeding habitat for stream-dwelling frogs, although previous disturbance and clearing of riparian forest is likely to have attributed to the lower than expected abundance and diversity of wet forest species found during surveys (Meyer 2015).

Caves and rocky overhangs provide roosting sites for the numerous microbat species occurring at the reserve, and in particular, possible significant bat species.



Habitat tree adjacent fire trail

Management Actions

- Monitor potential loss of ecotone habitat due to absence of ecological processes such as fire that maintains some ecotones.
- Any future planting activities to include food and habitat plants for significant fauna.
- Provide additional cover and foraging opportunities for wet forest frogs in the western section by continuing to assist natural regeneration of riparian habitat (Meyer 2015)
- Restrict public access to caves and rocky overhangs that provide important roosting sites for microbats to prevent the spread of harmful fungus, such as White nose syndrome that has had catastrophic impacts on bats in other countries

6.2 Economic Values

Conservation of biodiversity values at Triunia Environmental Reserve may contribute to the local and broader economy through provision of ecosystem services such as water purification, habitat for crop pollinators and aesthetic values.

For example, water filtration services at this reserve may help to maintain the health and integrity of watercourses in the lower catchment and the ocean—therefore providing an aesthetically pleasing environment; supporting aquatic and terrestrial fauna and flora; and providing opportunities for tourism, recreation and commercial operations further downstream.

6.3 Cultural and Social Values

6.3.1 Indigenous

The Triunia Environmental Reserve is located along the boundary of the Kabi Kabi First Nation native title application area and the Jinibara People native title determination area. Lot 5 on plan RP26985, Lot 6 on plan SP194366, Lot 8 on plan RP26985 and Lot 10 on plan SP172899 are located within the native title application area of Kabi Kabi First Nation.

Lot 16 on plan SP124390 is located within the native title determination area of the Jinibara People. Lot 7 on plan SP102890 is contained within both the Kabi Kabi First Nation native title application area and the Jinibara People Native Title determination area.

At the time of purchase there were no Aboriginal cultural heritage sites recorded in the State Aboriginal Cultural Heritage Database or Register for the above mentioned lots. However, the absence of recorded Aboriginal cultural heritage may simply reflect a lack of cultural heritage surveys in this area. Since the majority of the reserve is undeveloped and undisturbed, there is potential for unrecorded Aboriginal cultural heritage to be present.

All Aboriginal cultural heritage is protected under the Queensland *Aboriginal Cultural Heritage Act 2003*, and penalties can apply for any harm caused. The legislation applies a cultural heritage duty of care whereby any person carrying out an activity must take all reasonable and practical measures to ensure the activity does not harm Aboriginal cultural heritage. To assist in meeting this duty of care, there are *Aboriginal Cultural Heritage Act 2003* Duty of Care Guidelines that should be followed. It is a requirement under these guidelines for the relevant aboriginal party to be consulted prior to any works that will cause ground disturbance in a previously undisturbed area.

Management Actions

- Consult the relevant aboriginal party prior to any works that will cause ground disturbance in a previously undisturbed area

6.3.2 Restoration/eco-recreation

A community event was held in partnership with CCP at the reserve in 2016 to recruit new LFW participants in the local area and to showcase the reserve to the broader Sunshine Coast community. Registered community conservation partners and reserve neighbours were invited to come on site for a guided walk showcasing some of the reserves unique qualities and discussing land management that would help restore the surrounding landscape and protect the reserve's plants and animals in the future. 41 people attended on the day, creating a contact list for the reserve for future events, and 5 new LFW properties were registered in the local area.

Approximately 3.3 hectares of previously cleared, highly disturbed land is present along boundaries of the western section and Lot 10 on SP172899. An additional 1.05 hectares of cleared land is situated below the powerline easement on the western section (see **Appendix 2i**). These areas may be used for future planting activities, such as offset plantings, public restoration projects and joint projects with Queensland Parks and Wildlife.

However as Coyle (2008) highlights—impacts to significant species must be considered prior to undertaking revegetation works. The position of Energex powerlines and accessibility also require consideration.

The Petrie Creek Catchment Care Group Inc. (PCCCG) has been actively promoting the health of the Petrie Creek ecosystem since 1998, through operation of the Florabunda Bushcare local native plant nursery, revegetation projects, dissemination of information and assistance to landholders and partnerships with Council's Community Conservation Partnerships team. Queensland Corrective Services also coordinate restoration projects in the Petrie Creek Catchment.

Management Actions

- Coordinate public restoration projects to involve the community in reserve management and to provide an opportunity for information sharing pertaining to the reserve's conservation values and management
- Identify opportunities to consolidate bushland at the National Park boundary. Collaborate with QPWS for coordinated restoration works.

Management Actions

- Investigate potential for offset plantings and other planting activities in highly disturbed areas of reserve. Consider location of Energex powerlines and impacts of offset planting on significant flora and fauna populations
- Promote partnerships with the PCCCG and Queensland Corrective Services to coordinate catchment-wide management of Petrie Creek
- Investigate potential to propagate significant species through authorised nursery and undertake supplementary plantings during restoration / eco-recreation projects.

6.3.3 Recreation

The reserve is primarily being managed for the conservation and protection of significant fauna and flora and Threatened Ecological Communities occurring at the site.

The absence of existing recreational infrastructure, poor access and the imperative to manage the reserve's unique biodiversity values will influence development of recreational facilities at the reserve.

6.3.4 Reserve category

Under the Environmental Reserves Master Management Plan (2016 – 2026), environmental reserves are grouped into 5 open space categories which determine the future approach to management for each category (Conservation Reserve, Nature Reserve, Bushland Reserve, natural amenity and Coastal Reserve).

Triunia Environmental Reserve will be categorised as a Conservation Reserve, since the reserve is:

- Predominantly covered in remnant vegetation and includes significant fauna and flora species.
- Possesses natural and cultural assets that are highly sensitive to external impacts.
- Limited secondary purposes in the reserve
- The reserve may support research activities.
- Access is restricted--managed through research.
- Appropriate activities could be supported by low impact infrastructure where required.

6.3.5 Research and education

A number of research projects pertaining to the conservation of significant species have been undertaken at the Triunia Environmental Reserve.

Two research plots are established at the reserve by external researchers investigating populations of Buderim Holly and Macadamia species.

A trial is also currently underway by Council to investigate the reproductive response of *Zieria bifida* to fire disturbance. A low intensity experimental burn was undertaken in winter 2015 at two 3 x 3 metre plots that were centred on mature Zieria plants. The rate of recruitment will be recorded once Zieria seedlings can be accurately identified.

Management Actions

- GPS locate existing research plots for Council records
- Investigate gaps in scientific knowledge pertaining to the site's biodiversity values and identify priorities for monitoring, data collection and scientific research
- Expand knowledge in priority arenas by promoting partnerships for monitoring, data collection and scientific research
- Continue to monitor *Zieria bifida* response to experimental burn. Consider undertaking a trial that compares the response of Zieria plants to mechanicaldisturbance
- Investigate capacity for Council's Community Catchment Partnerships team to undertake periodic water quality assessments as a means of determining aquatic ecosystem health and water filtration values at the reserve, and sources of pollutants from the upper catchment

Management Actions

- Disseminate educational material and research findings to the community via events, the Land for Wildlife program and other innovative programs
- Continue to encourage the community to report sightings of conspicuous native fauna species to Council and to citizen science projects such as Koala Tracker and the Atlas of Living Australia.

6.4 Condition of values

Bushland Operational Assessments (BOAs) were completed for this site in 2007 (western section) and 2012 (whole of reserve) (see **Figure 4** and **5**). BOAs will guide resilience based restoration of the site in the future.

A summary of the 2012 BOA is as follows:

- The condition of vegetation at Lot 5 and 8 on RP36985 was predominantly good to excellent, with relatively low weed incursions. The 'biodiversity hotspot zone' occurring along the western boundary exhibited excellent resilience and structure with high species diversity and recruitment. Weeds were most prevalent along the southeast boundary, eastern gullyline and access trails.
- Vegetation condition at Lot 6 on SP194366 was predominantly good to very good although small patches of moderate to poor vegetation occur at the northern boundary—a legacy of historical clearing and activities in the upper catchment.
- The southwest portion of Lot 10 on SP172899 has also been partially cleared and vegetation condition was classified as poor to very poor. Nonetheless, the adjoining remnant vegetation was in 'excellent' condition.
- The western section has a relatively high proportion of non-remnant vegetation with narrow patches of remnant and regrowth vegetation that are susceptible to edge effects. Condition of vegetation in 2012 varies from very poor and good in non-remnant and regrowth areas to predominantly good and very good in remnant areas.

According to the Bushland Operational Assessment in 2012, the condition of most of the reserve's vegetation was 'good' to 'excellent' with areas in poorer condition concentrated along edges and where previous disturbance has occurred.

Figure 5 suggests that there was a substantial improvement in the condition of vegetation at the western section between 2007 and 2012—corresponding with the commencement of management activities in 2007. Ground truthing and aerial imagery show there has been substantial improvements in vegetation condition at locations where facilitated regeneration has occurred. Some changes in condition, however, may be attributed by anomalies in BOA assessments.

Management considerations are captured on Councils Natural Areas GIS base map for Reserve managers and contractors to be aware of in the annual program of works. These management considerations are drawn from the BOA, RWP, fauna and flora assessements and other observations on site. For example there are currently 28 weed hotspots mapped in Council's management considerations datasets for the reserve (2012).

Poorer vegetation condition along boundaries, sections of watercourses is indicative of several processes. Activities in the surrounding landscape that have negatively impacted on vegetation at the reserve include:

- excessive edge spraying at an adjoining property in 2012 that killed recruiting native trees
- garden waste dumping at reserve boundaries
- Invasive species at adjoining properties that have spread directly to reserve boundaries or via runoff from properties higher in the catchment

- dumping of farm waste and using significant species as fence posts at the northern boundary of the western section.
- Cattle grazing within the northern boundary of Lot 7 on SP102890 (see **Section 8.8.2**)

Activities in the adjoining landscape are having an adverse impact on ecological values in the reserve.

Weed incursions observed along Triunia National Park boundaries are potential weed sources whereas household septic systems and a wholesale plant nursery in the upper catchment are potential sources of pollutants and weeds to the reserve.

Weeds observed along the National Park boundary bordering Blackall Range Road

Poorer vegetation along interior tracks has been facilitated by previous management activities on site, such as logging and agriculture, which has created ideal conditions for weeds, and dispersal of weeds by vehicles.

Koalas have been observed by at least 2 neighbouring landowners living near the Lot 5 and 8 on RP36985 and along Dulong Rd, where Triunia National Park and the western section link. Anecdotal evidence from one landowner suggests that the abundance of Koalas near the reserve has declined in recent years. Inspite of the occurence of Preferred and Supplementary Koala food trees at the reserve and at adjoining properties—roads and cleared pastures are barriers that are likely to inhibit Koala movement through the landscape.

Giant Ironwood used as fence post at northern boundary of Western section

Management Actions

- Undertake a BOA every five years to monitor changes in vegetation condition and to measure success of restoration works
- Ensure that all existing 'weed hotspots' are being managed
- Develop ongoing monitoring of weeds and pest animal populations to detect changes that may threaten biodiversity values.
- Undertake coordinated weed management with adjoining landowners and QPWS
- Investigate status of of Healthy Places road reserve weed management project in relation to Triunia Environmental Reserve.
- Review existing arrangement with landowner undertaking land management practices (ie slashing and spraying on fenceline) that are negatively impacting on biodiversity values at the reserve, including Threatened Large-flowered Silkpod and Zieria. Investigate options to prevent harmful practices in future.
- Collaborate with landowner adjoining northern boundary of Lot 6 on SP194366. Discuss options to remove barbed wire from Giant Ironwood and to remove farm waste from reserve
- Investigate options to provide safe passage for Koalas and other native fauna across Blackall Range Rd, including wildlife signage, reduced speed limits and retention of large roadside trees to provide safe passage for arboreal mammals

Figure 4. Vegetation Condition Assessment in 2012

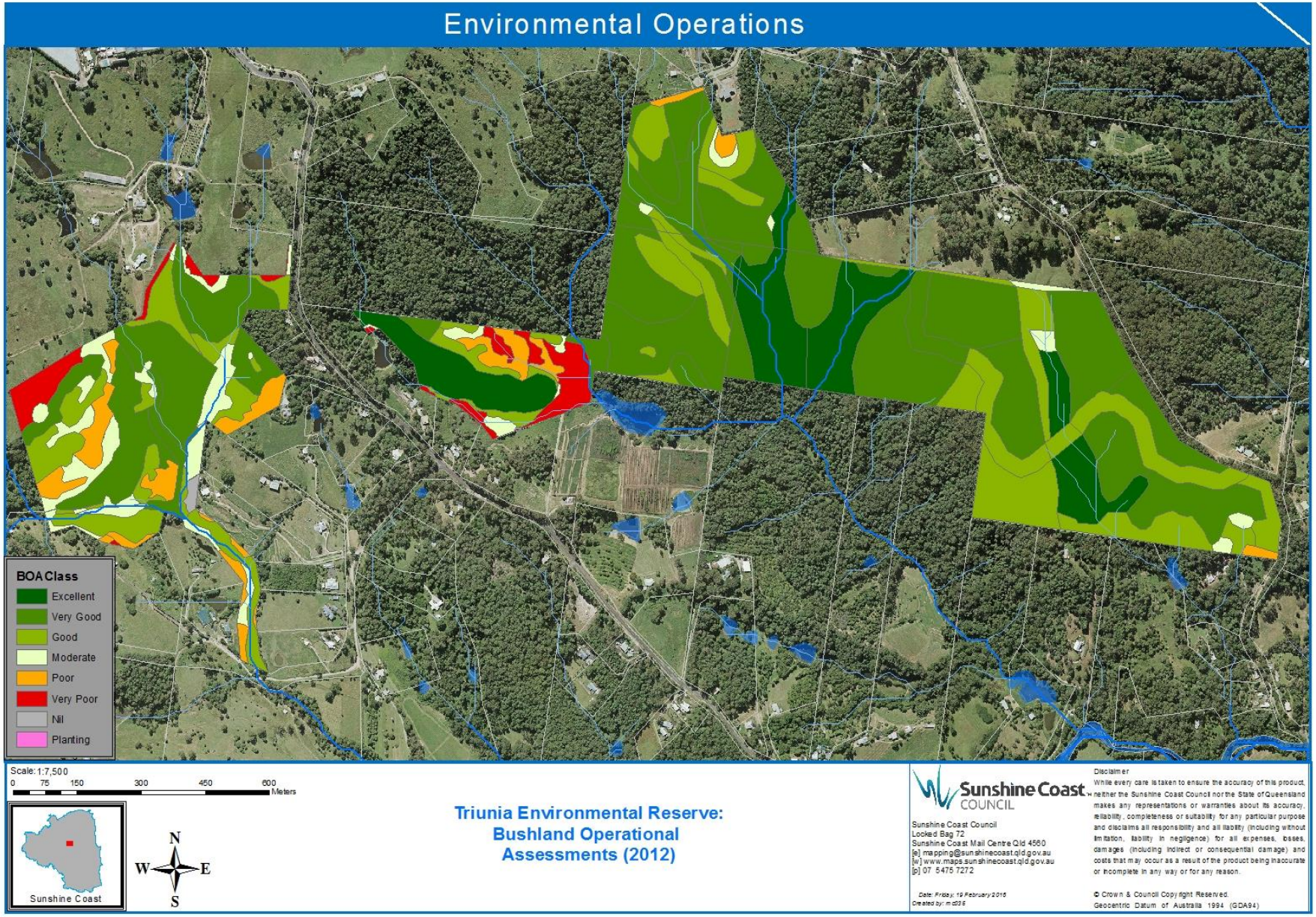
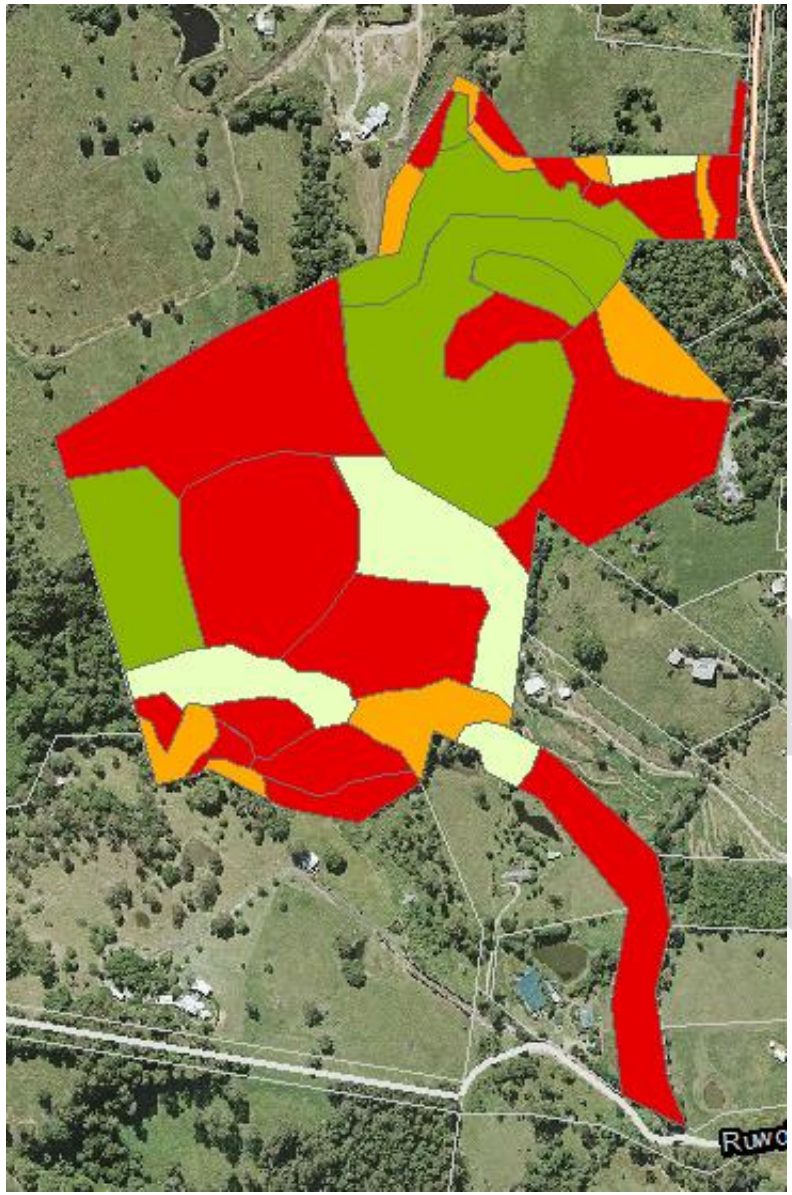


Figure 5: Comparison of 2007 and 2012 BOAs shows significant improvement in vegetation since the commencement of management activities



a) 2007

b) 2012

7 Bioregional and Landscape Context

The bioregional landscape descriptions which have been included here may be used to support any future recognition of this site as part of a National Reserve System (Australian Government 2009).

7.1 IBRA

Interim Biogeographic Regionalisation for Australia (IBRA) is endorsed by all levels of government as a key tool for identifying land for conservation. Australia's landscapes have been classified into 89 large geographically distinct bioregions based on common climate, geology, landform, native vegetation and species information. Under the latest IBRA (v7), Triunia Environmental Reserve is contained within SEQ bioregion (7,804,921 ha), and the SEQ03—Burringbar – Conondale Ranges and SEQ04—Sunshine Coast – Gold Coast Lowlands subregions (630,616 ha and 351,123 ha respectively) (DoE 2016).

Under the Convention of Biological Diversity, Australia's target is to have 17% of the continent protected in the National Reserve System. Currently, 10-15% of the SEQ bioregion is protected.

7.2 Catchment

The reserve is situated near the head of the Petrie Creek subcatchment, in the southwest corner of the Maroochy River catchment (see **Appendix 2j**).

7.3 Local Planning Context

The area falls within the Sunshine Coast Council Planning Area. Under the Sunshine Coast Planning Scheme 2014 the conservation values of this site have been identified and protected.

7.4 CAR Contribution

Comprehensive: There are 7 REs occurring within the reserve, including 1 listed as Of Concern under the VM ACT (RE12.12.1) and 2 listed under the EPBC Act as being representative of a TEC (RE12.12.1 and 12.12.16). Furthermore, RE 12.9-10.14a is among the most poorly conserved REs found on the Sunshine Coast, with only 4.7% (180 ha) of the pre-clearing extent protected in the Conservation Estate (see **Appendix 4**).

Adequate: The reserve area comprises 105.56 hectares of predominantly remnant vegetation. The condition of vegetation is largely 'good' to 'excellent'.

The properties form tenuous linkages with bushland in the surrounding landscape—with the strongest linkages occurring northwest and southwest of the Western section, south to Petrie Creek and north to Towen Mountain (See **Appendix 2k**).

Representative: The reserve encompasses a dense mosaic of rainforest, wet sclerophyll and dry sclerophyll communities that vary in composition and structure according to the different topographical and geological features of the site.

Vegetation communities at the reserve support a high number of Signficant fauna and flora, including possibly the largest known populations of *Zieria bifida*, *Triunia Robusta* and *graptophylum reticulatum*.

Management Actions

- Collaborate with landowners and QPWS to improve habitat connectivity through coordinated restoration projects
- Provide material support and technical advice to landowners through Land for Wildlife and other incentive programs.
- Discuss with adjoining landholders options to progress perpetual protection of 'Target REs' on their properties
- Increase connectivity values through further land acquisition

8. Management Issues

8.1 Regional Background

The SEQ region is the most densely populated part of Queensland, experiencing rapid growth over the previous two decades (Ambrey and Fleming, 2011).

The SEQ bioregion has been identified as an area which is at a critical threshold, where increased development throughout the urban footprint is likely to lead to increasing loss and degradation of remaining ecosystems and their fauna (Peterson *et al.* 2007).

Biodiversity loss is an important issue for this region, therefore the restoration and recovery of significant habitat corridors, catchments, and remnant vegetation, such as that which occurs at Triunia Environmental Reserve, will play an important role in protecting ecological function and associated biodiversity for SEQ.

8.2 Preliminary Risk Analysis

Throughout the establishment phase of works undertaken on this reserve, a range of risks have been identified which may affect Council's capacity to protect and restore biodiversity values of this site.

Table 7 below highlights identified risks and corresponding opportunities proposed to address each of the risks.

Table 7: Summary of reserve management risks and opportunities

Risks	Opportunities
Decline in significant populations occurring at reserve, especially locally and regionally endemic species such as *Zieria bifida, Triunia robusta* and *Graptophyllum reticulatum*	• Monitor existing populations and habitat • Monitor pathogens adversely impacting on significant populations • Undertake additional targeted searches for significant species identified as likely to occur in reserve. • Record specimen locations and inform Council and contractors working on site. • Prioritise restoration and species protection works in important habitat areas • University partnerships. • Secure locations of signficant species to prevent illegal removal
Significant populations and connectivity values threatened by activities surrounding conservation estate.	• Land acquisition • Encourage neighbouring landholders to register under Land for Wildlife and other incentive programs. • Undertaken targeted significant species searches on neighbouring properties. Map and inform landholders of significant species descriptions and locations. • Map significant species in road reserves. Inform road maintenance teams of their location and appropriate management. • Community group partnerships
Loss and degradation of habitat by invasion of escaped garden plants, including aquatic plants	• Community engagement and dissemination of educational material pertaining to weed management. • Remove dumped garden waste

	• Increase surveillance
Pest animals negatively impacting on significant native fauna and flora population, and their habitat	• Continue to monitor pest animals and impacts to significant species and habitat • Implement an integrated pest animal control program aimed at protecting native wildlife
Innapropriate fire regime for biodiversity (especially ecotone specialists) and risk management	• Develop a Fire management Plan • Opportunity to test innovative methods such as responses of significant flora species to fire and mechanical disturbance
Erosion / Sedimentation in watercourses	• Ensure fire trails / tracks across gully lines are designed to prevent erosion and siltation of gullies and streams. • Monitor and mitigate external causes of sedimentation
Removal of native fauna and flora	• Maintain locked gates to prevent public vehicle access. • Highest level of of pretection and restricted use category is maintained ('conservation area")
Tenure does not guarantee long term environmental protection	• Progress legal mechanism to protect conservation values in perpetuity (e.g. nature refuge) • Adjoining landholders to protect conservation values on their properties through a legal mechanism (e.g. Nature Refuge or Voluntary Conservation Agreement (VCA)

8.3 Restricted Matters and Locally Significant Pests

71 weed species have been recorded at the reserve, including 11 Restricted Category 3 (R3) invasive plants under the *Biosecurity Act 2014* (see **Appendix 9**). 4 species are also classified as Weeds of National Significance (WoNS).

Furthermore, 46 species are classified as Locally Significant Pests under the Sunshine Coast Local Government Area Pest Management Plan 2012-2016 (SCPMP). Under the SCPMP, each of these species is assigned a management category that sets out strategic actions to achieved desired weed management outcomes.

Downy Dodder (*Cassytha pubescens*) is a native scrambling vine that is not classified as a pest plant under the *Biosecurity Act 2014* or SCPMP. Nonetheless, vines currently pose a threat to Endangered *Zieria bifida* plants throughout the reserve.

4 pest animal species have been recorded at the reserve (see **Appendix 10**). All 4 species are identified as invasive species in the EPBC Act Protected Matters search tool. Under the *Biosecurity Act 2014,* the Wild Dog and European Fox are Restricted Invasive Animals (Pest animals). The Wild Dog, European Fox and Cane Toad have also been assigned a Management Category under the SCPMP.

The Healthy Places pest animal monitoring program has also recorded several domestic dogs on and off leash in the reserve. Domestic animals pose a potential threat to biodiversity values at the reserve.

An additional 15 introduced fauna species have been identified through desktop assessments with potential to occur at the site (Fox 2015).

Council manages pest animal populations through its Heathy Places unit - Animal Education and Control Team and in accordance with the SCPMP.

Downy Dodder Vine scrambling over Endangered *Zieria bifida* plant

Management Action

- Monitor and continue weed management and Downy Dodder vine removal from around and on *zieria bifida* plants.
- Develop ongoing community education aimed at preventing threats to biodiversity values by exotic plants, domestic animals and livestock from neighbouring properties
- Involve the community in monitoring of conspicuous pest species such as Foxes and Wild Dogs on their properties or at reserve boundaries
- Investigate options for pest animal control though council's Healthy Places – Animal education and control unit
- Erect Restricted Access signage to regulate dog-walking activities

8.4 Fire

Second generation local resident Marg Kruger recalls that major wildfire events occurred in the surrounding landscape in approximately 1936 and 1982 (pers. comm., 27 May 2016).

The expansion of rainforest communities at the reserve and blackened trunks on old trees only, suggest there has been limited fire management at the reserve for at least 30 years (Reif, M 2016 pers. Comm., 9 May).

Future fire management is intended to maintain the diversity of vegetation communities on site and to prevent wildfires that threaten public infrastructure, biodiversity values, private property and life. In particular, controlled burning of dry sclerophyll forests is intended to suspend the encroachment of rainforest communities that threaten ecotonal specialists, including the Endangered *Zieria bifida* (Reif, M 2016 pers. Comm., 9 May).

Fire is also being trialled as a method of stimulating germination of *Zieria bifida* seed at this site, and at the adjoining National Park (Thomas 2007). No other significant species occurring at the site are known to be fire-dependent.

The development of a detailed Fire Management Plan will provide guidance for asset protection and for maintaining ecological processes.

The existing maintained fire trail provides authorised vehicle access for management purposes (see **Figure 1**).

Management Action

- Consider the ecological requirements of native species and vegetation types for fire management at this reserve
- Promote partnerships with QPWS and adjoining landowners to achieve optimum fire safety and biodiversity results
- Future fire management and *Zieria bifida* burn trials to be informed by the Conservation Management Plan for *Zieria bifida* (Coyle 2008)
- Investigate accuracy of fire trail mapping to ensure trail does not traverse private property Ammend potential GPS errors

Blackened trunk of old tree

8.5 Pathogens

Myrtle rust is a disease caused by the fungus *Puccinia psidii* that can cause deformed leaves, heavy defoliation of branches, dieback, stunted growth and plant death. It affects trees and shrubs in the Myrtaceae family.

Myrtle Rust is currently being monitored by Council at Triunia Environmental Reserve. Myrtle Rust is impacting plants from the Myrtaceae family.

Management Action

- Monitor impacts of Myrtle Rust on reserve's biodiversity values
- Promote partnerships with Queensland Government and universities for monitoring, data collection and research pertaining to pathogens occurring at reserve
- Manage Myrtle Rust in accordance with the *Biosecurity Act 2014* and latest strategies from the Queensland Department of Agriculture and Fisheries and Commonwealth Department of the Environment and Energy websites

8.6 Erosion

Gullylines and watercourses at the reserve are generally stable, however erosion in the upper catchment has the potential to impact on biodiversity values within the reserve. For example, one gullyline, which is described as a biodiversity hot spot zone, is heavily cleared and eroded upstream from the reserve boundary and could negatively impact on significant species occurring at the hot spot.

Gully erosion is also occurring at several locations along the fire trail. A rock chute was implemented in 2012 to stablise one gullyline although minor erosion is occurring to the side of the chute. This is not a recommended long-term solution due to risk of downstream accretion of rock waste.

Erosion at rock chute along fire trail

Management Action

- Continue to facilitate natural regeneration along watercourse at Western section
- Monitor gullylines along fire trail, especially after heavy rainfall.
- Implement erosion control measures where required in accordance with Council's Erosion and Sediment Control Manual (Version 1.2)
- Investigate environmentally sensitive sustainable erosion control measures on firetrail where gullyline intersects.
- Collaborate with neighbouring landowners that have erosion issues on their properties. Provide advice and material support through Land for Wildlife and other incentive programs

8.7 Historical Land Use

8.7.1 Vegetation Clearing

Queensland Government mapping of non-remnant and high value regrowth vegetation suggests that historical clearing for agriculture has occurred at approximately 21 hectares of the reserve area (see **Appendix 2d** and **2e**). BOA mapping indicates that the condition of vegetation in these areas is largely degraded (see **Figure 5**).

This presents numerous opportunities for restoration works, and for revegetation or offset plantings is highly degraded areas.

Extensive vegetation clearing has occurred in the surrounding landscape.

Management Action

- Investigate grant funding options to subsidise regeneration works in disturbed areas

8.7.2 Stock Grazing

An adjoining landowner on Carruthers Rd and a landowner on Welks Ridge Rd are known to keep horses. The Carruthers Rd landowner has erected fauna-friendly fencing.

The property to the north of the Western section has previously been, or is currently being grazed by cattle. The boundary is partially fenced, allowing cattle to enter the reserve. Cattle have caused soil compaction and erosion along tracks and have directly damaged vegetation through trampling and rubbing against tree trunks.

Management Action

- Collaborate with landowner adjoining northern boundary of Lot 6 on SP194366. Discuss options to fence northern boundary
- Survey and fence northern boundary of Lot 6 on SP194366 to exclude cattle from reserve and to define area for possible restoration / offset planting in future

Cattle tracks at northern extent of Western section.

8.7.3 Timber Extraction

There is evidence of previous timber harvesting at the reserve and tree felling associated with construction of the existing fire trail and unmaintained trails.

Trees along the property boundary may be subject to public request to trim overhanging branches however this has not occurred to date.

Management Action

- Ensure that all trees and tree limbs are retained on site for habitat

8.8 Access

No safe vehicle turning points have been constructed at maintained trail ends or along Carruther's Rd between Bagnall Rd and Welks Ridge Rd. The northern fire trail end is restricted by a gully and a large eucalypt tree and would require deep trail batter excavations to remove the tree. Old logging trails and loading areas provide at least 3 turn around areas that are well distributed along the fire trail.

Carruthers Rd is a rough 4WD that runs along the eastern boundary of the Carruthers Road section. The road is eroded in sections north of Bagnall Rd—presenting a hazard to motorists. No obvious impacts to the reserve occur as a result of erosion.

Access to the Western section is currently obtained on foot via Blackall Range Road, Road, the watercourse at Ruwoldts Road, or by receiving permission from neighbouring landowners to access through their properties. Access problems restrict Council's capacity to undertake restoration projects in this section.

Eroded section of Carruthers Rd north of Bagnall Rd

Management Action

- Upgrade turning points along maintained trails and along Carruthers Rd (Between Bagnall Rd and Wlks Ridge Rd)
- Investigate options to restrict public vehicle access along section of Carruthers Rd north of Bagnall Rd and adjacent reserve
- Investigate options to construct an access track north from Ruwoldts Rd, along the lower western boundary of Lot 16 on SP124390.

8.9 Climate Change

Research to date indicates that climate change will accelerate a decline in biodiversity through loss of plant and animal species, loss of habitat, proliferation of weed species, and increased bush fire risks. Stream processes may also be impacted by increased flood events.

Sunshine Coast Council Biodiversity Strategy 2010-2020 recognises that climate change is a significant long-term threat to the area's biodiversity. This is also addressed in the Sunshine Coast Council Climate Change and Peak Oil Strategy 2010-2020 where protecting habitat, rehabilitating areas, enhancing wildlife corridors and reducing pest species are suggested to help wildlife adapt to changing conditions and also provide the potential to sequester carbon.

Management Action

- Build resilience to change through habitat connectivity and if feasible, consider additional land acquisition to provide increased core habitat and connectivity

9. Implementation Plan

9.1 Purpose of the Protected Area

The primary purpose of 'conservation area' reserves is for protecting and enhancing ecological values, maintaining or enhancing biodiversity and habitat connectivity, and maintaining or enhancing populations of significant plant and animal species. Iother uses within the reserve are restricted.

9.2 Management objectives

- Manage the area in order to perpetuate, in as natural a state as possible, representative examples of regional ecosystems, biotic communities, genetic resources and unimpaired natural processes
- Maintain viable and ecologically functional populations and assemblages of native species at densities sufficient to conserve ecosystem integrity and resilience in the long term
- Contribute in particular to conservation of wide-ranging species, regional ecological processes and migration routes
- Take into account the exclusive and non-exclusive native title rights of Kabi Kabi First Nation and the Jinibara People
- Contribute to local economies through ecological knowledge and habitat restoration

9.3 Protection Mechanism

The Triunia Environmental Reserve is partly owned by Sunshine Coast Council under freehold title, and partly owned by the Queensland Government, with SCC acting as trustee (See **Figure 1**).

Under the SCC Planning Scheme 2014 the whole reserve area is protected for the purpose of environmental management and conservation.

The intent of reserve management established through this management plan is therefore to ensure the conservation values are maintained so that the current protection mechanisms are not compromised.

9.4 Restoration Goals

Restoration activities at Triunia Environmental Reserve aim to maintain and enhance existing biodiversity values and improve overall resilience of vegetation.

The Triuna Environmental Reserve (Carruthers Road Section) Rehabilitation Works Plan (RWP) describes priorities for restoration at this section based on 2012 BOA mapping. To assist restoration, this section has been partitioned into ten management zones that govern the types of activities required to improve each zone's BOA classification.

Vegetation management activities undertaken at Lot 5 and 8 on RP36985 are informed by the RWP. The RWP will be reviewed every five years.

Vegetation management activities at the western section, Lot 6 on SP194366 and Lot 10 on SP172899 are currently informed by the site BOA, previous contractor reports and via groundtruthing. Work instructions for contractors are updated biannually.

Management Action

- Review BOA and RWP every five years. Successive RWPs to inform restoration priorities for the total reserve area.

9.4.1 Significant fauna and flora

Triunia Environmental Reserve supports a number of Commonwealth, state and locally significant fauna and flora species, and REs representative of a TEC (see **Table 5** and **6**).

Recovery plans for Commonwealth listed TECs and Threatened species may have been developed under the EPBC Act. Once a recovery plan is in place, responsible government agencies should act in accordance with that plan. The following recovery plans are available relevant to the reserve:

- Recovery Plan for *Graptophyllum reticulatum* (Lynch 2007)
- Southern Macadamia Species Recovery Plan (Costello *et al.* 2009)
- Conservation Management Plan for Zieria bifida (Coyle 2008)
- Conservation and Recovery of the Richmond Birdwing Butterfly, *Ornithoptera richmondia* and its Lowland Food Plant, *Pararistolochia praevenosa* (Sands & Scott 1998)

Where a Commonwealth recovery plan has not been implemented, a Conservation Advice is provided based on best available information. The advice includes species descriptions, threats, research priorities and priortity actions to guide management activities.

The 'Back on Track Species Prioritisation Framework' is a Queensland Government initiative that uses multiple criteria to prioritise native species and guide conservation management and recovery. The framework incorporates the Species Recovery Information Gateway (SPRING), an online application that provides information about the conservation and recovery of EVNT species in Queensland.

Under the 'Back on Track Species Prioritisation Framework', 5 flora and 3 fauna species found at Triunia Environmental Reserve are classified as 'Priority species of the Southeast Queensland Natural Resource Management region**'.**

Priority species include Southern Corynocarpus, Birdwing Butterfly Vine, Vulnerable Shade Lily, Northern Spicebush (*Triunia robusta),* Ravine Orchid, Greater Broad-nosed Bat[2], Elf Skink and the Richmond Birdwing Butterfly.

Threats and recovery actions for Priority species are summarised in the document, 'Back on track actions for biodiversity: taking action to achieve species conservation in the SEQ NRM Region**' (**DERM 2010). An extract of recovery actions relevant to this reserve is provided in **Appendix 11**.

Sunshine Coast Council also implements plans to facilitate management of high priority issues, such as koala conservation, and to address obligations and actions identified in Commonwealth, state and local planning instruments. Plans that are relevant to Triunia Environmental Reserve include the Sunshine Coast Koala Conservation Plan (Ecosure 2015).

Additional recommendations are provided in fauna and flora assessment reports for Triunia Environmental Reserve and are reported in relevant sections of this plan.

[2]Species possibly present but not reliably identified from recorded calls

Management Action

- Ensure management actions are in accordance with recovery plans available for Threatened species under the EPBC Act.
- Adopt SPRING guidelines for Priority Species listed under Queensland's 'Back on Track Species Prioritisation Framework'.
- Ensure management activities align with Sunshine Coast Council plans
- Ensure management actions consider fauna and flora survey recommendations.

9.5 Management Actions

The following section provides a table of all of the management actions reported in this document and shows the associated work plan linked to the service level category for this reserve.

Table 8: Management Implementation Plan for Triunia Environmental Reserve.

MANAGEMENT ACTIONS	RELEVANT DOCUMENTATION	STATUS	PRIORITY
Vegetation Communities			
• Map observed RE boundaries at western section and Lot 10 on SP172899 and Lot 6 on SP194366 of eastern section	Section 6.1.1	Not started	Medium
• Ammend Queensland Government RE mapping for site through a Property Map of Assessable Vegetation (PMAV)		Not started	Medium
• Map the extent of Lowland Rainforest of Sub-tropical Australia (LRS) at the reserve according to observed regional ecosystems, and descriptions, key diagnosic characteristics and condtion thresholds in the Commonwealth Listing Advice for LRS		Not started	Medium
• Discuss with adjoining landholders options to progress perpetual protection of 'Target regional ecosystems' on their properties		Underway through CCP	Medium
Native Fauna and Flora			
• GPS locate all significant plants in reserve and adjoining road reserves.	Section 6.1.2	Ongoing	High
• Discuss with adjoining landholders possibility of GPS locating significant plants on their properties.		Not started	High
• Submit biodiversity data to a secure, reputable public database such as Wildnet		Noted	Medium
• Ensure Council managers and contractors are aware of the species on-site and their requirements for survival.		Underway	High
• Monitor existing populations of significant fauna and flora to detect changes in population size	Section 6.1.2 & Section 6.1.3	Underway for target species.	Ongoing
• Develop a database of fauna and flora species occurring at Sunshine Coast reserves that enables comparisons of diversity between reserves		Database for selected reserves completed 2015	Low
• Undertaken likelihood of occurrence assessment for significant fauna and flora species that may potentially occur at the site. Undertake targeted searches for species with a moderate to high potential to occur		Ongoin searches undertaken by Council officers and contractors during site visits	Medium

MANAGEMENT ACTIONS	RELEVANT DOCUMENTATION	STATUS	PRIORITY
• Obtain higher level of precision for bat survey to determine if additional 10 species present	Section 6.1.3	Not started	Medium
• Coordinate with road maintenance teams to advise reserve managers of upcoming works		Not started	High
• Inform road maintenance teams of significant flora and fauna locations and ecological requirements		Not started	High
Habitat and ecosystems			
• Any future planting activities to include food and habitat plants for significant fauna.	Section 6.1.4; Frog habitat assessment and survey results for Triunia Environmental Reserve (Meyer 2015)	Noted	Low
• Monitor potential loss of ecotone habitat area due to absence of ecological processes such as fire that maintain some ecotones.		Noted	Ongoing
• Provide additional cover and foraging opportunities for wet forest frogs in the western section by continuing to assist natural regeneration of riparian habitat (Meyer 2015)		Underway	Ongoing
• Restrict public access to caves and rocky overhangs that provide important roosting sites for microbats to prevent the spread of harmful fungus, such as White nose syndrome that has had catastrophic impacts on bats in other countries		Noted	Ongoing
Cultural Heritage values			
• Consult the relevant aboriginal party prior to any works that will cause ground disturbance in a previously undisturbed area	*Aboriginal Cultural Heritage Act 2003* Duty of Care Guidelines; Section 6.3.1	As required	Ongoing
Restoration / Eco-recreation			
• Coordinate public restoration projects to involve the community in reserve management and to provide an opportunity for information sharing pertaining to the reserve's conservation values and management		Not started	Medium

MANAGEMENT ACTIONS	RELEVANT DOCUMENTATION	STATUS	PRIORITY
• Investigate potential for offset planting and other planting activities in highly disturbed areas of reserve. Consider location of Energex powerlines and impacts of offset planting on Signficant populations	Section 6.3.2	Not started	Medium
• Identify opportunities to consolidate bushland at the National Park boundary. Collaborate with QPWS for coordinated restoration works.		Not started	Medium
• Promote partnerships with the Petrie Creek Catchment Care Group Inc. and Queensland Corrective Services to coordinate catchment-wide management of Petrie Creek		Underway	Medium
• Investigate potential to propagate significant species through authorised nursery and undertake supplementary plantings during restoration / eco-recreation projects.		Not started	Medium
Research and education			
• GPS locate existing research plots for Council records	Section 6.3.5	Not started	Medium
• Investigate gaps in scientific knowledge pertaining to the site's biodiversity values and identify priorities for monitoring, data collection and scientific research	Section 6.3.5 and 9.4.1	Underway	High
• Expand knowledge in priority arenas by promoting partnerships for monitoring, data collection and scientific research		Underway	High
• Continue to monitor *Zieria bifida* response to experimental burn. Consider undertaking a trial that compares the response of Zieria plants to mechanical disturbance.		Underway.	High
• Disseminate educational material and research findings to the community via events, the Land for Wildlife program and other innovative programs		Underway	High
• Investigate capacity for Council's Community Catchment Partnerships team to undertake periodic water quality assessments as a means of determining aquatic ecosystem health and water filtration values at the reserve, and sources of pollutants from the upper catchment	Section 6.3.5	Not started	Ongoing
• Continue to encourage the community to report sightings of conspicuous native fauna species to Council and to citizen science projects such as Koala Tracker and the Atlas of Living Australia.		Not started	Low

MANAGEMENT ACTIONS	RELEVANT DOCUMENTATION	STATUS	PRIORITY
Condition of Values			
• Undertake a BOA every five years to determine changes in vegetation condition and to measure success of restoration works.	Section 6.4	Scheduled 2017	High
• Ensure that all existing 'weed hotspots' are being managed		Underway	Ongoing
• Develop ongoing monitoring of weed and pest animal populations to detect any changes that may threaten biodiversity values		Underway	High
• Collaborate with adjoining landowners and QPWS to facilitate coordinated weed management		Underway through CCP program	Ongoing
• Undertake coordinated weed management with adjoining landowners and QPWS		Partially underway through CCP Program	Ongoing
• Investigate status of of Healthy Places road reserve weed management project in relation to Triunia Environmental Reserve.		Not started	High
• Review existing arrangement with landowner undertaking land management practices (ie slashing and spraying on fenceline) that are negatively impacting on biodiversity values at the reserve, including Large-flowered Silkpod and Zieria plants. Investigate options to prevent harmful practices in future		Noted	High
• Collaborate with landowner adjoining northern boundary of Lot 6 on SP194366. Discuss options to remove barbed wire from Giant Ironwood and to remove farm waste from reserve		Not started	High
• Investigate options to provide safe passage for Koalas and other native fauna across Blackall Range Rd, including wildlife signage, reduced speed limits and retention of large roadside trees to provide safe passage for arboreal mammals		Not started	Medium
Bioregional and landscape context			
• Collaborate with landowners and QPWS to improve habitat connectivity through coordinated restoration projects	Section 7, Section 8.6, Section 8.8.1	Underway through CCP program	Ongoing

MANAGEMENT ACTIONS	RELEVANT DOCUMENTATION	STATUS	PRIORITY
• Provide material support and technical advice to neighbouring landowners through the Land for Wildlife and other incentive programs.	Section 7	Underway	High
• Increase connectivity values through further land acquisition		Underway	Delivered/Ongoing
• Discuss with adjoining landholders options to progress perpetual protection of 'Target regional ecosystems' on their properties.		Underway through CCP	Medium
Restricted Matters and Locally Signficant Pests			
• Implement pest management activities in line with the most recent RWP and Sunshine Coast Local Government Area Pest Management Plan	Section 8.3	Underway	Ongoing
• Monitor and continue weed management and Downy Dodder vine removal from around and on *zieria bifida* plants.		Underway	High
• Developing ongoing community education aimed at preventing threats to biodiversity values from exotic plants, domestic animals and livestock from neighbouring properties		Underway	Ongoing
• Involve the community in monitoring of conspicuous pest species such as Foxes and Wild Dogs on their properties or at reserve boundaries.		Not started	Low
• Investigate options for pest animal control though council's Healthy Places – Animal education and control unit		Underway	Ongoing
• Erect Restricted Access signage to regulate dog-walking activities		Not started	High
Fire			
• Consider the ecological requirements of native species and vegetation types for fire management at this reserve.	Section 8.4, Conservation Management Plan for Zieria bifida (Coyle 2008), Triunia National Park Management Plan (DERM 2011)	Noted	Ongoing
• Promote partnerships with QPWS and adjoining landowners to achieve optimum fire safety and biodiversity results.		Noted	Low
• Future fire management and *Zieria bifida burn* trials to be informed by the Conservation Management Plan for Zieria bifida (Coyle 2008)		Underway	Ongoing
• Investigate accuracy of fire trail mapping to ensure trail does not traverse private property. Ammend potential GPS errors.		Underway	High

MANAGEMENT ACTIONS	RELEVANT DOCUMENTATION	STATUS	PRIORITY
Pathogens			
• Monitor impacts of Myrtle Rust on reserve's biodiversity values	Section 8.6	Underway	Ongoing
• Promote partnerships for monitoring, data collection and research pertaining to pathogens ocurring at reserve.		Underway	High
• Manage Myrtle Rust in accordance with the *Biosecurity Act 2014* and latest strategies from the Queensland Department of Agriculture and Fisheries and Commonwealth Department of the Environment and Energy websites		Underway	Ongoing
Erosion			
• Continue to facilitate natural regeneration along watercourse at western section	Section 8.6	Underway	Ongoing
• Monitor gullylines along fire trail, especially after heavy rainfall.		Underway	Ongoing
• Implement erosion control measures where required in accordance with Council's Erosion and Sediment Control Manual (Version 1.2)		As Required	Ongoing
• Investigate environmentally sensitive sustainable erosion control measures on firetrail where gullyline intersects.		Noted	Ongoing
• Collaborate with neighbouring landowners that have erosion issues on their properties.Provide advice and material support through Land for Wildlife and other incentive programs		Not started	High
Historical Land Use			
<u>Management Action</u> <u>Vegetation Clearing</u>	Section 8.7.1		

MANAGEMENT ACTIONS	RELEVANT DOCUMENTATION	STATUS	PRIORITY
• Investigate grant funding options to subsidise regeneration works at disturbed areas		Not started	Medium
<u>Stock grazing</u> • Collaborate with landowner adjoining northern boundary of Lot 6 on SP194366. Discuss options to fence northern boundary • Survey and fence northern boundary of Lot 6 on SP194366 to exclude cattle from reserve and to define area for possible restoration / offset planting in future <u>Timber extraction</u> • Ensure that all trees and tree limbs are retained on site for habitat	Section 8.7.2 Section 8.7.3	Not started Not started Underway	Medium Medium Ongoing
Access			
• Upgrade turning points along maintained trails and along Carruthers Rd (Between Bagnall Rd and Welks Ridge Rd) • Investigate options to restrict public vehicle access along section of Carruthers Rd north of Bagnall Rd and adjacent reserve • Investigate the potential to construct an access track north from Ruwoldts Rd, along the lower western boundary of Lot 10 on SP172899.	Section 8.8	Not started Not started Not started	High High Medium
Climate Change			
• Build resilience to change through habitat connectivity and if feasible, consider additional land acquisition to provide increased core habitat and connectivity	Section 8.9	Underway	Ongoing

MANAGEMENT ACTIONS	RELEVANT DOCUMENTATION	STATUS	PRIORITY
Restoration Goals *(NB: also includes actions related to the implementation of the Regeneration Works Plan)*			
• Review BOA and RWP every five years.Successive RWPs to inform restoration priorities for the total reserve area.	Section 9.4	Scheduled 2017	Ongoing
• Ensure management actions are in accordance with recovery plans available for Threatened species listed under the EPBC Act.	Section 9.4.1	Underway	Ongoing
• Adopt SPRING guidelines for Priority Species listed under Queensland's 'Back on Track Species Prioritisation Framework'.		Underway	Ongoing
• Ensure management activities align with Sunshine Coast Council plans		Underway	Ongoing
• Ensure management actions consider fauna and flora survey recommendations		Underway	Ongoing

Priority: Ongoing = Actions that will continue to be undertaken in the life of the MP; High = Actions that will commence within the next 12 months; Medium = Actions that will commence within the next two years; Low = Actions that will commence within the next five years * MMP = Master Management Plan (2016-2026); SMI = Statement of Management Intent; BOA = Bushland Operational Assessment; FMP = Fire Management Plan; NRS = National Reserve System; MP = this Management Plan; RWP = Regeneration Works Plan.

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9.6 Finance and Resourcing

The Natural Area management program delivers the restoration, maintenance and development of Council's Environmental Reserve network.

9.6.1 Establishment

Establishment activities are funded under Council's Environment Levy Establishment Program which applies to each new reserve for a period of approximately three to five years when all major planning reports and establishment works are implemented.

9.6.2 Operational

The levy operational budget is used for on-going maintenance of the reserve, following establishment. An annual operational budget is determined by the service level classification for each reserve which is based on several factors including:

- biodiversity values and risk
- reserve condition, function and size
- recreation and educational opportunities
- minimum community expectations

The ongoing management and maintenance of the Triunia Environmental Reserve will continue to be funded by the Environment Levy Program.

9.6.3 Community Conservation Partnerships Unit

The Community Nature Conservation Program supports Council's reserve management and maintenance—engaging and supporting community volunteers in actively protecting and rehabilitating the region's environmental assets on public lands and includes over 1,000 volunteers.

9.6.4 Healthy Places – Animal Education and Control unit

In conjunction with the Natural Areas team, the Healthy Places - Animal education and control team fulfils and delivers Council's statutory responsibility to manage impacts of pest plants and animals within Council reserves.

9.7 Monitoring

The SEQ Natural Resource Management Plan uses the Monitoring, Evaluation, Reporting and Improvement (MERI) plan. **Figure 6** shows the MERI program logic which provides time-frames and outcomes linked to the management plan objectives which can be assessed during monitoring and evaluation.

The MERI plan provides a framework to:

1. Evaluate the contribution of the reserve to the overall Sunshine Coast reserve network,

2. Evaluate the effectiveness of the methodology and approach used, and

3. Incorporate lessons learned into future work in the area of land purchased for inclusion in Council's reserve estate.

Figure 6: MERI Program Logic – based on the National Reserve System and SREQ NRM Plan

Outcomes	CouncilOwned/managed Environmental Reserve
Long-term outcomes (20 years)	This site will contribute to a well-managed, comprehensive reserve network protecting in perpetuity examples of at least 80% of the extant native ecosystems present in the Sunshine Coast Region .
Environment outcomes (5 years)	Reduced threat from invasive species Thematic Links GERI; Improved ecological connectivity Increased representativeness of regional ecosystems Increased protection of under-represented RE's Enhanced resilience of the protected areas to disturbance Protected native habitat Address Matters of National Environmental Significance
Protection and management outcomes (5 years)	Managers are effectively implementing management actions of the Management Plan
Engagement and capacity outcomes (5 years)	Managers have the capacity for effective management planning
Immediate outcomes (biophysical and non-biophysical outcomes)	High value areas (including those within under-represented bioregions) are prioritised for acquisition and managed for nature conservation
Proponent influence activities	Partnership purchases (Discretionary grants)

9.8 Communications Plan

Preliminary consultation for this management plan has been based on input from stakeholders within Council. This includes recreational, conservation, community partnerships, and cultural heritage sectors. The first draft version of the plan was developed following this consultation.

Public and external stakeholder groups are then invited to comment on the first draft through the Council web site and specific targeted notifications.

9.8.1 Publicity about the Values and Achievements

Council will continue to provide information to the public via reports, publications, newsletters, and webpages and through media outlets as and when suitable opportunities present.

9.9 Management Plan Review Schedule

The Management Plan will be reviewed after five years in line with the MERI guidelines, supported by the five year review of the Regeneration Works Plan.

It is anticipated that this management plan will only be comprehensively evaluated after 10 years of implementation underpinned by the framework of actions, relevant monitoring and evaluation strategies, described in this plan.

Triunia Environmental Reserve and surrounding landscape photographed from Welks Ridge Rd

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Appendices

Appendix 1: National Reserve System Principles of Protected Area Management

Interconnectedness of values and places

Protected area management aims to incorporate and integrate biodiversity values, Indigenous cultural values and broader community and historic heritage values.

Protected areas are also part of broader bioregional, social, cultural and economic landscape and they should be managed in this context.

Good neighbor

Protected area managers are economically and socially part of local and regional communities and recognise the need to be valued, responsible, and active local and regional community participants and members.

Community participation and collaboration

Protected areas are conserved for the benefit of and with the support of the community and this is best achieved through awareness, understanding and involvement.

Environmental stewardship

Responsibility for protecting and conserving protected area values extends beyond the management body to include lessees, licensees, relevant public and private authorities, visitors, neighbours and the wider community.

Transparent decision making

The framework and processes for decision-making should be open and transparent. The reasons for making decisions should be publicly available, except to the extent that information, including information that is culturally sensitive or commercial-in-confidence, needs to be treated as confidential.

Effective and adaptive management

Protected area management should apply an adaptive management approach to support continuous improvement in management. This includes monitoring the outcomes of management and taking account of the findings of monitoring and other research to improve management effectiveness. Management decisions should have a firm scientific basis or be supported by relevant experience. Management bodies need to maintain and improve their capacity to learn from experience, to value and build staff expertise and draw on input from other stakeholders.

Appropriate use

Access to and use of protected areas must be consistent with the long term protection of their values, the maintenance of physical and ecological processes and agreed management objectives.

Indigenous people's knowledge and role

Protected areas are part of landscapes that have supported and continue to give identity to Indigenous people who have traditional and historical connections to and knowledge of the land. Indigenous people are recognised and respected as the original custodians of the lands,

waters, animals and plants within protected areas. Their living and spiritual connections with the land through traditional laws, customs and beliefs passed on from their ancestors are also recognised. The role of Indigenous organisations in the protection and management of country is acknowledged.

Applying the "precautionary principle"

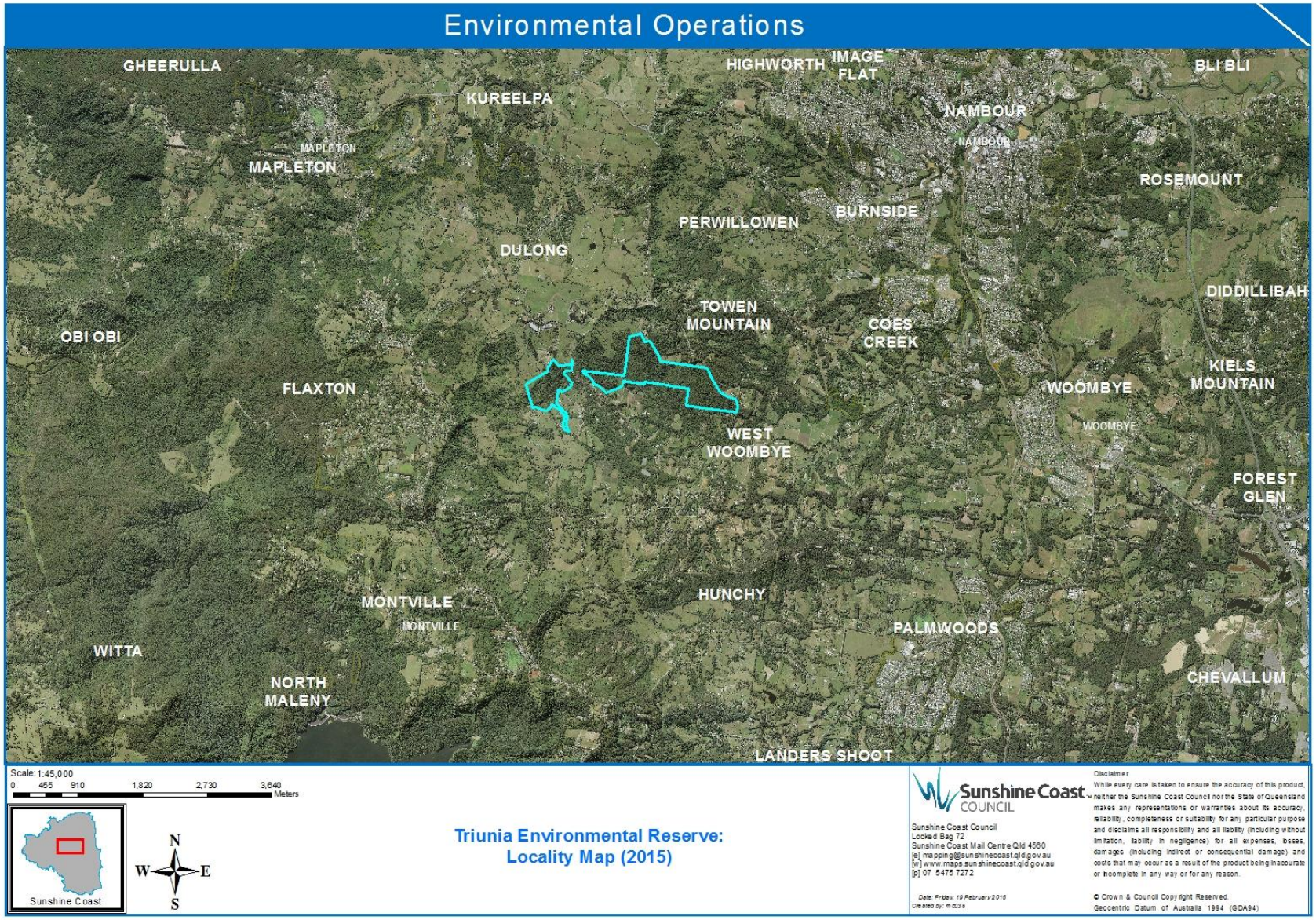
Protection of the natural and cultural heritage of the NRS should include identifying and taking appropriate actions to avert and actively manage emerging threats and risks. Effective management must be based on the best available information. However, where there are threats or potential threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation or harmful disturbance to natural and cultural places.

Inter-generational and intra-generational equity

Management seeks to ensure that the health, diversity and productivity of the environment and the integrity and significance of cultural places are maintained or enhanced for the benefit of future generations and that decisions affecting current generations are socially equitable.

Appendix 2: Commonwealth, state and local mapping

a) Context


Environmental Operations
GHEERULLA
KUREELPA
MAPLETON
MAPLETON
HIGHWORTH
IMAGE FLAT
BLI BLI
NAMBOUR
NAMBOUR
ROSEMOUNT
PERWILLOWEN
BURNSIDE
DULONG
DIDDILLIBAH
TOWEN MOUNTAIN
COES CREEK
OBI OBI
FLAXTON
KIELS MOUNTAIN
WOOMBYE
WOOMBYE
WEST WOOMBYE
FOREST GLEN
HUNCHY
MONTVILLE
MONTVILLE
PALMWOODS
WITTA
NORTH MALENY
CHEVALLUM
LANDERS SHOOT
Scale: 1:45,000
0 455 910 1,820 2,730 3,640
Meters
Sunshine Coast
N
W E
S
Triunia Environmental Reserve:
Locality Map (2015)
Sunshine Coast COUNCIL
Sunshine Coast Council
Locked Bag 72
Sunshine Coast Mail Centre Qld 4560
[e] mapping@sunshinecoast.qld.gov.au
[w] www.maps.sunshinecoast.qld.gov.au
[p] 07 5475 7272
Date: Friday, 19 February 2016
Created by: m038
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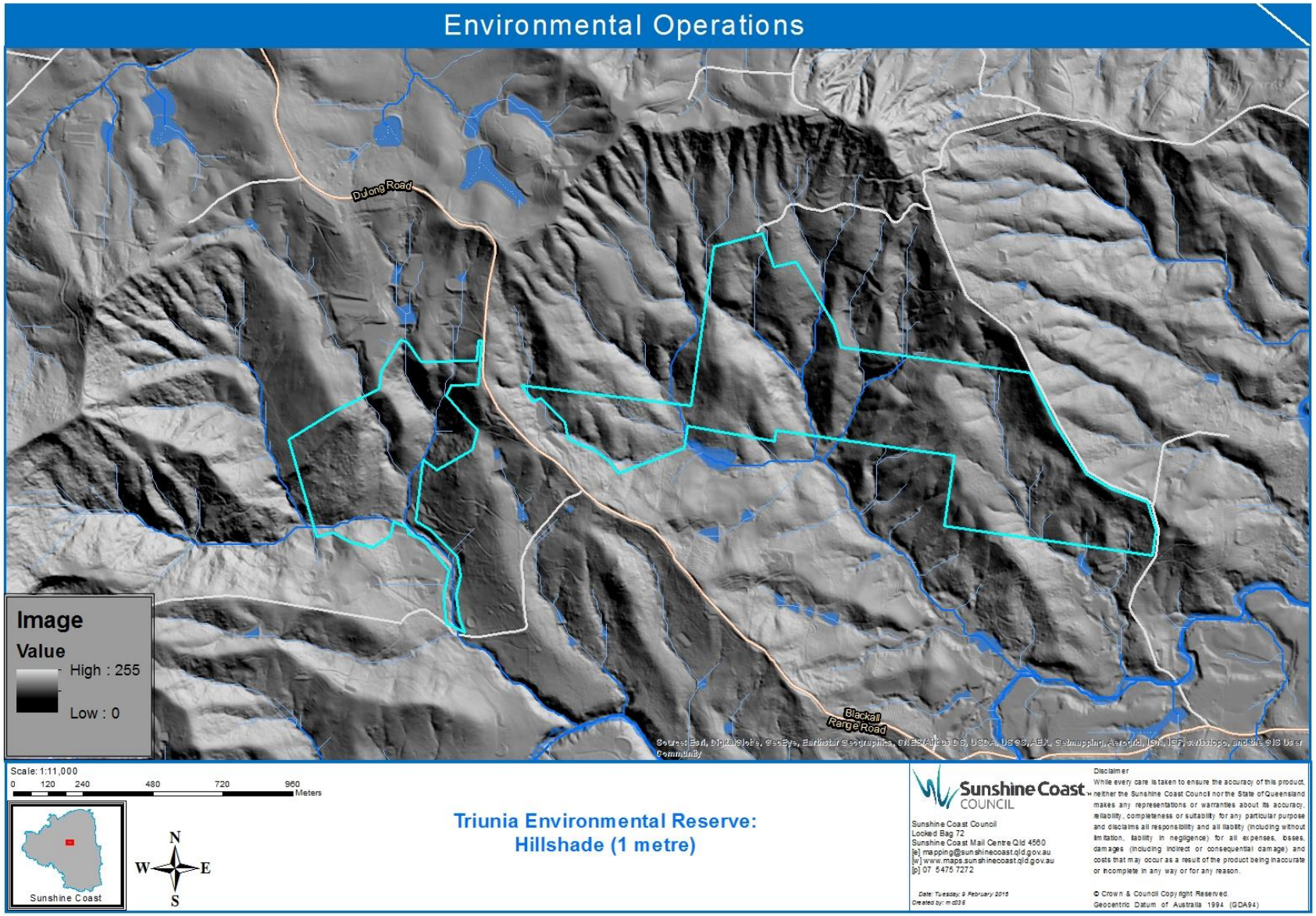
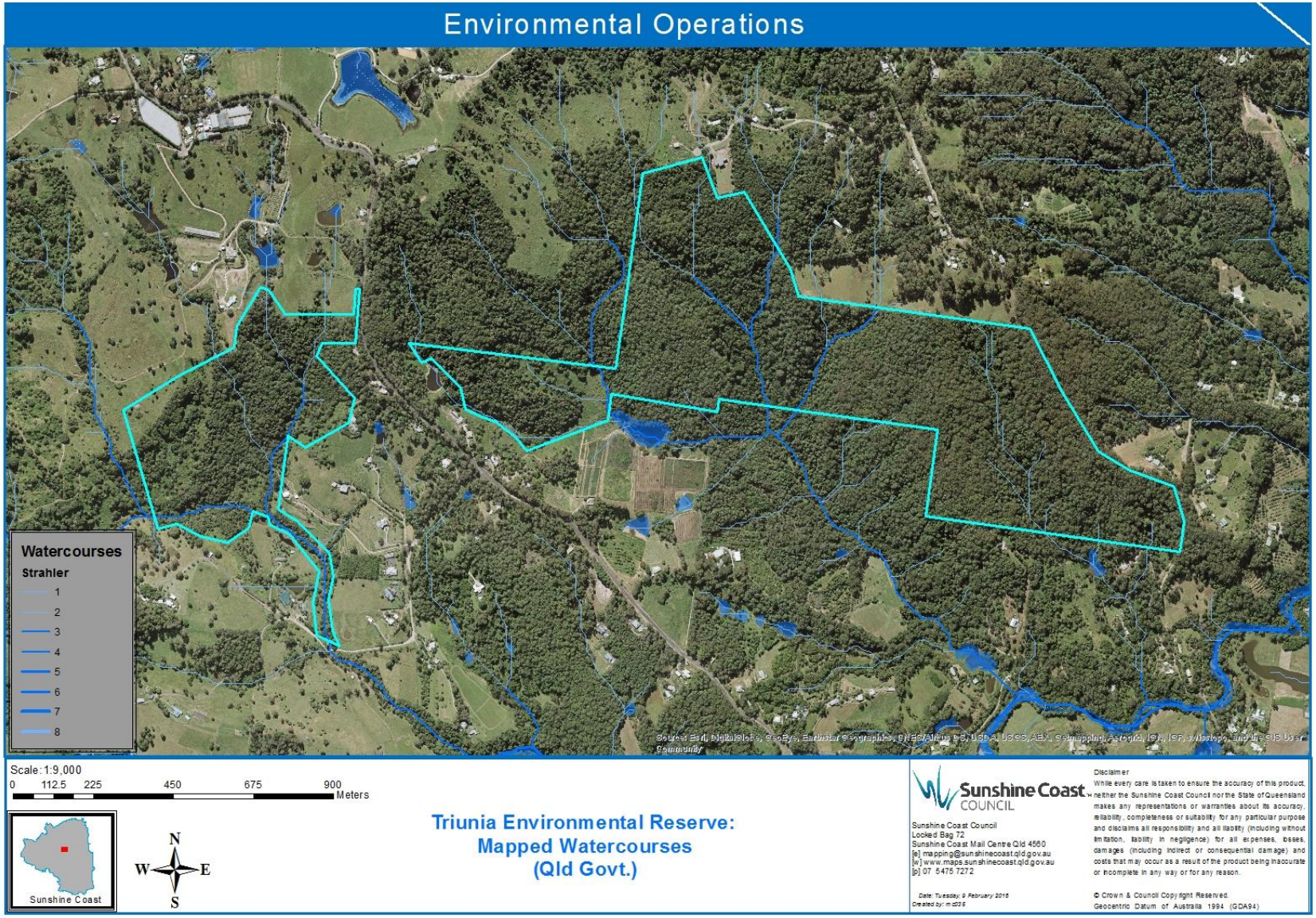
Geocentric Datum of Australia 1994 (GDA94)

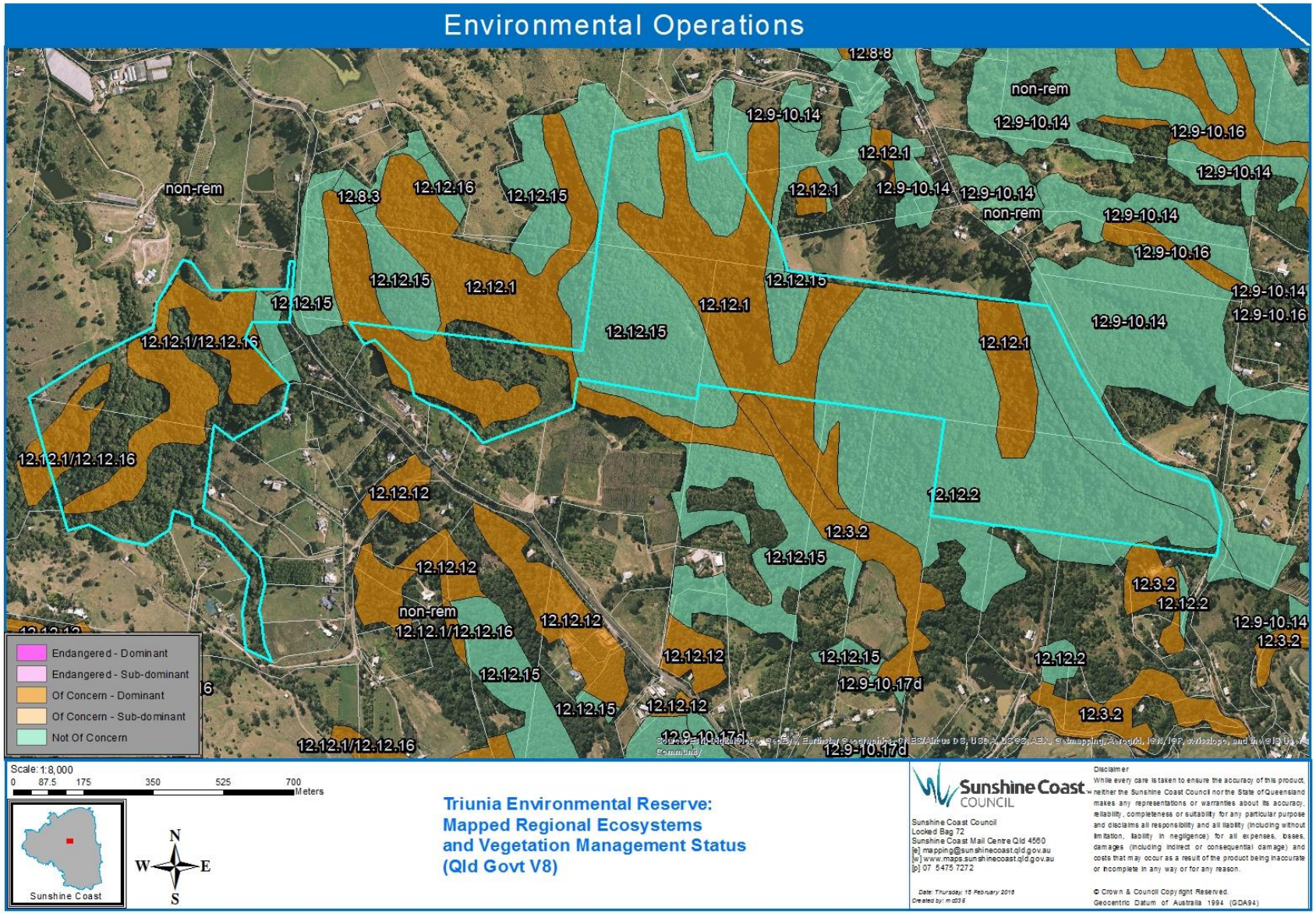
b) Landform features



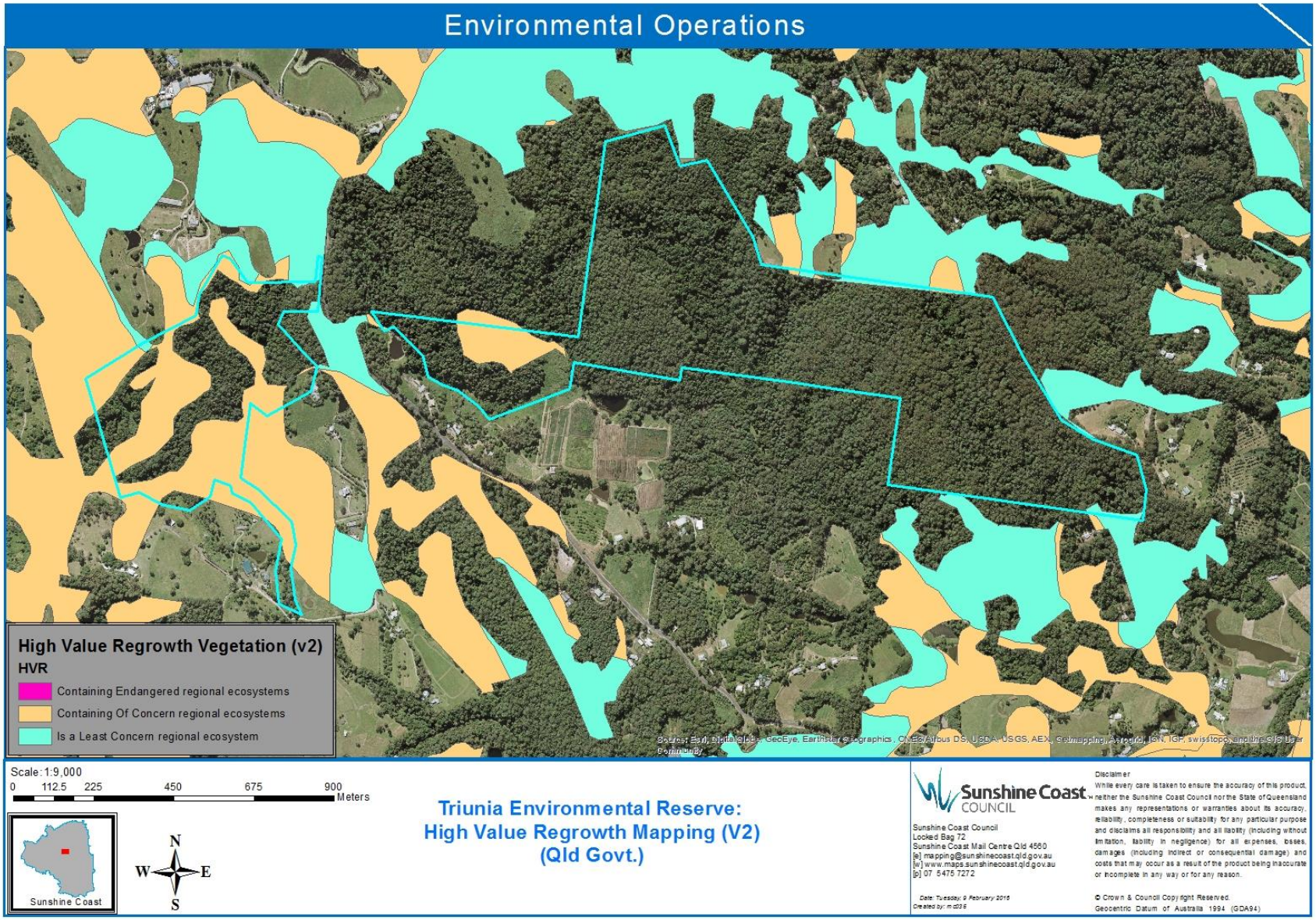
c) Mapped watercourses



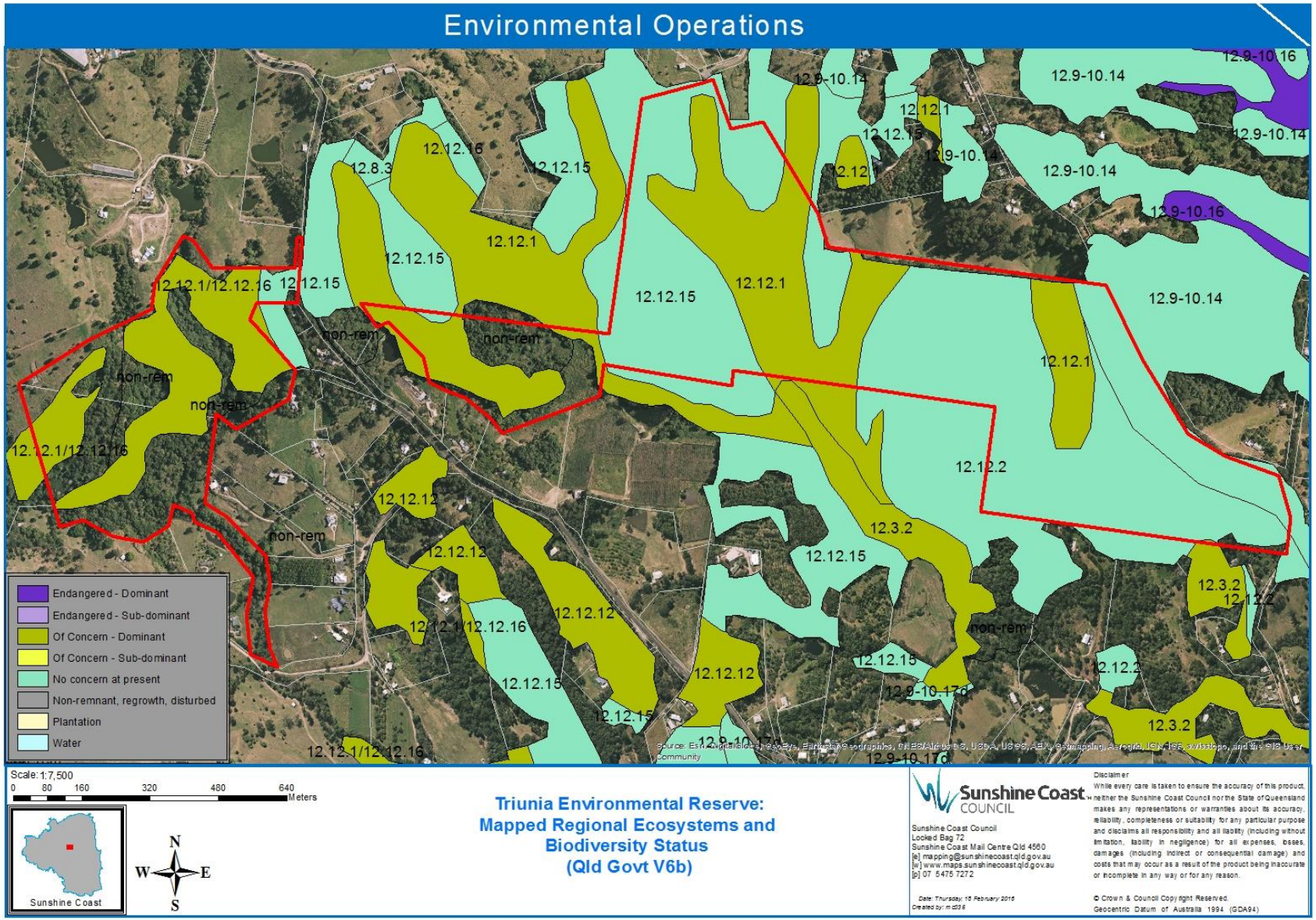
d) Queensland Government mapped regional ecosystems (Vegetation Management Class) and Land zones



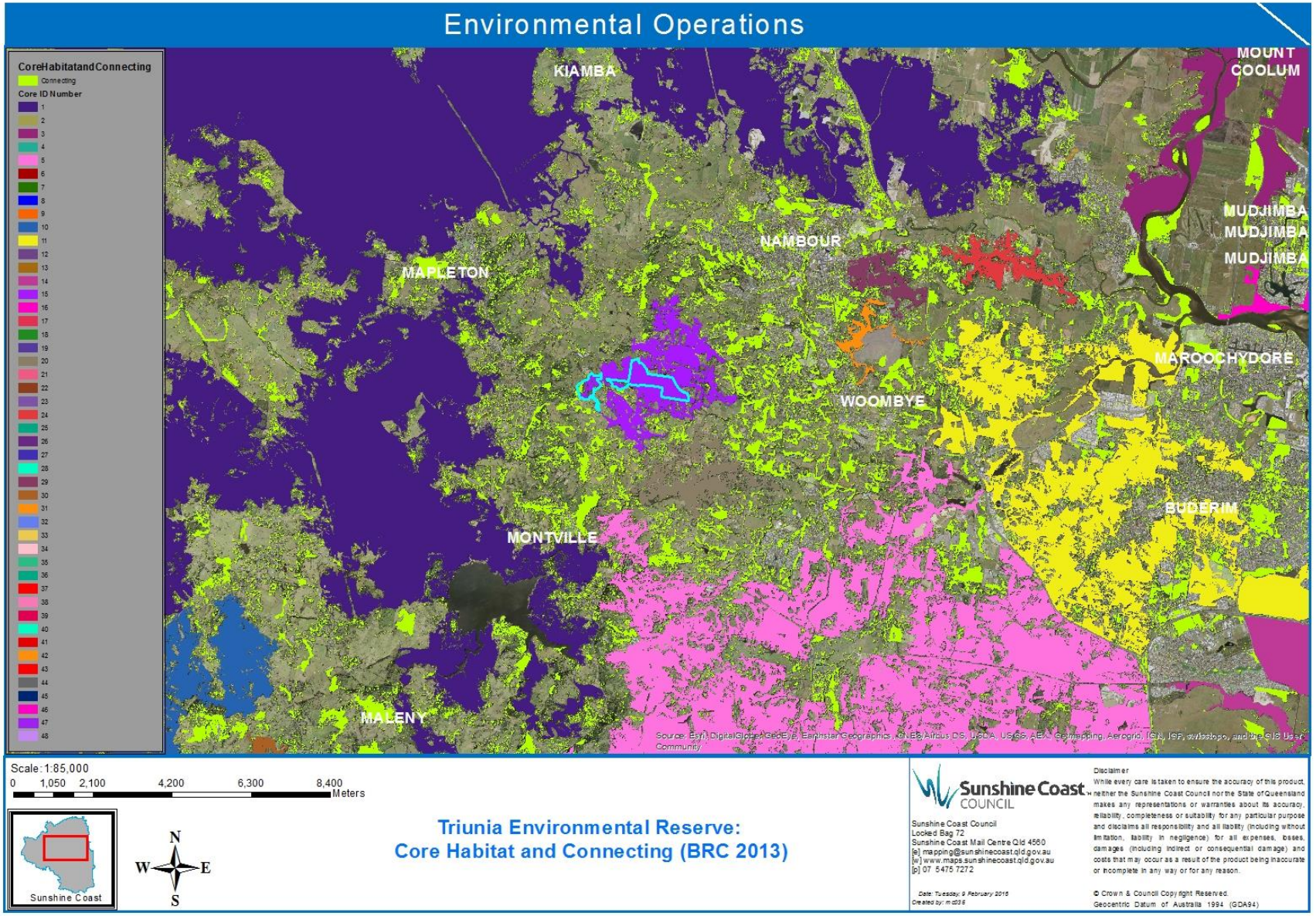
e) Queensland Government mapped High Value Regrowth



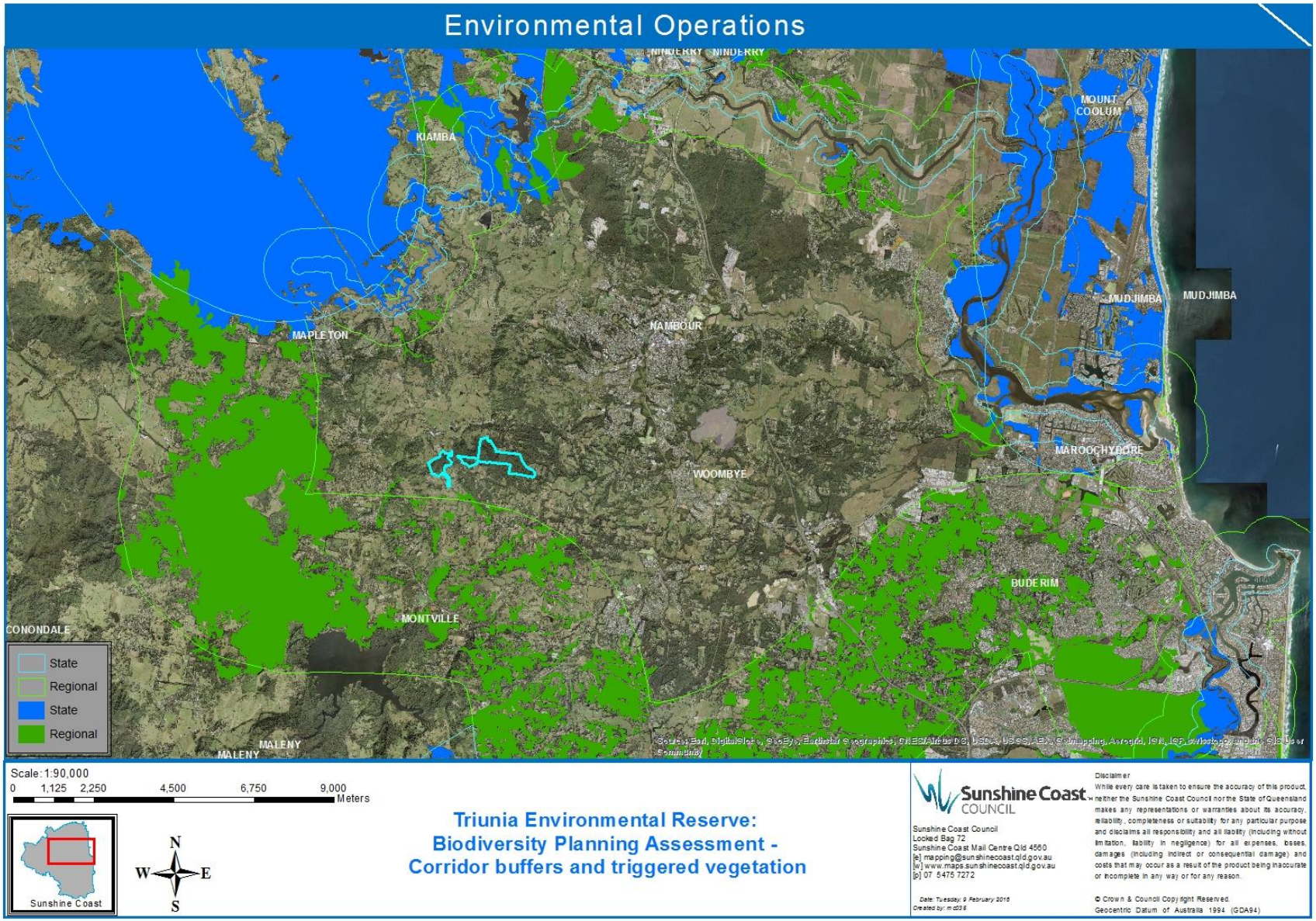
f) Queensland Government mapped regional ecosystems (Biodiversity Status)



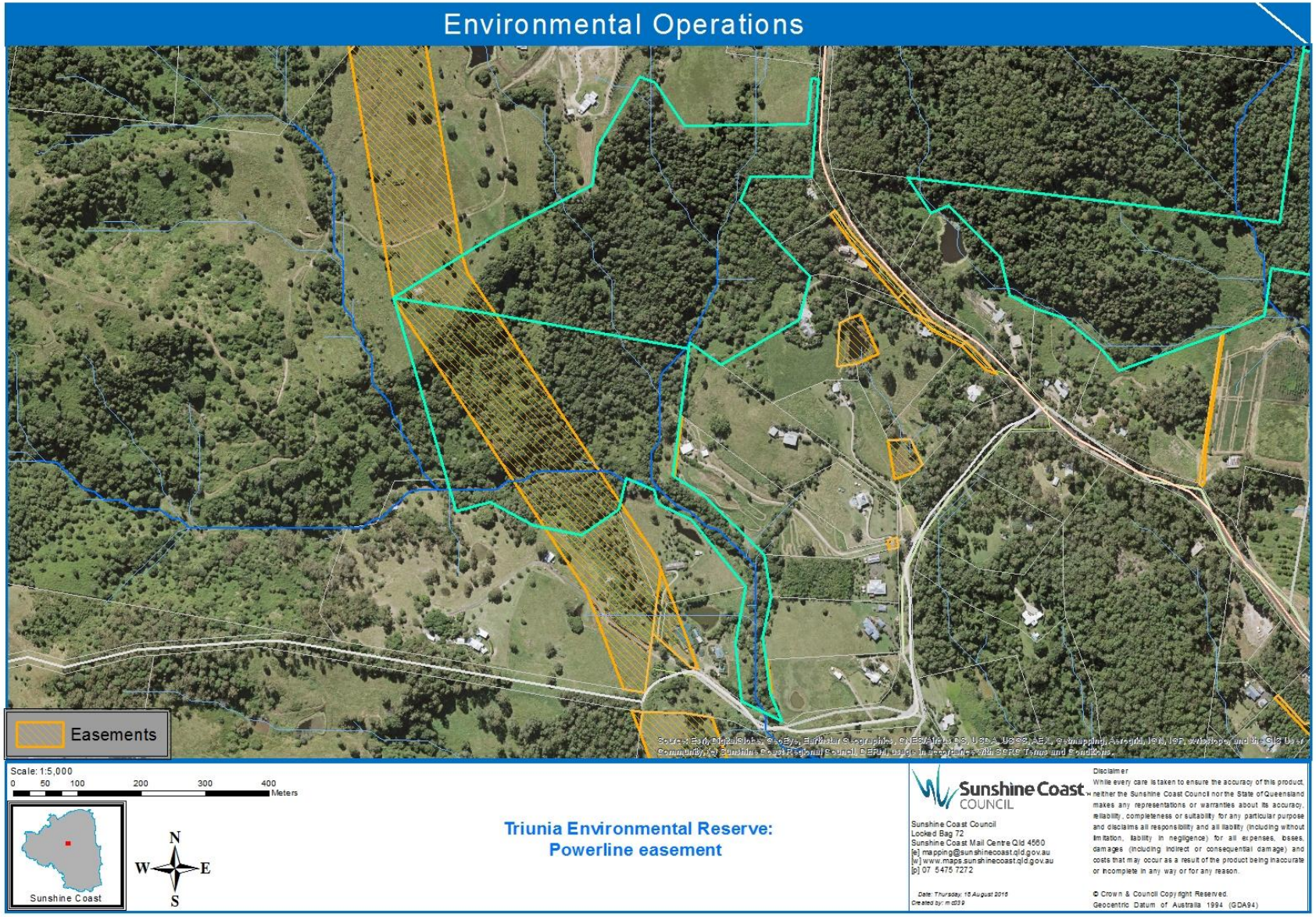
g) Core habitat and connecting



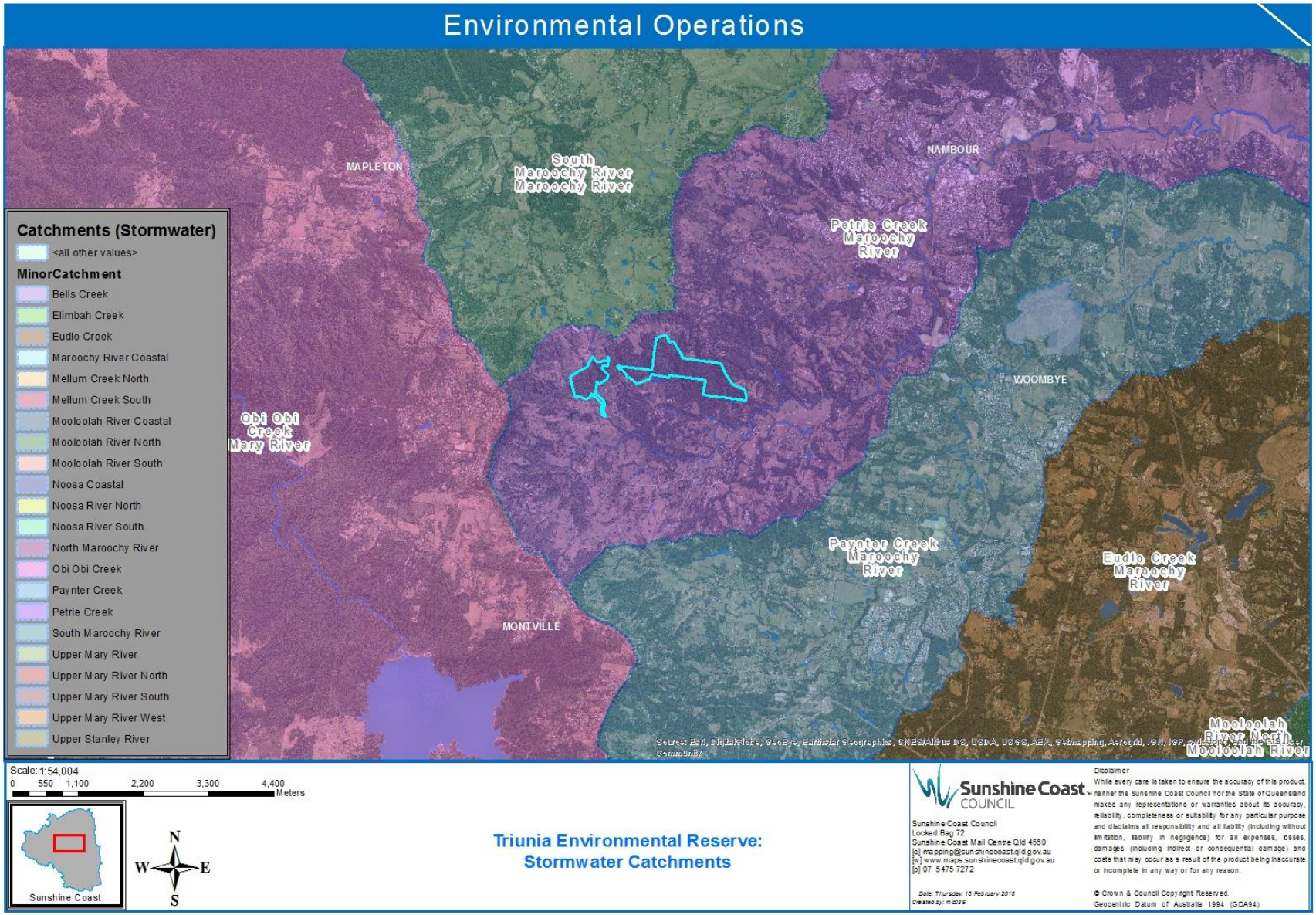
h) State and regional corridors



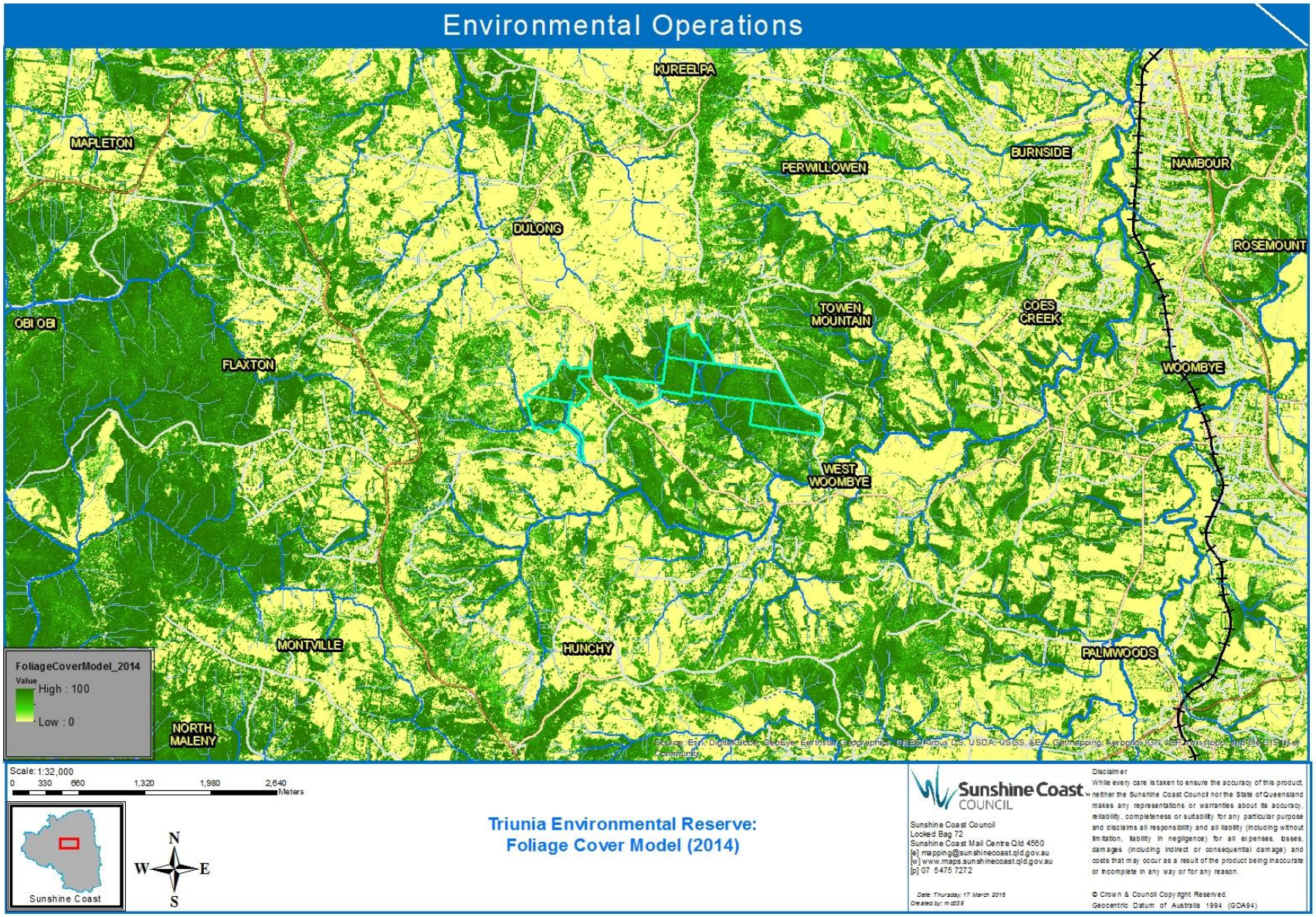
i) Powerline easement



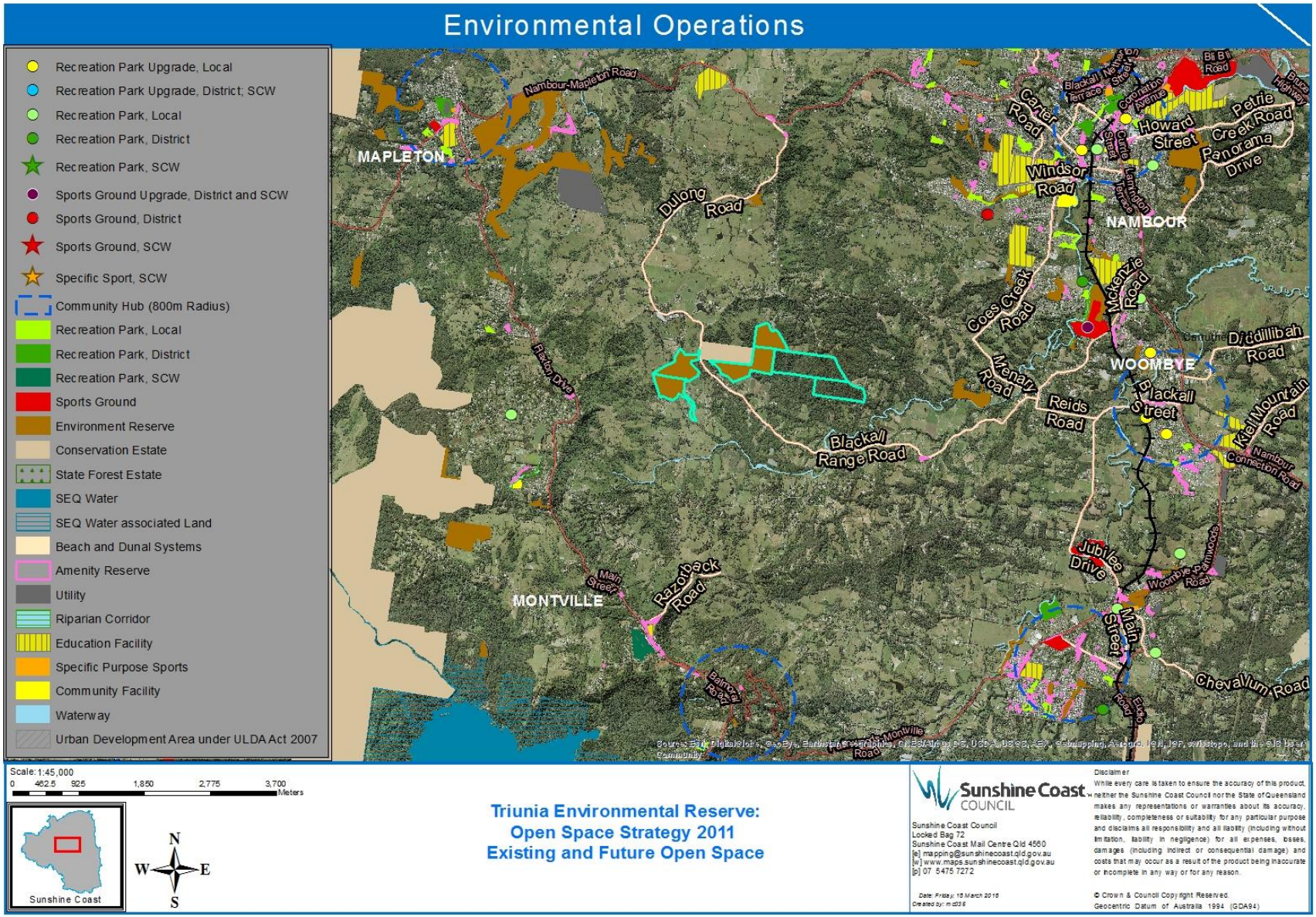
j) Stormwater catchments



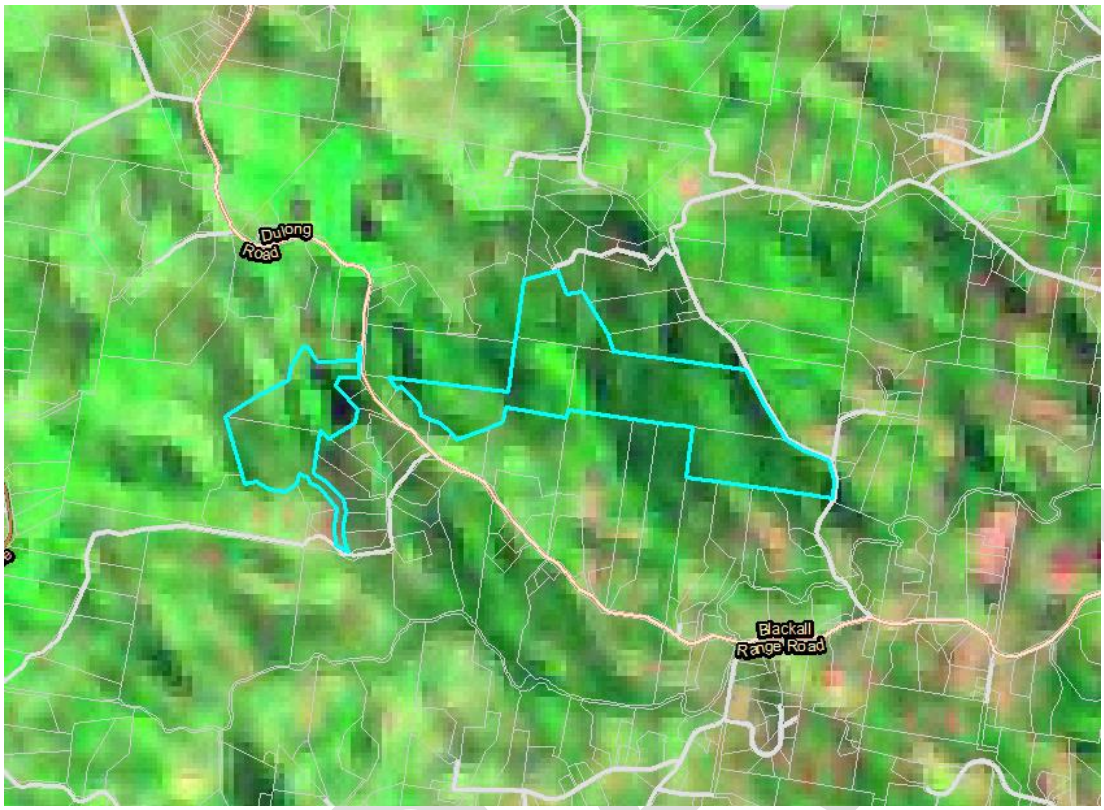
k) Foliage Cover Model showing connectivity values at Triunia Environmental Reserve



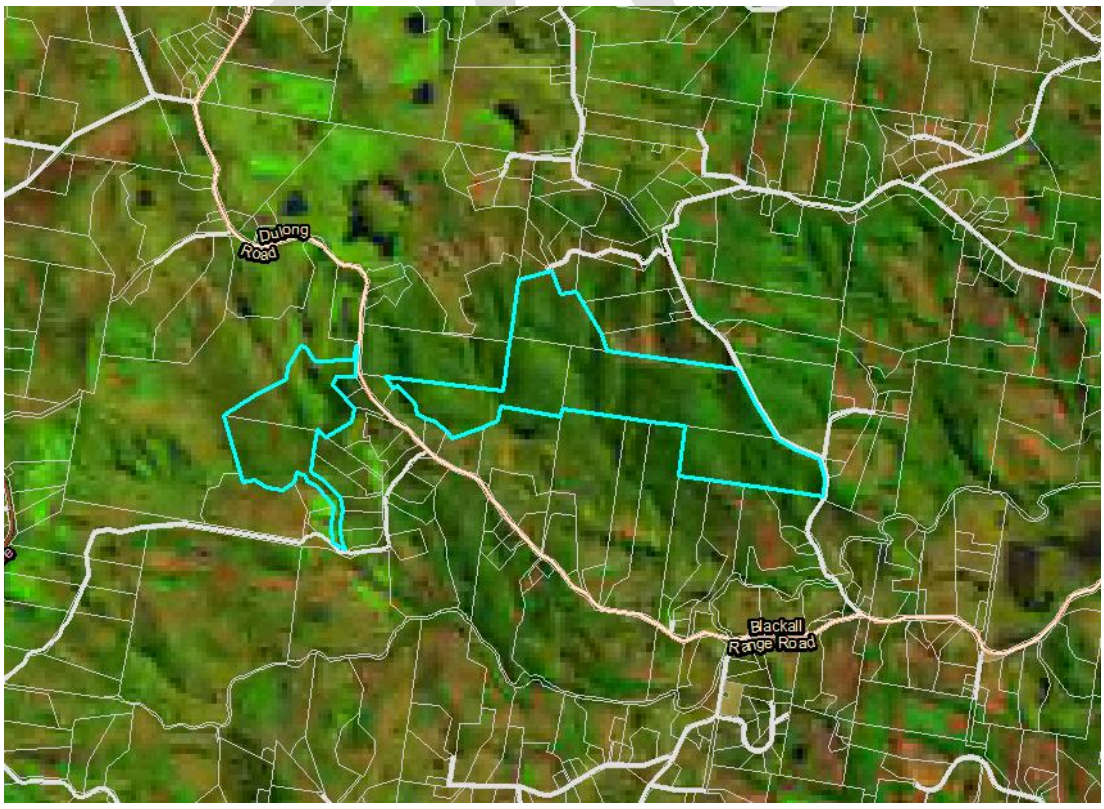
I) SCC Regional Open Space Planning Areas (existing and future)



Appendix 3: Comparison of satellite images showing there has been no broadscale clearing in the area surrounding Triunia Environmental Reserve between 1977 and 1995.



b) 1977



c) 1995

Appendix 4: Sunshine Coast Priority regional ecosystems[1]

4a) Status of vegetation communities on the Sunshine Coast in 2015

RE	SCLGA Pre-clearing extent (Ha)	SCLGA Current extent (Ha)	SCLGA Vulnerable Loss (%)	Conservation status (VM ACT)	SCLGA Poorly Conserved REs	Extent currently protected (ha)	Additional area required to adequately represent (ha)	SEQ poorly Conserved	EPBC EEC/ LRS	Target RE
Eucalypt										
12.9-10.14a	3,819	1,426	63	Least Concern	✓	180 (4.7%)	202			✓
12.12.2	12,284	9,335	24	Least Concern	-	6,018 (49%)				
12.12.15	16,053	11,633	28	Least Concern	-	5,881 (36.3%)				
12.12.15a	5,692	2,969	48	Least Concern	-	718 (12.6%)				
12.12.15b	531	501	6	Least Concern	-	346 (65.1%)				
Rainforest										
12.12.1	5,386	4,058	25	Of Concern	-	2,687 (49.9%)			✓	✓
12.12.16	3,878	1,562	60	Least Concern	-	552 (14.2%)			✓	✓

A regional ecosystem is considered to be a 'target' based on one or more of the following factors: 1) VM ACT *Endangered* conservation status; 2) Vulnerable at a SCLGA scale having lost more than 70% of its Sunshine Coast pre-clearing extent; 4) Poorly conserved at a SCLGA scale (>10% of SC pre-clearing extent protected); 5) Poorly conserved at a SEQ scale (>10% of SEQ pre-clearing extent protected); 6) Commonwealth EPBC listed 'Critically Endangered' ecosystems (Lowland sub-tropical rainforest)

[1] The Biodiversity Report 2015 for the Sunshine Coast Local Government is an inaugural report that uses 2010-12 data (with some 2014 conservation estate data i.e. recent Levy acquisitions included). Council is currently embarking on a second report which will enable comparisons.

4b) Extent of observed regional ecosystems in Sunshine Coast conservation estate

RE	Pre-clearing extent	Current Extent	Protected areas (Ha)					Voluntary Conservation Areas (Ha)	Total extent of RE within conservation estate (Ha)
			Nature Refuge	Covenant	State	Council	Total extent in protected areas	Land for Wildlife	
Eucalypts									
12.9-10.14a	3,819	1,426	36	33	63	48	180	86	266
12.12.2	12,284	9,335	0	75	5874	68	6,018	409	6,427
12.12.15	16,053	11,633	100	88	5,351	343	5,881	851	6,732
12.12.15a	5,692	2,969	80	16	597	24	718	357	1,075
12.12.15b	531	501	6	0	340	0	346	9	355
Rainforest									
12.12.1	5,386	4,058	57	33	2,536	61	2,687	304	2,991
12.12.16	3,878	1,562	38	37	360	118	552	151	703

Appendix 5. Flora Species Inventory

Scientific Name	Common Name	Family	Form	Status (EPBC /NCA /SCC)
Abrophyllum ornans	Native Hydrangea	Escalloniaceae	S/T	
Acacia bakeri	Marblewood	Mimosaceae	T	
Acacia disparrima (syn. aulacocarpa)	Hickory Wattle	Mimosaceae	T	
Acacia falcata	Sickle-leaf Wattle	Mimosaceae	S	
Acacia longissima	Narrow-leaved Wattle	Mimosaceae	T	
Acacia maidenii	Maiden's Wattle	Mimosaceae	S	
Acacia melanoxylon	Blackwood	Mimosaceae	T	
Acacia o'shanesii		Mimosaceae	T	
Acalypha capillipes	Acalypha	Euphorbiaceae	S	
Acalypha nemorum	Southern Acalypha	Euphorbiaceae	S	
Ackama paniculosa (Syn. *Caldcluvia)*	Soft Corkwood	Cunoniaceae	T	
Acmena hemilampra ssp hemilampra	Broad-Leaved Lilly Pilly	Myrtaceae	T	
Acmena ingens	Southern Satinash	Myrtaceae	T	
Acmena smithii	Narrow-leaved Lilly Pilly	Myrtaceae	S/T	
Acronychia baeuerlenii	Byron Bay Acronychia	Rutaceae	T	
Acronychia laevis	Glossy Acronychia	Rutaceae	S/T	
Acronychia oblongifolia	Yellowwood	Rutaceae	T	
Acronychia pauciflora	Soft Acronychia	Rutaceae	T	
Acronychia pubescens	Hairy Acronychia	Rutaceae	ST	
Acronychia wilcoxiana	Silver Aspen	Rutaceae	T	
Actephila lindleyi	Actephila	Phyllanthaceae	T	
Adiantum aethiopicum	Common Maidenhair	Adiantaceae	F	
Adiantum diaphanum	Filmy Maidenhair	Adiantaceae	F	
Adiantum formosum	Giant Maidenhair	Adiantaceae	F	
Adiantum hispidulum	Rough Maiden Hair	Adiantaceae	F	
Adiantum silvaticum	Forest Maidenhair	Adiantaceae	F	
Ailanthus triphysa	White Bean	Simaroubaceae	T	
Akania bidwillii	Turnip Wood	Akaniaceae	T	
Alangium villosum ssp polyosmoides	Canary Muskheart	Alangiaceae	T	//LSF
Alchornea ilicifolia	Native Holly	Euphorbiaceae	S	
Alectryon reticulatus	Alectryon	Sapindaceae	T	
Alectryon tomentosus	Red Jacket	Sapindaceae	T	
Allocasuarina torulosa	Forest She-oak	Casuarinaceae	T	
Alocasia brisbanensis	Cunjevoi	Araceae	H	
Alphitonia excelsa	Soapy Ash	Rhamnaceae	T	
Alpinia arundelliana	Small Native Ginger	Zingiberaceae	H	
Alpinia caerulea	Native Ginger	Zingiberaceae	H	
Alternanthera denticulata	Lesser Joyweed	Amaranthaceae	H	
Alyxia ruscifolia	Chain Fruit	Apocynaceae	S	
Amorphospermum antilogum	Brown pearwood	Sapotaceae	T	
Amyema miquelii	Box Mistletoe	Loranthaceae	P	
Amyema sp	Mistletoe	Loranthaceae	P	
Aneilema acuminatum	Pointed Wandering	Commelinaceae	H	
Anthocarapa nitidula	Incense Cedar	Meliaceae	T	
Aphananthe philippinensis	Rough Leaved Elm	Ulmaceae	T	
Arachniodes aristata	Prickly Shield Fern	Dryopteridaceae	F	
Araucaria bidwillii	Bunya Pine	Araucariaceae	T	//LSF
Araucaria cunninghamii v cunninghamii	Hoop Pine	Araucariaceae	T	

Scientific Name	Common Name	Family	Form	Status (EPBC /NCA /SCC)
Archidendron grandiflorum	Fairy Paint Brushes	Mimosaceae	T	
Archirhodomyrtus beckleri	Rose Myrtle	Myrtaceae	S	
Archontophoenix cunninghamiana	Piccabeen Palm	Arecaceae	T	
Argyrodendron actinophyllum	Mackay Oak	Sterculiaceae	T	//LSF
Argyrodendron sp. Kin Kin	Rusty Tulip Oak	Sterculiaceae	T	
Argyrodendron trifoliolatum	Brown Tulip Oak	Sterculiaceae	T	
Arthropteris beckleri	Small Climbing Fern	Nephrolepidaceae	F	
Arthropteris tenella	Climbing Jointed Fern	Nephrolepidaceae	F	
Arytera distylis	Twin-Leaf Coogera	Sapindaceae	T	
Arytera divaricata	Coogera	Sapindaceae	T	
Asplenium attenuatum	Spleenwort	Aspleniaceae	F	
Asplenium australasicum	Bird's Nest Fern	Aspleniaceae	F	
Asplenium polyodon	Mare's Tail Fern	Aspleniaceae	F	
Astrotricha latifolia (syn. floccosa)		Araliaceae	S	
Atalaya multiflora	Broad-Leaved Whitewood	Sapindaceae	T	
Atalaya salicifolia	White wood	Sapindaceae	T	
Atractocarpus chartaceus (syn.Randia)	Narrow-leaved Gardenia	Rubiaceae	S	
Auranticarpa rhombifolia	Hollywood	Pittosporaceae	T	
Austromyrtus glabra	Narrow_leaved Midyim	Myrtaceae	S	//LSF
Austrosteenisia blackii	Blood Vine	Fabaceae	V	
Austrosteenisia glabristyla	Giant Blood Vine	Fabaceae	V	
Backhousia citriodora	Lemon Myrtle	Myrtaceae	ST	
Backhousia myrtifolia	Cinnamon Myrtle	Myrtaceae	S	
Backhousia sciadophora	Shatterwood	Myrtaceae	T	
Backhousia subargentea (syn Choricarpia)	Giant Ironwood	Myrtaceae	T	//LSF
Balanophora fungosa	Drumsticks	Balanophoraceae	P	//LSF
Baloghia inophylla	S Bloodwood	Euphorbiaceae	T	
Banksia integrifolia ssp compar	Inland Banksia	Proteaceae	T	
Beilschmiedia elliptica	Grey Walnut	Lauraceae	T	
Beilschmiedia obtusifolia	Blush Walnut	Lauraceae	T	
Blechnum cartilagineum	Gristle Fern	Blechnaceae	F	
Bosistoa medicinalis	Eumundi Bosistoa	Rutaceae	T	//LSF
Bosistoa selwynii	Heart-Leaved Bosistoa	Rutaceae	T	
Bosistoa transversa	Three-Leaved Bosistoa	Rutaceae	T	V//
Bouchardatia neurococca	Union Nut	Rutaceae	T	
Brachychiton bidwillii	Rusty Kurrajong	Sterculiaceae	S	
Brachychiton discolor	Lacebark, Pink Kurrajong	Sterculiaceae	T	
Breynia oblongifolia	Coffee Bush	Phyllanthaceae	S	
Bridelia exaltata	Scrub Ironbark	Phyllanthaceae	T	
Brunoniella australis	Blue Trumpet	Acanthaceae	H	
Brunoniella spiciflora	Stream Trumpet	Acanthaceae	H	
Caelospermum paniculatum (syn. Coelospermum)	Coelospermum	Rubiaceae	V	
Caesalpinia scortechinii	Large Prickle Vine	Caesalpiniaceae	V	
Caesalpinia subtropica	Mother-in-Law Vine	Caesalpiniaceae (Fabaceae)	V	
Calamus muelleri	Lawyer Cane	Arecaceae	V	
Calanthe triplicata	Christmas Orchid	Orchidaceae	O	
Callerya megasperma (syn. Millettia)	Native Wisteria	Fabaceae	V	
Callicarpa pedunculata	Velvet Leaf	Verbenaceae	S	

Scientific Name	Common Name	Family	Form	Status (EPBC /NCA /SCC)
Calochlaena dubia	Soft Bracken	Dicksoniaceae	F	
Canarium australasicum	Mango Bark	Burseraceae	T	
Canthium odoratum	shiny-leaved Canthium	Rubiaceae	T	
Capparis arborea	Native Pomegranate	Capparaceae	T	
Capparis sarmentosa	Scrambling Caper	Capparaceae	V	
Capparis velutina	Hairy Caper	Capparaceae	V	
Carex horsfieldii	Large-Leaf Carex	Cyperaceae	Se	
Carex maculata		Cyperaceae	Se	
Carissa ovata	Currant Bush	Apocynaceae	S	
Carissa spinarum	Currant Bush	Apocynaceae	S	
Carronia multisepalea	Southern Carronia	Menispermaceae	V	//LSF
Casearia multinervosa	Casearia	Flacourtiaceae	S/T	
Cassytha pubescens	Downy Dodder	Lauraceae	P	
Castanospermum australe	Black Bean	Fabaceae	T	
Castanospora alphandii	Brown Tamarind	Sapindaceae	T	
Cayratia clematidea	Slender Grape	Vitaceae	V	
Celastrus subspicata	Large Staff Vine	Celastraceae	V	
Celtis paniculata	Native Celtis	Ulmaceae	T	
Centella asiatica	Pennywort	Apiaceae	H	
Centratherum sp.	Centrantherum	Asteraceae	H	
Cheilanthes distans	Bristle Cloak Fern	Sinopteridaceae	F	
Cheilanthes sieberi ssp sieberi	Mulga Fern	Adiantaceae	F	
Choricarpia subargentea	Giant Ironwood	Myrtaceae	T	//LSF
Christella dentata	Creek Fern	Thelypteridaceae	F	
Cinnamomum oliveri	Oliver's Sassafras	Lauraceae	T	
Cissus antarctica	Kangaroo V, Native Grape	Vitaceae	V	
Cissus hypoglauca	Five-Leaved Grape	Vitaceae	V	
Cissus sterculiifolia	Long-Leaved Grape	Vitaceae	V	
Citriobatus pauciflorus	Orange Thorn	Pittosporaceae	SH	
Citronella moorei	Churnwood	Leptaulaceae	T	
Citrus australis (syn Microcitrus)	Native Lime	Rutaceae	S/T	
Claoxylon australe	Brittlewood	Euphorbiaceae	T	
Cleistanthus cunninghamii	Cleistanthus	Euphorbiaceae	S/T	
Clematis glycinoides	Headache Vine	Ranunculaceae	V	
Clerodendron tomentosum	Hairy Clerodendron	Verbenaceae	S	
Clerodendrum floribundum	Lolly Bush	Lamiaceae	T	
Coatesia paniculata	Axe-Breaker	Rutaceae	T	
Coelospermum paniculatum	Coelospermum	Rubiaceae	V	
Commelina diffusa	Wandering Jew	Commelinaceae	C	
Commelina lanceolata	Qld Wandering Sailor	Commelinaceae	H	
Commersonia bartramia	Brown Kurrajong	Byttneriaceae	S/T	
Cordyline petiolaris	Broad-Leaved Palm Lily	Laxmanniaceae	S	
Cordyline rubra	Red-Fruited Palm Lily	Laxmanniaceae / Dracaenaceae	P	
Corymbia intermedia (syn Eucalyptus)	Pink Bloodwood	Myrtaceae	T	
Corynocarpus rupestris ssp arborescens	Southern Corynocarpus	Corynocarpaceae	T	/V/LSF
Croton acronychioides	Thick-Leaved Croton	Euphorbiaceae	T	
Croton insularis	Silver Croton	Euphorbiaceae	T	
Croton stigmatosus	White Croton	Euphorbiaceae	T	
Cryptocarya bidwillii	Yellow Laurel	Lauraceae	T	

Scientific Name	Common Name	Family	Form	Status (EPBC /NCA /SCC)
Cryptocarya erythroxylon	Pigeonberry Ash	Lauraceae	T	
Cryptocarya glaucescens	Jackwood	Lauraceae	T	
Cryptocarya laevigata	Glossy Laurel	Lauraceae	S	
Cryptocarya macdonaldii	Cooloola Laurel	Lauraceae	T	
Cryptocarya microneura	Brown Jack	Lauraceae	T	
Cryptocarya obovata	Pepperberry	Lauraceae	T	
Cryptocarya onoprienkoana		Lauraceae	T	
Cryptocarya schlerophylla	Thick-leaf Laurel	Lauraceae	S/T	
Cryptocarya triplinervis v triplinervis	Three-Veined Laurel	Lauraceae	T	
Cupaniopsis anacardioides	Tuckeroo	Sapindaceae	T	
Cupaniopsis parvifolia	Small-Leaved Tuckeroo	Sapindaceae	T	
Cupaniopsis serrata	Smooth Tuckeroo	Sapindaceae	S/T	
Cuttsia viburnea	Native Elderberry	Grossulariaceae	T	
Cyanthillium cinereum	Purple Fleabane	Asteraceae	H	
Cyathea cooperi	Scaly Tree Fern	Cyatheaceae	T	
Cyathea leichhardtiana	Prickly Tree Fern	Cyatheaceae	T	
Cyclophyllum coprosmoides	Coast Canthium	Rubiaceae	T	
Cyclophyllum spathulatum	Jilaban Tree	Rubiaceae	S	
Cymbidium madidum	Buttercup	Orchidaceae	O	
Cymbidium suave	Scented Orchid	Orchidaceae	O	
Cymbopogon refractus	Barbwire Grass	Poaceae	G	
Cynanchum bowmanii	Pear-Fruited Milk V	Asclepiadaceae	V	
Cyperus bowmannii		Cyperaceae	Se	
Cyperus enervis		Cyperaceae	Se	
Cyperus gracilis		Cyperaceae	Se	
Cyperus laevis	Slender Shrub	Cyperaceae	Se	
Cyperus sp.		Cyperaceae	Se	
Cyperus tetraphyllus		Cyperaceae	Se	
Daphnandra sp.MacPherson Ra (syn. micrantha)	Socketwood	Atherospermataceae	T	
Davallia pyxidata	Hare's Foot Fern	Davalliaceae	F	
Decaspermum humile	Silky Myrtle	Myrtaceae	T	
Deeringia arborescens	Climbing Deeringia	Amaranthaceae	V	
Dendrobium aemulum	Ironbark Orchid	Orchidaceae	O	
Dendrobium monophyllum	Lily Of The Valley	Orchidaceae	O	
Dendrobium tetragonum	Spider Orchid	Orchidaceae	O	
Dendrocnide excelsa	Giant Stinging Tree	Urticaceae	T	
Dendrocnide moroides	Gympie Stinger	Urticaceae	S	
Dendrocnide photinophylla	Shiny-leaved Stinging Tree	Urticaceae	T	
Denhamia celastroides	Orange Boxwood	Celastraceae	T	
Derris involuta	Native Derris	Fabaceae	V	
Desmodium gunnii	Clover-Leaf Desmodium	Fabaceae	C	
Desmodium rhytidophyllum	Native Desmodium	Fabaceae	C	
Dianella caerulea	Blue Flax Lily	Phormiaceae	H	
Dianella sp.	Flax Lily	Phormiaceae	H	
Dinosperma melanophloia (syn. Melicope)	Black-barked Doughwood	Rutaceae	T	
Dioscorea transversa	Native Yam	Dioscoreaceae	V	
Diospyros australis	Yellow Persimmon	Ebenaceae	T	
Diospyros ellipticifolia var. ebenus	Shiny-leaved Ebony	Ebenaceae	ST	

Scientific Name	Common Name	Family	Form	Status (EPBC /NCA /SCC)
Diospyros ellipticifolius	Shiny Ebony	Ebenaceae	S	//LSF
Diospyros fasciculosa	Grey Ebony	Ebenaceae	T	
Diospyros pentamera	Myrtle Ebony	Ebenaceae	T	
Diplocyclos palmatus	Striped Cucumber	Cucurbitaceae	V	
Diploglottis australis (syn. cunninghamii)	Native Tamarind	Sapindaceae	T	
Dipodium variegatum	Blotched Hyacinth Orchid	Orchidaceae	O	
Dissiliaria baloghioides	Blackheart, Hauer	Picrodendraceae	T	
Dockrillia linguiformis (Syn. *Dendrobium linguiforme)*	Tongue Orchid	Orchidaceae	O	
Dockrillia mortii	Slender Pencil Orchid	Orchidaceae	O	
Dockrillia teretifolia (Syn. Dendrobium teretifolium)	Thin Pencil Orchid	Orchidaceae	O	
Dodonaea viscosa	Hop Bush	Sapindaceae	S	
Doodia aspera	Prickly Rasp Fern	Blechnaceae	F	
Doodia caudata v caudata	Small Rasp Fern	Blechnaceae	F	
Doodia heterophylla	Varied Rasp Fern	Blechnaceae	F	
Drynaria rigidula	Basket Fern	Polypodiaceae	F	
Drypetes deplanchei (syn australasica)	Yellow Tulip	Euphorbiaceae	T	
Dysoxylum mollisimum ssp. molle (syn. muelleri)	Red Bean	Meliaceae	T	
Dysoxylum rufum	Hairy Rosewood	Meliaceae	T	
Eclipta prostrata	Twin Heads	Asteraceae	H	
Ehretia acuminata	Koda	Boraginaceae	T	
Elaeocarpus eumundi	Smooth-leaved Quandong	Elaeocarpaceae	T	
Elaeocarpus grandis	Blue Quandong	Elaeocarpaceae	T	
Elaeocarpus obovatus	Hard Quandong	Elaeocarpaceae	T	
Elaeocarpus reticulatus	Blueberry Ash	Elaeocarpaceae	ST	
Elaeodendron australe v australe	Red-Fruited Olive Plum	Celastraceae	T	
Elatostema reticulatum	Rainforest Spinach	Urticaceae	H	
Elattostachys nervosa	Green Tamarind	Sapindaceae	T	
Elattostachys xylocarpa	White Tamarind	Sapindaceae	T	
Embelia australiana	Embelia Vine	Myrsinaceae	V	
Emelia sonchifolius	Emelia	Asteraceae	H	
Endiandra discolor	Domatia Tree	Lauraceae	T	
Endiandra muelleri	Green-leaved Rose Walnut	Lauraceae	ST	
Endiandra pubens	Hairy Walnut	Lauraceae	T	
Entolasia stricta	Wiry Panic	Poaceae	G	
Erythrina numerosa#	Brush Coral Tree	Fabaceae	T	
Eucalyptus grandis	Flooded Gum	Myrtaceae	T	
Eucalyptus microcorys	Tallowwood	Myrtaceae	T	
Eucalyptus pilularis	Black Butt	Myrtaceae	T	
Eucalyptus propinqua	Small-Fruited Grey Gum	Myrtaceae	T	
Eucalyptus tereticornis	Forest Red Gum	Myrtaceae	T	
Eupomatia bennettii	Small Bolwarra	Eupomatiaceae	S	
Eupomatia laurina	Native Guava	Eupomatiaceae	S	
Euroschinus falcatus	Ribbonwood	Anacardiaceae	T	
Eustrephus latifolius	Wombat Berry	Luzuriagaceae	V	
Everistia vaccinifolia v nervosa	Small-leaved Canthium	Rubiaceae	T	

Scientific Name	Common Name	Family	Form	Status (EPBC /NCA /SCC)
Everistia vacciniifolia var vacciniifolia (syn Canthium vacciniifolium)		Rubiaceae	S	
Excoecaria dallachyana	S Poison Tree	Euphorbiaceae	T	
Ficus coronata	Creek Sandpaper Fig	Moraceae	S/T	
Ficus fraseri	Sandpaper Fig	Moraceae	T	
Ficus macrophylla	Moreton Bay Fig	Moraceae	T	
Ficus obliqua	Small-leaved Fig	Moraceae	T	
Ficus rubiginosa	Rock Fig	Moraceae	T	
Ficus superba	Deciduous Fig	Moraceae	T	
Ficus virens	White Fig	Moraceae	T	
Ficus watkinsiana	Strangling Fig	Moraceae	T	
Flagellaria indica	Supplejack	Flagellariaceae	V	
Flindersia australis	Crows Ash	Rutaceae	T	
Flindersia bennettiana	Bennett's Ash	Rutaceae	T	
Flindersia schottiana	Bumpy Ash	Rutaceae	T	
Flindersia xanthoxyla	Long Jack	Rutaceae	T	
Floydia praealta	Ball Nut	Proteaceae	T	V/V/LSF
Freycinetia scandens	Climbing Pandanus	Pandanaceae	V	
Gahnia aspera	Sword-Shrub	Cyperaceae	Se	
Geitonoplesium cymosum	Scrambling Lily	Philesiaceae (Luzuriagaceae)	V	
Geranium solanderi	Native Geranium	Geraniaceae	H	
Glochidion ferdinandi	Cheese Tree	Phyllanthaceae	T	
Glochidion sumatranum	Umbrella Cheese T	Phyllanthaceae	T	
Glycine clandestina	Lover's Twine	Fabaceae	C	
Gmelina leichhardtii	White Beech	Lamiaceae	T	
Goodenia rotundifolia	Star Goodenia	Goodeniaceae	C	
Gossia acmenoides	S Ironwood	Myrtaceae	T	
Gossia bidwillii (syn Austromyrtus)	Python Tree	Myrtaceae	S/T	
Gossia hillii	Scaly Myrtle	Myrtaceae	ST	
Gossia inophloia (syn Austromyrtus)	Thread-Barked Myrtle	Myrtaceae	S	/NT/LSF
Graptophyllum reticulatum	Buderim Holly	Acanthaceae	S	E/E/LSF
Grevillea hilliana	White Yiel Yiel	Proteaceae	T	//LSF
Grewia latifolia	Dogs Nuts	Malvaceae	S	
Guilfoylia monostylis	Native Plum	Simaroubaceae	T	
Guioa acutifolia	Northern Guioa	Sapindaceae	T	//LSF
Guioa semiglauca	Wild Quince	Sapindaceae	T	
Gymnostachys anceps	Settler's Flax	Araceae	H	
Halfordia kendack	Saffron-Heart	Rutaceae	T	
Hardenbergia violacea	False Sarsparilla	Fabaceae	C	
Harpullia hillii	Blunt-Leaved Tulip	Sapindaceae	T	
Harpullia pendula	Tulipwood	Sapindaceae	T	
Hedraianthera porphyropetala	Hedraianthera	Celastraceae	S	
Helicia glabriflora	Pale Oak	Proteaceae	T	
Hibbertia scandens	Snake Vine	Dilleniaceae	V	
Hippocratea barbata	Knot Vine	Celastraceae	V	
Hodgkinsonia ovatiflora	Golden Ash	Rubiaceae	T	
Homalanthus nutans (Syn. *Omalanthus populifolius, Homalanthus populifolius)*	Bleeding Heart	Euphorbiaceae	ST	
Homalium alnifolium	Boxwood	Flacourtiaceae	T	

Scientific Name	Common Name	Family	Form	Status (EPBC /NCA /SCC)
Hovea acutifolia	Pointed-Leaf Hovea	Fabaceae	S	
Hoya australis	Wax Flower	Apocynaceae	V	
Hybanthus stellarioides (Syn. *Hybanthus enneaspermus)*	Spade Flower	Violaceae	H	
Hymenosporum flavum	Native frangipani	Pittosporaceae	T	
Hypolepis muelleri	Harsh Ground Fern	Dennstaedtiaceae	F	
Hypopterygium tamarisci	Umbrella Moss	Hypopterygiacea	M	
Hypserpa decumbens	Hairy Hypserpa	Menispermaceae	V	
Imperata cylindrica	Blady Grass	Poaceae	G	
Indigofera australis	Austral Indigo	Fabaceae	S	
Ixora beckleri	Brown Coffeewood	Rubiaceae	S	
Jacksonia scoparia	Dogwood	Fabaceae	ST	
Jagera pseudorhus var pseudorhus	Foambark	Sapindaceae	T	
Jasminum dallachii	Soft Jasmine	Oleaceae	V	
Jasminum jenniae	Endangered Jasmine	Oleaceae	V	/E/LSF
Jasminum volubile (syn simplicifolium)	Single-leaf Jasmine	Oleaceae	V	
Juncus usitatus	Common Rush	Juncaceae	Se	
Lastreopsis acuminata	Shiny Shield Fern	Dryopteridaceae	F	
Lastreopsis marginans	Glossy Shield Fern	Dryopteridaceae	F	
Lastreopsis munita	Naked Shield Fern	Dryopteridaceae	F	
Legnephora moorei	Round-Leaf Vine	Menispermaceae	V	
Lepidosperma laterale	Broad Sword-Shrub	Cyperaceae	Se	
Lespedeza juncea ssp sericea	Bush Clover	Fabaceae	S	
Leucopogon juniperinus	Prickly Heath	Epacridaceae	S	
Linospadix monostachya	Walking Stick Palm	Arecaceae	S	
Litsea australis	Brown Bolly Gum	Lauraceae	T	
Litsea leefeana	Northern Brown Bolly Gum	Lauraceae	T	//LSF
Litsea reticulata	Bolly Gum	Lauraceae	T	
Livistona australis	Cabbage Palm	Arecaceae	P	
Lobelia purpurescens	White Root	Campanulaceae	H	
Lomandra laxa		Laxmanniaceae	H/G	
Lomandra longifolia	Spiny Headed Mat-Rush	Laxmanniaceae	H/G	
Lophostemon confertus	Brush Box	Myrtaceae	T	
Lophostemon suaveolens	Swamp Box	Myrtaceae	T	
Macadamia integrifolia	Queensland Nut	Proteaceae	T	V/V/LSF
Macadamia ternifolia	Gympie Nut	Proteaceae	S/T	V/V/LSF
macadamia tetraphyla	Macadamia Nut	Proteaceae	T	V/V/
Macaranga tanarius	Macaranga	Euphorbiaceae	S	
Maclura cochinchinensis	Cockspur Thorn	Moraceae	V	
Macrozamia lucida	Pineapple Zamia	Zamiaceae	S	
Mallotus claoxyloides	Green Kamala	Euphorbiaceae	S	
Mallotus megadontus	Toothed Kamala	Euphorbiaceae	S	/V/LSF
Mallotus philippensis	Red Kamala	Euphorbiaceae	T	
Mallotus repandus	Creepy Mallotus	Euphorbiaceae	V	//LSF
Marsdenia coronata	Vulnerable Hairy Milk Vine	Apocynaceae	V	/V/LSF
Marsdenia micradenia	Milk Vine	Apocynaceae	V	
Marsdenia rostrata	Common Milk Vine	Apocynaceae	V	
Maytenus disperma	Taper-Leaf Orangebark	Celastraceae	T	
Medicosma cunninghamii	Pinkheart	Rutaceae	T	
*Medicosma sp. Mt. Mellum***		Rutaceae	S/T	//LSF

Scientific Name	Common Name	Family	Form	Status (EPBC /NCA /SCC)
Melaleuca salicina (syn Callistemon salignus)	White Bottle Brush	Myrtaceae	S/T	
Melia azedarach	White Cedar	Meliaceae	T	
Melicope elleryana	Pink euodia	Rutaceae	ST	
Melicope vitiflora	Leatherwood	Rutaceae	ST	
Melodinus acutiflorus	Hairy-Melodinus	Apocynaceae	V	
Melodinus australis	Bellbird Vine	Apocynaceae	V	
Melodorum leichhardtii	Zig Zag Vine	Annonaceae	V	
Microcitrus australis	Native Lime	Rutaceae	ST	
Micromelum minutum	Lime Berry	Rutaceae	T	
Microsorum scandens	Fragrant Fern	Polypodiaceae	F	
Mischarytera lautereriana	Corduroy Tamarind	Sapindaceae	T	
Mischocarpus anodontus	Veiny Pearfruit	Sapindaceae	T	
Mischocarpus australis	Red Pear Fruit	Sapindaceae	T	//LSF
Mischocarpus pyriformis	Yellow Pearfruit	Sapindaceae	T	
Morinda canthoides (Syn. M. acutifolia)	Veiny Morinda	Rubiaceae	V	
Morinda jasminoides	Sweet Morinda	Rubiaceae	V	
Myrsine subsessilis ssp subsessilis	Red Muttonwood	Myrsinaceae	T	//LSF
Myrsine variabilis (syn Rapanea)	Muttonwood	Myrsinaceae	S/T	
Neimeyera antiloga	Brown Pearwood	Sapotaceae	T	
Neimeyera chartacea	Smooth-Leaved Plum	Sapotaceae	T	
Neisosperma poweri	Milkbush	Apocynaceae	S/T	//LSF
Neolitsea australiensis	Green Bolly Gum	Lauraceae	T	
Neolitsea dealbata	White Bolly Gum	Lauraceae	T	
Niemeyera antiloga	Brown Pearwood	Sapotaceae	T	
Notelaea johnsonii	Veinless Mock-Olive	Oleaceae	T	
Notelaea longifolia	Mock Olive	Oleaceae	T	
Nothoalsomitra suberosa	Corky Cucumber	Cucurbitaceae	V	/NT/LSF
Nyssanthes diffusa	Barbwire Weed	Amaranthaceae	S	
Olea paniculata	Native Olive	Oleaceae	T	
Ophioglossum pendulum	Ribbon Fern	Ophioglossaceae	F	
Oplismenus aemulus	Rainforest Grass	Poaceae	G	
Oplismenus hirtellus ssp imbecillus	Slender panic Grass	Poaceae	G	
Oplismenus imbecillis	Basket Grass	Poaceae	G	
Oplismenus undulatifolius	Rainforest Beard Grass	Poaceae	G	
Ottochloa gracillima	Slender Forest Grass	Poaceae	G	
Ottochloa nodosa		Poaceae	G	
Pandorea floribunda	Pandorea	Bignoniaceae	V	
Pandorea jasminoides	Native Jasmine	Bignoniaceae	V	
Pandorea pandorana	Wonga Vine	Bignoniaceae	V	
Panicum decompositum var. tenuis	Native Millet	Poaceae	G	
Panicum pygmaeum	Dwarf Panic	Poaceae	G	
Pararchidendron pruinosum var pruinosum	Snowwood	Mimosaceae	ST	
Pararistolochia praevenosa	Birdwing Butterfly Vine	Aristolochiaceae	V	/NT/LSF
Parsonsia lanceolata	Rough Silkpod	Apocynaceae	V	
Parsonsia largiflorens	Large-flowered Silkpod	Apocynaceae	V	/E/LSF
Parsonsia lilacina	Crisped Silkpod	Apocynaceae	V	
Parsonsia longipetiolata	Green-leaf Silkpod	Apocynaceae	V	
Parsonsia straminea	Monkey Rope	Apocynaceae	V	
Parsonsia ventricosa	Acuminated Silkpod	Apocynaceae	V	

Scientific Name	Common Name	Family	Form	Status (EPBC /NCA /SCC)
Paspalidium distans		Poaceae	G	
Passiflora Hertiana ssp Hertiana	Native Passion Flower	Passifloraceae	V	
Pellaea falcata	Sickle Fern	Adiantaceae	F	
Pellaea nana	Dwarf Sickle Fern	Adiantaceae	F	
Pellaea paradoxa	Large Leaf Sickle Fern	Adiantaceae	F	
Pentacerus australis	Bastard's Crows Ash	Rutaceae	T	
Peperomia blanda var. floribunda (syn. leptostachya)	Rock Peperomia	Piperaceae	H	
Peperomia tetraphylla	Native Peperomia	Piperaceae	H	
Peripleura hispidula		Asteraceae	H	
Peristeranthus hillii	Drooping Tree Orchid	Orchidaceae	O	
Phyllanthus gunnii		Phyllanthaceae	H	
Phyllanthus microcladus	Small-leaf Phyllanthus	Phyllanthaceae	S	
Pilidiostigma rhytispermum	Small-leaved Plum Myrtle	Myrtaceae	S	
Piper hederaceum var hederaceum (syn novae-hollandiae)	Giant Pepper Vine	Piperaceae	V	
Pipturis argenteus	Native Mulberry	Urticaceae	S	
Pittosporum multiflorum (syn. Citriobatus pauciflorus)	Orange Thorn	Pittosporaceae	S	
Pittosporum revolutum	Hairy Pittosporum	Pittosporaceae	S	
Pittosporum undulatum	Sweet Pittosporum	Pittosporaceae	T	
Pittosporum viscidum	Black-fruited Thornbush	Pittosporaceae	S	
Planchonella australis	Black Apple	Sapotaceae	T	
Planchonella chartacea (syn Pouteria)	Coondoo	Sapotaceae	T	
Planchonella eerwah (Pouteria eerwah)	Endangered Black Plum	Sapotaceae	T	E/E/LSF
Planchonella myrsinifolia	Yellow Plumwood	Sapotaceae	T	
Planchonella pohlmaniana (syn *Pouteria)*	Yellow Boxwood	Sapotaceae	T	
Platycerium bifurcatum	Elkhorn	Polypodiaceae	F	
Platycerium superbum	Staghorn	Polypodiaceae	F	
Platylobium formosum	Handsome Flat Pea	Fabaceae	S	
Plectranthus parviflorus	Mintbush	Lamiaceae	H	
Podocarpus elatus	Brown Pine	Podocarpaceae	T	
Podolobium aciculiferum (syn Oxylobium)	Prickly Bush Pea	Fabaceae	S	
Pollia crispata	Pollia	Commelinaceae	H	
Pollia macrophylla	Large-leaved Pollia	Commelinaceae	H	
Polyalthia nitidissima	Canary Beech	Annonaceae	T	
Polyosma cunninghamii	Featherwood	Escalloniaceae	T	//LSF
Polyscias elegans	Celery Wood	Araliaceae	T	
Polyscias murrayi	White Basswood	Araliaceae	T	
Pothos longipes	Candle Vine	Araceae	V	
Pouteria laurifolia	Blush Coondoo	Sapotaceae	T	
Pouteria queenslandica (syn Planchonella laurifolia)	Blush Coondoo	Sapotaceae	T	
Premna lignum-vitae	Lignum-Vitae	Verbenaceae	T	
Pseuderanthemum variabile	Love Flower	Acanthaceae	H	
Pseudoweinmannia lachnocarpa	Rose Marara	Cunoniaceae	T	
Psilotum nudum	Skeleton Fork Fern	Psilotaceae	F	
Psychotria daphnoides	Smooth Psychotria	Rubiaceae	S	

Scientific Name	Common Name	Family	Form	Status (EPBC /NCA /SCC)
Psychotria loniceroides	Hairy Psychotria	Rubiaceae	S	
Psydrax lamprophylla	Coastal Native Coffee	Rubiaceae	T	
Psydrax odorata	Canthium	Rubiaceae	S	
Pteridium esculentum	Bracken	Dennstaedtiaceae	F	
Pteris tremula	Brake	Pteridaceae	F	
Pteris umbrosa	Jungle Bracken	Pteridaceae	F	
Pyrrosia confluens v confluens	Robber Fern	Polypodiaceae	F	
Pyrrosia rupestris	Rock Felt Fern	Polypodiaceae	F	
Quintinia verdonii	Grey Possumwood	Quintiniaceae	T	//LSF
Rhodamnia argentea	White Myrtle	Myrtaceae	T	
Rhodamnia dumicola	Rib-Fruited Malletwood	Myrtaceae	T	
Rhodamnia rubescens	Scrub Turpentine	Myrtaceae	T	
Rhodomyrtus psidioides	Native Guava	Myrtaceae	T	
Rhodosphaera rhodanthema	Deep Yellow Wood	Anacardiaceae	T	
Ripogonum album	White Supplejack	Ripogonaceae	V	
Ripogonum brevifolium	Small-leaved Supplejack	Ripogonaceae	V	
Ripogonum elseyanum	Elsey's Supplejack	Ripogonaceae	V	
Romnalda strobilacea	Vulnerable Shade Lily	Laxmanniaceae	H	V/V/LSF
Rubus moluccanus	Native Raspberry	Rosaceae	V	
Rubus parvifolius	Pink Raspberry	Rosaceae	S	
Rubus rosifolius	Rose-leaf Raspberry	Rosaceae	S	
Ryticaryum longifolium	Rare	Icacinaceae	T	
Sambucus australasica	Yellow Elderberry	Adoxaceae	T	
Sarcochilus falcatus	Orange Blossom Orchid	Orchidaceae	O	
Sarcochilus fitzgeraldii	Ravine Orchid	Orchidaceae	O	V / E /
Sarcopetalum harveyanum	Pearl Vine	Menispermaceae	V	
Sarcopteryx stipitata	Corduroy Tree	Sapindaceae	ST	
Sauropus albiflorus (syn. Phyllanthus)	Showy Sauropus	Phyllanthaceae	S	
Schizomeria ovata	Crab Apple	Cunoniaceae	T	
Scleria mackaviensis	Tufted Scleria	Cyperaceae	Se	
Scleria sphacelata	Rainforest Shrub	Cyperaceae	Se	
Scleria terrestris	Swamp Shrub	Cyperaceae	Se	
Scolopia braunii	Flintwood	Flacourtiaceae	T	
Senecio amygdalifolius	Peach-Leaf Groundsel	Asteraceae	H	
Senna acclinis	Rare Brush Senna	Caesalpiniaceae	S	//LSF
Siphonodon australis	Ivorywood	Celastraceae	T	
Sloanea australis ssp australis	Maiden's Blush	Elaeocarpaceae	T	//LSF
Sloanea woollsii	Yellow Carabeen	Elaeocarpaceae	T	
Smilax australis	Barbwire Vine	Smilacaceae	V	
Smilax calophylla	Sarsaparilla	Smilacaceae	V	
Smilax glyciphylla	Sweet Sarsparilla	Smilacaceae	V	
Solanum corifolium	Straggling Nightshade	Solanaceae	S	
Solanum stelligerum	Star Nightshade	Solanaceae	S	
Sorghum leiocladum	Wild Sorghum	Poaceae	G	
Stenocarpus salignus	Scrub Beefwood	Proteaceae	T	
Stenocarpus sinuatus	Wheel Of Fire	Proteaceae	T	
Stephania japonica	Tape Vine	Menispermaceae	V	
Sterculia quadrifida	Peanut T, Koralba	Sterculiaceae	T	
Streblus brunonianus	Whalebone Tree	Moraceae	T	
Strychnos psilosperma (syn. axillaris)	Strychnine Tree	Loganiaceae	T	
Symplocos thwaitesii	Buff Hazelwood	Symplocaceae	T	

Scientific Name	Common Name	Family	Form	Status (EPBC /NCA /SCC)
Syncarpia glomulifera	Turpentine	Myrtaceae	T	
Synoum glandulosum ssp glandulosum	Scentless Rosewood	Meliaceae	T	
Syzygium australe	Brush/Scrub Cherry	Myrtaceae	T	
Syzygium francisii	Giant Water Gum	Myrtaceae	T	
Syzygium luehmannii	Riberry	Myrtaceae	ST	
Syzygium oleosum	Blue Lilly Pilly	Myrtaceae	T	
Tabernaemontana pandacqui (syn. Ervatamia)	Banana Bush	Apocynaceae	S	
Tabernaemontana pseudojambosa	Tapeinosperma	Winteraceae	S	
Tapeinosperma repandulum	Southern Tapeinosperma	Myrsinaceae	T	
Tephrosia brachyodon		Fabaceae	S	
Tetrastigma nitens	Shining Native Grape	Vitaceae	V	
Thelychiton gracilicaule	Tiger Orchid	Orchidaceae	O	
Thelychiton speciosus	King Orchid	Orchidaceae	O	
Themeda triandra	Kangaroo Grass	Poaceae	G	
Tinospora smilacina	Arrow-Head Vine	Menispermaceae	V	
Toona ciliata (syn. australis)	Red Cedar	Meliaceae	S	
Trachymene incisa	Wild Parsnip	Apiaceae	H	
Trachymene procumbens	Native Parsnip	Apiaceae	H	
Tragia novae-hollandiae	Stinging Vine	Euphorbiaceae	V	
Trema tomentosa	Poison Peach	Ulmaceae	S	
Triunia robusta	Northern Spicebush	Proteaceae	S/T	E/E/LSF
Trochocarpa laurina	Tree Heath	Ericaceae	T	
Trophis scandens	Sandpaper Vine	Moraceae	V	
Tylophora paniculata	Thin-Leaved Tylophora	Apocynaceae	V	
Ventilago pubiflora	Ventilago Vine	Rhamnaceae	V	
Veronica plebeia	Trailing Speedwell	Scrophulariaceae	H	
Viola banksii	Ivy-leaved Violet	Violaceae	H	
Viola hederacea	Native Violet	Violaceae	H	
Vitex lignum-vitae	Yellow Hollywood	Lamiaceae	T	
Wikstroemia indica	Tie Bush	Tremandraceae	S	
Wilkiea huegeliana	Veiny Wilkiea	Monimiaceae	S	
Wilkiea macrophylla	Large-Leaved Wilkiea	Monimiaceae	S	
Xanthorrhoea johnsonii	Forest Grasstree	Xanthorrhoeaceae	S	
Xanthorrhoea latifolia var latifolia	Forest Grasstree	Xanthorrhoeaceae	S	
Xanthorrhoea macronema	Grasstree	Xanthorrhoeaceae	S	
Xylosma terrae-reginae	Endangered Xylosma	Flacourtiaceae	T	
Zanthoxylum brachyacanthum	Thorny Yellow-Wood	Rutaceae	T	
Zieria bifida	Brolga Park Zieria	Rutaceae	S	E/E/LSF

E = Endangered species; V = Vulnerable species; NT = Near Threatened species; LSF = Locally Significant Flora under the SCBS; **Species possibly present but not reliably identified; # Noteworthy - Only one other specimen recorded in Sunshine Coast LGA (near Kenilworth)

Appendix 6. Additional flora species recorded at Triunia National Park that have not been recorded at Triunia Environmental Reserve

Scientific Name	Common Name	Family	Status (EPBC/NC ACT /SCC)	Status (WoNS/ LPA/SCPMP)
Aneilema biflorum	Two-flowered Aneilema	Commelinaceae		
Atractocarpus benthamianus	Native Gardenia	Rubiaceae		
*Cirsium vulgare**	Spear Thistle	Asteraceae		/GEP
Dendrobium macropus subs. Gracilicaule	Delicate Stems Dendrobium	Orchidaceae		
Dianella revoluta		Phormiaceae		
Dysoxylum fraserianum	Rose Mahogany	Meliaceae		
*Emilia sonchifolia**	Emilia	Asteraceae		
*Erechtites valerianifolia**	Brazilian Fireweed	Asteraceae		
Erythrina vespertilio	Bat's Wing Coral Tree	Fabaceae		
Fontainea sp.		Euphorbiaceae		
Gossia punctata	Dotted Myrtle	Myrtaceae		
Lomandra confertifolia		Xanthorrhoeaceae		
Lomandra hystrix	Mat Rush	Xanthorrhoeaceae		
Parsonsia latifolia	Green-leaved Silkpod	Apocynaceae		
Parsonsia rotata	Corky Silkpod	Apocynaceae		
Pilidiostigma glabrum	Plum Myrtle	Myrtaceae		
Senna barclayana	Pepper-leaved Senna	Caesalpiniaceae		
*Sigesbeckia orientalis**	Indian Weed	Asteraceae		
*Solanum pseudocapsicum**	Madiera Winter Cherry	Solanaceae		
Trichosanthes subvelutina	Silky Cucumber	Cucurbitaceae		
Typhonium brownii	Black Lily	Araceae		

WoNS = Weeds of National Significance agreed by Commonwealth Governments; LPA = Queensland *Land Protection* (Pest and *Stock Route Management*) *Act* 2002; SCPMP = Sunshine Coast Local Government Area Pest Management Plan 2012-2016 categories: BC = Broad control; SM = Strategic Management; LoC = Local Control; GEP = General Environmental Pest

Appendix 7. EPBC Act Protected Matters Search extract (3km buffer) showing significant flora species that have not been recorded at Triunia Environmental Reserve

Scientific Name	Common Name	Family	Form	Status (EPBC /NC ACT /SCC)
Acacia attenuata		Mimosaceae	S	V/V/LSF
Arthraxon hispidus	Hairy-joint Grass	Poaceae	G	V/V/LSF
Cryptocarya foetida	Stinking Laurel	Lauraceae	T	V/V/LSF
Cryptostylis hunteriana	Leafless Tongue-orchid	Orchidaceae	O	V//
Phaius australis	Lesser Swamp-orchid	Orchidaceae	O	E/E/LSF
Phebalium distans	Mt Berryman Phebalium	Rutaceae	ST	CE/E/
Plectranthus torrenticola		Lamiaceae	H	E/E/LSF
Thesium australe	Austral Toadflax	Santalaceae	H	V//

Appendix 8. Fauna Species Inventory

Scientific Name	Common Name	Family	EPBC/ NC ACT/SCC
Amphibian			
Adelotus brevis	Tusked Frog	Myobatrachidae	/V/LSF
Limnodynastes peronii	Striped Marshfrog	Myobatrachidae	
Litoria fallax	Eastern Sedgefrog	Hylidae	
Litoria gracilenta	Graceful Treefrog	Hylidae	
Litoria tyleri	Southern Laughing Treefrog	Hylidae	
Litoria wilcoxii	Stony Creek Frog	Hylidae	
Mixophyes fasciolatus	Great Barred Frog	Myobatrachidae	
Bird			
Acanthiza lineata	Striated Thornbill	Acanthizidae	
Acanthiza pusilla	Brown thornbill	Acanthizidae	
Accipiter fasciatus	Brown Goshawk	Accipitridae	Marine
Aegotheles cristatus	Australian Owlet-nightjar	Aegothelidae	
Ailuroedus crassirostris	Green Catbird	Ptilonorhynchidae	
Alectura lathami	Australian Brush-turkey	Megapodiidae	
Alisterus scapularis	Australian King Parrot	Psittacidae	
Anas superciliosa	Pacific Black Duck	Anatidae	
Aquila audax	Wedge-tailed Eagle	Accipitridae	//LSF
Aviceda subcristata	pacific baza	Accipitridae	
Cacatua galerita	Sulphur-crested Cockatoo	Cacatuidae	
Cacatua roseicapilla	Galah	Cacatuidae	
Cacomantis flabelliformis	Fan-tailed Cuckoo	Cuculidae	Marine
Calyptorhynchus funereus	Yellow-tailed Black-cockatoo	Cacatuidae	
Centropus phasianinus	Pheasant Coucal	Cuculidae	
Chalcites lucidus	Shining Bronze-cuckoo	Cuculidae	
Chalcophaps indica	Emerald Dove	Columbidae	
Chrysococcyx lucidus	Shining Bronze-cuckoo	Cuculidae	
Cisticola exilis	Golden-headed Cisticola	Cristicolidae	
Climacteris erythrops	Red-browed Treecreeper	Climacteridae	//LSF
Colluricincla harmonica	Grey Shrike-thrush	Colluricinclidae	
Colluricincla megarhyncha	Little Shrike-thrush	Colluricinclidae	
Columba leucomela	White-headed Pigeon	Columbidae	
Coracina novaehollandiae	Black-faced Cuckoo-shrike	Campephagidae	Marine
Coracina tenuirostris	Cicadabird	Campephagidae	Marine
Cormobates leucophaea	White-throated Treecreeper	Climacteridae	
Corvus orru	Torresian Crow	Corvidae	
Cracticus nigrogularis	Pied Butcherbird	Artamidae	
Cracticus tibicen	Australian Magpie	Artamidae	
Cracticus torquatus	Grey Butcherbird	Artamidae	
Dacelo novaeguineae	Laughing Kookooburra	Alcedinidae	
Dicaeum hirundinaceum	Mistletoebird	Dicaeidae	
Dicrurus bracteatus	Spangled Drongo	Dicruridae	Marine
Egretta novaehollandiae	White-faced Heron	Ardeidae	
Eopsaltria australis	Eastern Yellow Robin	Petroicidae	
Eudynamys orientalis	Eastern Koel	Cuculidae	
Geopelia humeralis	Bar-shouldered Dove	Columbidae	
Gerygone olivacea	White-throated Gerygone	Acanthizidae	
Gerygone palpebrosa	Fairy Gerygone	Acanthizidae	
Grallina cyanoleuca	Magpie-lark	Dicruridae	Marine
Hirundo neoxena	Welcome Swallow	Hirundinidae	Marine
Lalage leucomela	Varied Triller	Campephagidae	

Scientific Name	Common Name	Family	EPBC/ NC ACT/SCC
Leucosarcia melanoleuca	Wonga Pigeon	Columbidae	
Lichenostomus chrysops	Yellow-faced Honeyeater	Meliphagidae	
Lichmera indistincta	Brown Honeyeater	Meliphagidae	
Lopholaimus antarcticus	Topknot Pigeon	Columbidae	
Macropygia amboinensis	Brown Cuckoo-Dove	Columbidae	
Malurus lamberti	Variegated Fairy-wren	Maluridae	
Malurus melanocephalus	Red-backed Fairy-wren	Maluridae	
Manorina melanocephala	Noisy Miner	Meliphagidae	
Megalurus timoriensis	Tawny Grassbird	Sylviidae	
Meliphaga lewinii	Lewin's Honeyeater	Meliphagidae	
Melithreptus albogularis	White-throated Honeyeater	Meliphagidae	
Merops ornatus	Rainbow Bee-eater	Meropidae	Migratory/Marine
Monarcha leucotis	White-eared Monarch	Monarchidae	//LSF
Monarcha melanopsis	Black-faced Monarch	Monarchidae	Migratory/Marine
Myiagra rubecula	Leaden Flycatcher	Monarchidae	
Myzomela sanguinolenta	Scarlet Honeyeater	Meliphagidae	
Neochmia temporalis	Red-browed Finch	Estrildidae	
Oriolus sagittatus	Olive-backed Oriole	Oriolidae	
Pachycephala pectoralis	Golden Whistler	Pachycephalidae	
Pachycephala rufiventris	Rufous Whistler	Pachycephalidae	
Pardalotus punctatus	Spotted Pardalote	Pardalotidae	
Pardalotus striatus	Striated Pardalote	Pardalotidae	
Pitta versicolor	Noisy Pitta	Pittidae	Marine
Platycercus adscitus	Pale-headed Rosella	Psittacidae	
Podargus strigoides	Tawny Frogmouth	Podargidae	
Psophodes olivaceus	Eastern Whipbird	Eupetidae	
Ptilinopus magnificus	Wompoo Fruit-dove	Columbidae	
Ptilinopus regina	Rose-crowned Fruit-dove	Columbidae	
Rhipidura albiscapa	Grey Fantail	Rhipiduridae	
Rhipidura leucophrys	Willie wagtail	Rhipiduridae	
Rhipidura rufifrons	Rufous Fantail	Rhipiduridae	Migratory/Marine
Scythrops novaehollandiae	Channel-billed Cuckoo	Cuculidae	Marine
Sericornis frontalis	White-browed Scrubwren	Acanthizidae	
Sericornis magnirostris	Large-billed Scrubwren	Acanthizidae	
Sphecotheres vieilloti	Green Figbird	Oriolidae	
Sphecotheres viridis	Australasian Figbird	Oriolidae	
Strepera graculina	Pied Currawong	Cracticidae	
Symposiachrus (Monarcha) trivirgatus	Spectacled Monarch	Dicruridae	Migratory/Marine
Todiramphus macleayii	Forest Kingfisher	Alcedinidae	Marine
Todiramphus sanctus	Sacred Kingfisher	Alcedinidae	Marine
Tregellasia capito	Pale-yellow Robin	Petroicidae	
Trichoglossus chlorolepidotus	Scaly-breasted Lorikeet	Psittacidae	
Trichoglossus haematodus	Rainbow Lorikeet	Psittacidae	
Vanellus miles	Masked Lapwing	Charadriidae	
Zoothera lunulata	Bassian Thrush	Muscicapidae	
Zosterops lateralis	Silvereye	Zosteropidae	Marine
Mammal			
Ground Dwelling and Arboreal			
Antechinus flavipes	Yellow-footed Antechinus	Dasyuridae	
Antechinus sp.		Dasyuridae	
Hydromys chrysogaster	Water Rat	Muridae	
Macropus rufogriseus	Red-necked Wallaby	Macropodidae	

Scientific Name	Common Name	Family	EPBC/ NC ACT/SCC
Melomys cervinipes	Fawn-footed Melomys	Muridae	
Nyctimene robinsoni	tube-nosed Bat	Pteropodidae	
Perameles nasuta	Long-nosed Bandicoot	Peramelidae	
Petaurus norfolcensis	Squirrel Glider	Petauridae	//LSF
Phascolarctos cinereus	Koala	Phascolarctidae	V/V/LSF
Rattus fuscipes	Bush Rat	Muridae	
Rattus lutreolus	Swamp Rat	Muridae	
Rattus sp.	Rat	Muridae	
Tachyglossus aculeatus	Short-beaked Echidna	Tachyglossidae	/SLC/
Trichosurus sp.	Brushtail Possum sp.	Phalangeridae	
Trichosurus vulpecula	Common Brushtail Possum	Phalangeridae	
Wallabia bicolor	Swamp Wallaby	Macropodidae	//LSF
Microbat			
Austronomus australis	White-striped Freetail-bat	Molossidae	
Chalinolobus nigrogriseus	Hoary Wattled Bat	Vespertilionidae	
Chalinolobus gouldii	Gould's Wattled bat	Vespertilionidae	//LSF
Chalinolobus morio	Chocolate Wattled bat	Vespertilionidae	
Miniopterus australis	Little Bentwing Bat	Vespertilionidae	
Miniopterus orianae oceanensis	Eastern Bentwing Bat	Miniopteridae	
Mormopterus lumsdenae (Syn. *M. Beccarii*)	Northern Free-tailed Bat	Molossidae	
Mormopterus ridei	Eastern Free-tailed Bat	Molossidae	
Nyctophilus bifax	Eastern long-eared Bat	Vespertilionidae	
Rhinolophus megaphyllus	Eastern Horseshoe Bat	Rhinolophidae	
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Emballonuridae	//LSF
Vespadelus darlingtoni	Large Forest Bat	Vespertilionidae	
Vespadelus pumilus	Eastern Forest Bat	Vespertilionidae	
*Micronomus norfolkensis***	Eastern Freetail-bat	Molossidae	
Myotis macropus or *Nyctophilus* sp.****	Large-footed Myotis or Long-eared Bat sp.	Vespertilionidae	
*Myotis macropus***	Large-footed Myotis	Vespertilionidae	
Nyctophilus sp.		Vespertilionidae	
*Phoniscus papuensis***	Golden-tipped Bat	Vespertilionidae	
Scoteanax rueppellii or *Scotorepens orion*****	Greater broad-nosed Bat or Eastern broad-nosed bat	Vespertilionidae	
*Scoteanax rueppellii***	Greater Broad-nosed Bat	Vespertilionidae	//LSF
*Scotorepens orion***	Eastern Broad-nosed Bat	Vespertilionidae	
Scotorepens sp.		Vespertilionidae	
Scotorepens sp. Or *S. Greyii****		Vespertilionidae	
Reptile			
Anomalopus verreauxii	Three-clawed Worm-skink	Scincidae	
Cacophis krefftii	Southern Dwarf Crowned Snake	Elapidae	
Cyclodomorphus gerrardii	Pink-tongued Lizard	Scincidae	
Demansia psammophis	Yellow-faced Whip Snake	Elapidae	
Eroticoscincus graciloides	Elf Skink	Scincidae	//LSF
Eulamprus tenuis	Barred-sided Skink	Scincidae	
Lampropholis adonis	Diamond-shielded Sunskink	Scincidae	
Lampropholis couperi	Couper's Sunskink	Scincidae	
Lampropholis delicata	Dark-flecked Garden Sunskink	Scincidae	
Menetia timlowi	Dwarf Litter-skink	Scincidae	

Scientific Name	Common Name	Family	EPBC/ NC ACT/SCC
Tropidonophus carintus	Rough-scaled Snake	Elapidae	
Varanus varius	Lace Monitor	Varanidae	
Wollumbinia latisternum	saw-shelled Turtle	Chelidae	
Crustacean			
Cherax depressus	Orange-fingered Yabby	Parastacidae	
Euastacus urospinus	Spiny Crayfish		//LSF
Macrobrachium sp.	Long-armed Prawn	Palaemonidae	
Fish			
Anguilla reinhardtii	Spotted Eel	Anguillidae	
Gobiomorphus australis	Striped Gudgeon	Eleotridae	
Melanotaenia duboulayi	crimson-spot Rainbowfish	Melanotaeniidae	
Insect			
Ornithoptera richmondia	Richmond Birdwing Butterfly	Papilionidae	/V/LSF

E = Endangered species; V = Vulnerable species; NT = Near Threatened species; LSF = Locally Significant Fauna under the SCBS; **Species possibly present but not reliably identified; *** Calls have been positively identified but call characteristics are similar and species cannot be differentiated by call alone (Fox 2015)

Appendix 9: Weed Species Inventory

Scientific Name	Common Name	Family	Form	Status (WoNS /BA/SCPMP)
*Abrus precatorius**	Gidee-Gidee	Fabaceae	V	//LoC
*Ageratina adenophora **	Crofton Weed	Asteraceae	H	
*Ageratina riparia **	Mist Flower	Asteraceae	H	
*Ageratum houstonianum**	Blue Top	Asteraceae	H	//LoC
*Alternanthera brasiliana**	Brazilian Joyweed	Amaranthaceae	S	
*Araujia sericifera**	Moth Vine	Apocynaceae	V	//LoC
Archonotophoenix alexandrae	Alexander Palm	Arecaceae	T	//GEP
*Asclepias curassavica**	Red Head Cotton Bush	Asclepiadaceae	S	
Asparagus africanus	Climbing Asparagus Fern	Asparagaceae	H	WoNS/R3/LoC
*Asparagus plumosus**	Climbing Asparagus	Asparagaceae	H	WoNS/R3/
Axonopus compressus	Broad-leaved Carpet Grass	Poaceae	G	//GEP
*Baccharis halimifolia**	Groundsel Bush	Asteraceae	S	R3/SM
*Bidens pilosa**	Cobblers Pegs	Asteraceae	H	//LoC
*Callisia frangrans**	Purple Succulent	Commelinaceae	H	//GEP
*Celtis cinensis**	Chinese Elm	Ulmaceae	T	R3/LoC
*Centratherum punctatum**	Lark Daisy	Asteraceae	H	
Chloris gayana	Rhodes Grass	Poaceae	G	//GEP
*Cinnamomum camphora**	Camphor Laurel	Lauraceae	T	R3/LoC
*Citrus limonium**		Rutaceae	S	
*Corymbia torelliana**	Cadaghi	Myrtaceae	T	//LoC
*Crassocephalum crepidioides**	Thickhead	Asteraceae	H	
*Desmodium intortum**	Green-leaf Desmodium	Fabaceae	V	
*Desmodium uncinatum**	Silverleaf Desmodium	Fabaceae	V	//LoC
*Diospyros kaki**	Persimmon	Ebanaceae	T	
*Dolichandra (Macfadyena) unguis-cati**	Cat's Claw Creeper	Bignoniaceae	V	WoNS/R3/SM
*Eriobotrya japonica**	Loquat	Rosaceae	ST	
*Gomphocarpus physocarpus**	Milkweed	Asclepidaceae	H	//GEP
*Hypochoeris radicata**	Flatweed, Catears	Asteraceae	H	
*Jacaranda mimosifolia**	Jacaranda	Bignoniaceae	T	//LoC
*Lantana camara**	Lantana	Verbenaceae	S	WoNS/R3/LoC
*Ligustrum lucidum**	Broad-leaved Privet	Oleaceae	T	/R3/SM
*Macroptilium atropurpureum**	Siratro	Fabaceae	V	//LoC
*Macrotyloma axillare**	Perennial Horse Gram	Fabaceae	C	//LoC
Megathyrsus maximus var. maximus (Syn. Panicum maximum)	Guinea Grass	Poaceae	G	//LoC
*Megathyrsus maximus var. pubiglumis**	Green Panic	Poaceae	G	//LoC
*Melinis minutiflora**	Molasses Grass	Poaceae	G	//LoC
*Monstera deliciosa**	Monsterio	Araceae	V	

Scientific Name	Common Name	Family	Form	Status (WoNS /BA/SCPMP)
*Neonotonia wightii**	Glycine	Fabaceae	V	//LoC
*Nephrolepis cordifolia**	Fishbone Fern	Nephrolepidaceae	F	//LoC
*Ochna serrulata**	Ochna	Ochnaceae	S	//LoC
*Oxalis corniculata**	Creeping Oxalis	Oxalidaceae	C	
*Paspalum conjugatum**	Sour Grass	Poaceae	G	//GEP
*Paspalum mandiocanum**	Broad-leaved Paspalum	Poaceae	G	//LoC
*Passiflora edulis**	Black Passionfruit	Passifloracea	V	//LoC
*Passiflora suberosa**	Corky Passionfruit	Passifloracea	V	//LoC
*Passiflora subpeltala**	White Flowered Passionfruit	Passifloraceae	V	//LoC
Pennisetum purpureum	Elephant Grass	Poaceae	G	//LoC
Phyla canescens	Lippia, Condamine Couch	Verbenaceae	G	
*Rubus alumnus**	Blackberry	Rosaceae	V	
*Rubus ellipticus**	Yellow Raspberry	Rosaceae	V	//LoC
*Schefflera actinophylla**	Umbrella Tree	Araliaceae	T	//LoC
*Schinus teribinthifolia**	Broad-leaf Pepper Tree	Anacardiaceae	S	/R3/LoC
*Senna pendula var. glabra**	Easter Cassia	Caesalpiniaceae	S	//LoC
*Senna septemtrionalis**	Smooth Senna	Caesalpiniaceae	S	//LoC
*Setaria sphacelata v sericea **	Sth African Pigeon Grass	Poaceae	H	//LoC
*Sida rhombifolia**	Common Sida	Malvaceae	H	//GEP
*Solanum americanum**	Glossy Nightshade	Solanaceae	S	
*Solanum capsicoides**	Devil's Apple	Solanaceae	H	//GEP
*Solanum mauritianum**	Wild Tobacco	Solanaceae	S	//GEP
*Solanum nigrum**	Blackberry Nightshade	Solanaceae	H	
*Solanum seaforthianum**	Brazilian Nightshade	Solanaceae	V	//LoC
*Solanum torvum**	Devil's Fig	Solanaceae	S	//GEP
*Sonchus oleraceus**	Common Sowthistle	Asteraceae	H	
*Spathodea campanulata**	African Tulip Tree	Fabaceae	T	/R3/LoC
*Stephanophysum longifolium**	Red Christmas Pride	Acanthaceae	S	
*Tabebuia chrysantha**	Golden Trumpet Tree	Bignoniaceae	T	
*Tabebuia chrysotricha**	Golden Trumpet Tree	Bignoniaceae	T	
Thunbergia laurifolia	Laurel Clock Vine	Acanthaceae	V	/R3/BC
*Triumfetta rhomboides**	Chinese Burr	Tiliaceae	S	
*Urena lobata**	Pink Burr	Malvaceae	S	
*Urochloa decumbens**	Signal Grass	Poaceae	G	

WoNS = Weeds of National Significance agreed by Commonwealth Governments;
Biosecurity Act 2014 categories: Invasive = Invasive biosecurity matter; R3 = Restricted Category 3 plant
SCPMP = Sunshine Coast Local Government Area Pest Management Plan 2012-2016 categories: BC = Broad control; SM = Strategic Management; LoC = Local Control; GEP = General Environmental Pest

Restricted Category 3 Plant

- This is a restricted invasive plant under the *Biosecurity Act 2014*.
- It must not be given away, sold, or released into the environment without a permit.
- The Act requires everyone to take all reasonable and practical steps to minimise the risks associated with invasive plants and animals under their control. This is called a general biosecurity obligation (GBO).
- At a local level, each local government must have a biosecurity plan that covers invasive plants and animals in its area. This plan may include actions to be taken on certain species. Some of these actions may be required under local laws. Contact your local government for more information.

(Extract from the *Biosecurity Act 2014*)

Appendix 10: Pest Animal Species Inventory

Scientific Name	Common Name	Family	Status (LPA/SCC)
*Rhinella marina**	Cane Toad	Bufonidae	LoC
*Canis familiaris**	Wild dog	Canidae	R3,4,6/SM
*Mus musculus**	House mouse	Muridae	
*Vulpes vulpes**	European Fox	Canidae	R3,4,5,6/SM

Biosecurity Act 2014 categories: Invasive = Invasive biosecurity matter; SCPMP = Sunshine Coast Local Government Area Pest Management Plan 2012-2016 categories: BC = Broad control; SM = Strategic Management; LoC = Local Control; GEP = General Environmental Pest

Pest Animals

- This is a restricted invasive animal under the *Biosecurity Act 2014*.
- It must not be moved, kept (depends on species), fed, given away, sold, or released into the environment without a permit.
- The Act requires everyone to take all reasonable and practical steps to minimise the risks associated with invasive plants and animals under their control. This is called a general biosecurity obligation (GBO)
- At a local level, each local government must have a biosecurity plan that covers invasive plants and animals in its area. This plan may include actions to be taken on certain species. Some of these actions may be required under local laws. Contact your local government for more information.

Invasive Plant or animal (not listed as prohibited or restricted)

- This is a not a prohibited or restricted invasive plant/ animal under the *Biosecurity Act 2014*.
- The Act requires everyone to take all reasonable and practical steps to minimise the risks associated with invasive plants and animals under their control. This is called a general biosecurity obligation (GBO)
- At a local level, each local government must have a biosecurity plan that covers invasive plants and animals in its area. This plan may include actions to be taken on certain species. Some of these actions may be required under local laws. Contact your local government for more information.

(Extract from the *Biosecurity Act 2014*)

Appendix 11: Back on Track - Actions for Biodiversity (DERM 2010) Priority species at Triunia Environmental Reserve

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
Corynocarpus rupestris subsp. Arborescens (Southern corynocarpus)					
Clearing of vegetation (resulting in fragmentation of habitat)	M	Loss of habitat	Clearing of vegetation, in general by hobby farmers, has resulted in the fragmentation of this plants habitat.	PS	SEQ 12.2.1. Include known locations for BoT priority species and their habitat into processes that contribute to 'Confluence of issues mapping' (e.g. tract analysis) to identify and map key corridor areas for BoT priority species and populations fragmented by vegetation clearing.
				PS	SEQ 12.2.2. Produce Essential Habitat mapping for BoT priority species.
				PS	SEQ 12.2.3. Use Essential Habitat mapping produced from action SEQ 12.2.2. to produce written and spatial information on important habitat areas for BoT priority species (e.g. size, linkages and configuration of habitat required) to guide actions to conserve and restore vegetation.
				PS	SEQ 12.2.4. Encourage use of current mechanisms, such as the establishment of voluntary conservation covenants / agreements, that enable the protection of regrowth and understorey vegetation, to improve BoT priority species buffer, corridor and linkage areas.
				PS	SEQ 12.2.5. Include important habitat areas and linkages for BoT priority species as produced under actions SEQ 12.2.1. and SEQ 12.2.3. into Planning Schemes.
				PS	SEQ 12.2.6. Use information on BoT priority species habitat requirements and connectivity of their habitat (refer actions SEQ 12.2.1. and SEQ 12.2.3.) to assist targeting Land for Wildlife agreements.
				PS	SEQ 12.2.7. Use Environmental Levy's to purchase and manage important habitat areas and linkages (refer action SEQ 12.2.1. and SEQ 12.2.3.) for BoT priority species.
				OG	SEQ 12.3.1. Consider use of incentives to establish a conservation agreement/covenant on properties. The strategic and successional planning applied by Ipswich City Council (i.e. beginning as Land for Wildlife and increasing level of protection to voluntary conservation covenants) could be utilised as a model for conservation of linkages on private land elsewhere. Target areas based on results of action SEQ 12.2.1.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				OG	SEQ 12.3.2. Facilitate access to incentives for retaining and enhancing vegetation within identified linkage and corridor areas containing / adjoining BoT priority species habitat. Target landholders for incentives in areas based on results of action SEQ 12.2.1.
				OG	SEQ 12.3.3. Increase enforcement / compliance with environmental covenants placed on developments within corridor / linkage areas where BoT priority species and / or their habitat occur.
				OG	SEQ 12.3.4. Promote the installation of appropriate 'eco-infrastructure' (as identified under action SEQ 12.5.4.) such as ropes, land bridges, underpasses, fish-friendly crossings that accompany new roads and road upgrade projects for new developments to allow movement of BoT priority species between habitat fragments.
				OG	SEQ 12.3.5. Assess and, where appropriate, improve protection (e.g. by changing tenure) of local government owned / managed land (e.g. bush care and rehabilitation sites) containing or adjoining BoT priority species habitat to improve habitat patch size and connectivity.
				OG	SEQ 12.3.6. Investigate strategic incentives to protect vegetation for environmental linkages that connect BoT priority species habitat.
				OG	SEQ 12.3.10. Maximise environmental linkages for BoT priority species through utilising public recreation areas, such as walking trails, to also function as vegetation corridors between larger reserves. Target area Sunshine Coast Council (Caloundra, Maroochydore and Noosa).
				OG	SEQ 12.3.18. Work to assess and achieve regional linkages between geographic and local government boundaries for BoT priority species recovery through increased and effective communication.
				OG	SEQ 12.3.19. Revegetate with plants that are known habitat (including food plants) for BoT priority species in areas where this will reduce fragmentation of habitat (using the results of action SEQ 12.2.1.).
				OG	SEQ 12.3.20. Target revegetation works to increase landscape connectivity for BoT priority species where possible.
				OG	SEQ 12.3.21. Liaise with adjoining regional groups and catchment management authorities to identify opportunities to increase cross-regional landscape connectivity for BoT priority species.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				CCB	SEQ 12.4.1. Coordinate targeted community education to landholders with areas of BoT priority species habitat, buffers and linkages about the importance of maintaining viable and intact habitat areas and linkages between them. This education should also include information about the impacts of clearing 'un-tidy' undergrowth and understorey on BoT priority species. Target areas initially based on results of action SEQ 12.2.1.
				CCB	SEQ 12.4.2. Continue to educate landholders with environmental covenants / agreements and existing Nature Refuges in identified BoT priority species linkage and corridor areas, about the importance of retaining and enhancing vegetation within them.
				CCB	SEQ 12.4.3. Develop a guide on how to grow and where to source seeds of key plants associated with BoT priority species and how to create properly structured ecosystems that contain these species for use when undertaking establishment or rehabilitation of wildlife corridors to benefit these BoT priority species.
				RM	SEQ 12.5.1. Improve understanding of the connectivity requirements of BoT priority species and provide advice on how this can be achieved in the SEQ NRM region to conserve the greatest number of BoT priority species.
				RM	SEQ 12.5.2. Undertake research on, and monitor the impacts of fragmentation of habitat on, BoT priority species. Initial area for action: Sunshine Coast Council.
				RM	SEQ 12.5.3. Investigate and determine appropriate 'eco-infrastructure' (e.g. ropes, land bridges, underpasses) that accompany new roads and road upgrade projects for new developments for BoT priority species that will allow safe movement of BoT priority species between habitat fragments.
Weeds	M	Habitat degradation	Lantana, cat's claw and other weeds, especially around Maleny, present a threat to this tree species through habitat degradation.		SEQ 75.1.2. A trial of biological control for cats' claw creeper commenced in Gympie, September 2007.
					SEQ 75.1.4. SEQC supported a remote sensing satellite imagery project called Capturing the South East. This project provided local governments, industry, Landcare, catchment and community groups with SPOT5 satellite imagery and data for their area to assist with the planning of natural resource management projects across South East Queensland. This information was used to formulate targeted weed control projects in the Blackall Range.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				PS	SEQ 75.2.1. Include known locations for BoT priority species and their habitat into 'Confluence of issues mapping' to enable the prioritisation of areas for action. NB: Specific locality information for Davidsonia johnsonii, Phaius australis, P. bernaysii, Sarcochilus fitzgeraldii, S. weinthalii and Triunia robusta to be kept confidential to protect against illegal collection.
				PS	SEQ 75.2.2. Provide spatial data for BoT priority species and their habitat to SEQC to allow for targeted weed control and management planning in priority areas where multiple BoT priority species can benefit from weed control. NB: Specific locality information for Davidsonia johnsonii, Phaius australis, P. bernaysii, Sarcochilus fitzgeraldii, S. weinthalii and Triunia robusta to be kept confidential to protect against illegal collection.
				PS	SEQ 75.2.3. Provide mapping of locations of BoT priority species and their habitat to relevant regional councils to inform planning for weed control in priority areas, on-ground management and community action. NB: Specific locality information for Davidsonia johnsonii, Phaius australis, P. bernaysii,Sarcochilus fitzgeraldii, S. weinthalii and Triunia robusta to be kept confidential to protect against illegal collection.
				PS	SEQ 75.2.4. Produce Essential Habitat mapping for BoT priority species for DERM and SEQC to identify important habitat areas for BoT priority species. NB: Specific locality information for Davidsonia johnsonii, Phaius australis, P. bernaysii, Sarcochilus fitzgeraldii, S. weinthalii and Triunia robusta to be kept confidential to protect against illegal collection.
				PS	SEQ 75.2.5. In partnership identify the major weeds that are threatening important habitat areas for BoT priority species (or the species themselves) and to assess the level of infestation.
				PS	SEQ 75.2.6. In partnership identify the sources of major weeds (impacting on BoT priority species) at the catchment level and assess both the future potential impact of these sources and the effort needed to eradicate them.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				PS	SEQ 75.2.7. In partnership use data from SEQ 75.2.4. (habitat and species assets), SEQ 75.2.5. (type of weeds and ease of control) and SEQ 75.2.6. (source of weed infestation, potential further impact and ease of control) to develop a priority list of weed control sites. Highest priority should be sites with the best biodiversity assets and the 'most controllable' weed infestations.
				PS	SEQ 75.2.8. Include BoT priority species, and proposed future actions to address weeds, into pest management strategies for DERM estate where BoT priority species occur and weeds are a threat.
				PS	SEQ 75.2.9. In partnership with utility companies (e.g. Energex, Telstra, Ergon, Department of Transport and Main Roads) develop protocols to reduce / minimise risk of spreading weeds during grazing, slashing, roadside and infrastructure maintenance.
				PS	SEQ 75.2.10. Continue to acquire up-to-date satellite imagery for the SEQ NRM region and distribute this to local governments, industry, Landcare, catchment and community groups, to enable the targeting of weed control projects in areas where multiple BoT priority species. NB: Specific locality information for Davidsonia johnsonii, Phaius australis, P. bernaysii, Sarcochilus fitzgeraldii, S.weinthalii and Triunia robusta to be kept confidential to protect against illegal collection.
				OG	SEQ 75.3.1. Undertake targeted weed control on DERM estate where BoT priority species and their habitat occur and weeds are a threat to BoT priority species.
				OG	SEQ 75.3.2. Encourage landholders with known or potential habitat for BoT priority species to implement appropriate weed control for these species.
				OG	SEQ 75.3.4. Continue targeted weed control projects in the Blackall Range (Sunshine Coast Council, Landcare and Booroobin Bushcare) to benefit Corynocarpus rupestris subsp. arborescens, Triunia robusta , Phaius australis and Coxen's fig-parrot.
				OG	SEQ 75.3.8. In partnership undertake targeted weed control (including Lantana camara , glycine (Neonotonia wightii) and camphor laurel (Cinnamomum camphora)) in the Triunia Conservation Complex (including Triunia National Park, Triunia Bushland Conservation Reserve and Triunia Conservation Area) to benefit Corynocarpus rupestris (subsp. arborescens) and Triunia robusta .

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				OG	SEQ 75.3.9. Reduce the introduction of new weed species into protected areas and prevent the spread of existing weeds within protected areas by implementing hygiene protocols for people, vehicles and materials.
				CCB	SEQ 75.4.1. In consultation develop an education program for local government officers (who carry out weed control, develop weed management plans and identify declared weeds in shires) regarding the impacts of weeds on BoT priority species and the need to identify the weeds that affect these species.
				CCB	SEQ 75.4.2. Work with relevant local governments, DEEDI and community groups to undertake targeted community education on the importance of weed control and the need to remove category 3 declared weeds adjacent to environmentally significant areas. Include priority weed identification and management options. Initially target communities where multiple BoT priority species occur and focus on weed species of highest priority as identified under action SEQ 75.2.8.
				CCB	SEQ 75.4.4. Target a media campaign on a particular weed (e.g. a garden escapee - Singapore daisy (Spagenticola trilobata), mile a minute (Ipomoea cairica), broad leaf pepper tree (Schinus terebinthifolia), Easter cassia (Senna pendula) and asparagus fern (Protasparagus aethiopicus)) where householders are the main contributor, to highlight the impact of the weed species on several relevant BoT priority species. (This may benefit Acacia attenuata and the wallum froglet).
				RM	SEQ 75.5.1. Liaise with local government and nurseries in NSW who are participating in the Bushland Friendly Nursery Scheme (BFNS). In this scheme, local governments agree to exclude the use of environmental weeds in new developments and their own landscaping and nurseries make a commitment not to locally sell, propagate or knowingly distribute BFNS environmental weeds. Determine whether this scheme would be beneficial for adoption within the SEQ NRM region.
				RM	SEQ 75.5.2. Follow up on results of biological control programs for cat's claw creeper to assess the feasibility for use at other sites in the SEQ NRM region where BoT priority species are threatened by weeds.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
Pararistolochia praevenosa (Birdwing Vine)					
Clearing of vegetation	M	Limiting capacity to reproduce	Large populations of P. praevenosa have been lost to widespread clearing of vine forest along lowland creeks and rivers and lowland rainforest away from creeks in SEQC for agriculture and coastal urban development (SMP). Loss of habitat patches with vines and fragmentation make it more difficult for pollination of isolated populations by midges to occur. This may affect reproduction success and gene flow across the population.		SEQ 11.1.13. Caloundra City Council (now part of Sunshine Coast Council) provides support for over 300 Land for Wildlife program properties and encourages Voluntary Conservation Agreements and Environmental Covenants which benefit some BoT priority species.
				PS	SEQ 11.2.1. Provide spatial data and habitat information for BoT priority species to assist SEQC to identify and target areas where the most priority species can be addressed through incentives to retain and enhance vegetation.
				PS	SEQ 11.2.2. Include known locations of BoT priority species and their habitats into 'Confluence of issues mapping' to enable the prioritisation of areas for action.
				PS	SEQ 11.2.3. Produce Essential Habitat mapping for BoT priority species (including results from research actions SEQ 11.5.1 and 4).
				PS	SEQ 11.2.4. Using Essential Habitat mapping produced from action SEQ 11.2.3., produce written and spatial information (including mapping layers) on important habitat areas for BoT priority species to guide actions to conserve and restore vegetation (include results from action SEQ 11.5.1, 2 and 4).
				PS	SEQ 11.2.5. Encourage use of mechanisms that enable the protection of regrowth and understorey vegetation particularly within BoT priority species habitat areas and to encourage inclusion of the habitat requirements of BoT priority species as criteria for voluntary conservation covenants and incentive programs.
				PS	SEQ 11.2.6. Provide BoT priority species spatial data and habitat information to assist targeting the 'Breathe Easy' carbon offsetting campaign towards rehabilitation of BoT priority species habitat.
				PS	SEQ 11.2.7. Include protection of important habitat areas and linkages for BoT priority species in planning schemes. This should include details of the buffers required around critical grey-headed flying-fox roost sites into planning schemes (using results of actions SEQ 11.5.1, 2 and 4).
				PS	SEQ 11.2.8. Use an environmental levy to purchase and manage important habitat areas for BoT priority species.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				OG	SEQ 11.3.1. Assess and, where appropriate, improve protection (e.g. by changing tenure) of local government owned / managed land (e.g. bush care and rehabilitation sites) containing or adjoining BoT priority species' habitat.
				OG	SEQ 11.3.2. Establish conservation agreements / covenants on properties that contain known or potential habitat for multiple BoT priority species to protect regrowth, reduce habitat loss and degradation and/or carry out rehabilitation work. Target areas based on results of actions SEQ 11.5.1, 2 and 4 once completed.
				OG	SEQ 11.3.3. Facilitate access to incentives aimed to retain, maintain and enhance vegetation (e.g. natural debris left in situ, stock watering points kept away from creeks, maintain large intact paddocktrees, planting shade line of trees on properties that are wide enough to provide ecological benefits, keep shrubby areas when clearing for grass to feed stock, maintain remnant and riparian vegetation and rehabilitate riparian areas) where known or potential habitat for multiple BoT priority species occur. Target areas based on results of actions SEQ 11.5.1, 2 and 4 once completed.
				CCB	SEQ 11.4.1. Coordinate targeted community education in areas of BoT priority species habitat and buffers about the importance of maintaining viable and intact habitat areas. This program should also include education about the impacts of the clearance of 'untidy' undergrowth and understorey on BoT priority species and the importance of retaining standing dead trees for pale-headed snake.
				CCB	SEQ 11.4.2. Continue education of landholders with conservation covenants / agreements about the importance of retaining and enhancing vegetation within them and provide information on BoT priority species habitat requirements produced under action SEQ 11.2.4.
				CCB	SEQ 11.4.3. Target promotion of voluntary conservation covenants / agreements to landholders within key habitat areas for BoT priority species.
				CCB	SEQ 11.4.4. Continue support for the Land for Wildlife programs, and include the provision of information on BoT priority species and their habitat, specifically information produced under action SEQ 11.2.4.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				CCB	SEQ 11.4.6. Develop good demonstration sites as examples of best practice for landholders on how to maintain biodiversity (e.g. strips of vegetation maintained, protecting individual trees within crop fields), focusing on areas where there are multiple BoT priority species. Projects need to demonstrate a 'whole of ecology' approach to maintain biodiversity.
				CCB	SEQ 11.4.7. Liaise with any community groups undertaking revegetation work to assist with targeting this work on increasing the populations, habitat area and quality, including the use of plants that are known habitat (including food plants), for BoT priority species. Target areas based on results of action SEQ 11.2.4.
				RM	SEQ 11.5.3. Monitor the effectiveness of the code of practice (that restricts the clearing of vegetation on freehold land) in protecting BoT priority species.
				RM	SEQ 11.5.4. Promote research and surveys on freehold and public land to survey for BoT priority species and to identify suitable habitat for BoT priority species to help target rehabilitation / protection actions. Provide survey records to WildNet.
Clearing of vegetation (resulting in fragmentation of habitat)	M	Loss of habitat	Clearing from urban and peri-urban development has contributed to the fragmentation of habitat for this plant. Retention of riparian vegetation would assist in addressing this fragmentation. Loss of habitat patches with vines and fragmentation make it more difficult for pollination of isolated populations by midges to occur. This may affect reproduction success and gene flow across the population.	PS	SEQ 12.2.1. - SEQ 12.2.7.
				OG	SEQ 12.3.1. - SEQ 12.3.6, SEQ 12.3.10, SEQ 12.3.13., SEQ 12.3.18 - SEQ 12.3.21
				OG	SEQ 12.3.7. Maximise environmental linkages for BoT priority species through utilising public recreation areas, such as walking trails, to also function as vegetation corridors between larger reserves. For example, Brisbane City Council's 'Greenways' concept of ecological corridors combined with recreation / health lifestyle use linked to an active transport agenda and improved lifestyle. Target area Brisbane City Council.
				CCB	SEQ 12.4.1. - SEQ 12.4.3.
				RM	SEQ 12.5.1. - SEQ 12.5.3

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
Urban development	M	Loss of habitat	Large populations of P. praevenosa have been lost to widespread clearing of vine forest along lowland creeks and rivers in SEQC for agriculture and coastal urbandevelopment (SMP).	PS	SEQ 73.2.1. Assess BoT priority species distribution in relation to the SEQ Regional Plan categories, being: urban, rural living, regional landscape and rural production, Mount Lindesay/North Beaudesert Study Area and Investigation area(s). This work should inform priority areas for management and threat mitigation.
				PS	SEQ 73.2.2. Provide spatial data and information on BoT priority species and their habitat to SEQC, local government and other relevant stakeholders.
				PS	SEQ 73.2.11. Include BoT priority species within the DERM Biodiversity Assessment and Mapping Methodology (BAMM) and the review of the Regional Nature Conservation Strategy, and reflect the significance and requirements of BoT priority species in the relevant biodiversity planning assessments (BPAs) for the SEQ NRM region.
				PS	SEQ 73.2.12. Using information provided under action SEQ 73.2.2., include in 'Confluence of Issues' mapping known locations for BoT priority species and their habitat to enable the prioritisation of areasto ameliorate the impacts of urban development.
				PS	SEQ 73.2.17. Consider the distribution and habitat requirements of BoT priority species when assessing development within the Coastal Management District (CMD) as a referral agency and recommend conditions to protect these species and their habitats.
				OG	SEQ 73.3.1 Refer to on-ground actions in the action tables for Clearing of vegetation, Clearing of vegetation (resulting in fragmentation of habitat), Water quality and Flow regime in SEQ NRM region.
				CCB	SEQ 73.4.1. Raise awareness among relevant assessing officers and managers of relevant local government development assessment, strategic planning and maintenance teams of the importance of protection of BoT priority species and their habitat.
				CCB	SEQ 73.4.2. Investigate wildlife-friendly alternatives for development (e.g. 'koala-friendly development', keeping and maintaining riparian buffers). Assess potential for certification or rewards for 'green' developments under environmental standards for developers. A focus on locations where multiple BoT priority species occur is required. Initially focus on areas identified as urban footprint: Caloundra, Maroochy and Noosa (Sunshine Coast Council).

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				CCB	SEQ 73.4.11. Investigate 'wildlife-friendly' alternatives for development (e.g. 'koala-friendly development', keeping and maintaining riparian buffers). Assess potential for certification or rewards for 'green' developments under environmental standards for developers. A focus on locations where Pararistolochia praevenosa, red goshawk, honey blue-eye, grey-headed flying-fox and spotted tailed quoll occur is required. Initially focus on investigation area: adjacent to Caboolture.
				CCB	SEQ 73.4.16. Encourage non-government organisations and community volunteers to participate in collecting distribution data and monitoring BoT priority species within and adjoining urban areas and peri-urban areas.
				CCB	SEQ 73.4.17. Increase the awareness of local residents regarding development impacts on BoT priority species and their habitat by producing information material (e.g. media and newsletter articles). Include the impacts of urban development on water quality and the associated impacts on freshwater and marine species. Incorporate new information as it becomes available (see action SEQ 73.5.2.).
				CCB	SEQ 73.4.18. Provide urban ratepayers in target areas with quality information, including identification information, for relevant BoT priority species and ways to minimise their impact.
				RM	SEQ 73.5.1. Participate in collecting distribution data and monitoring BoT priority species within and adjoining urban areas and peri-urban areas. Data to be included into WildNet.
				RM	SEQ 73.5.2. Undertake research and monitor the impacts of development on BoT priority species. Initial area for action: Sunshine Coast Council. Incorporate this information into action SEQ 73.4.17. (raising community awareness) as it becomes available.
Weeds	m	Habitat degradation	This vine is pollinated by midges; weeds have disturbed and degraded the creek banks where midges breed resulting in habitat degradation for the plant and for the plants' pollinator.		

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
Small population size	m	Limiting capacity to reproduce	Loss of habitat patches with vines and fragmentation make it more difficult for pollination of isolated populations by midges to occur. This may affect reproduction success and gene flow across the population.		
Romnalda strobilacea					
Small population size	M	Limiting capacity to reproduce	This plant occurs only in undisturbed rainforest remnants and does not appear to be naturally regenerating at any of its known sites.	PS	SEQ 69.2.1. Provide spatial data and habitat information for BoT priority species to relevant stakeholders (e.g. SEQC, regional councils) to inform future management and planning.
				PS	SEQ 69.2.2. Include BoT priority species locations into 'Confluence of Issues' mapping, to assist in prioritising areas for action using spatial data provided by DERM (action SEQ 69.2.1.). NB: Specific locality information for Romnalda strobilacea to be kept confidential to protect against illegal collection.
				PS	SEQ 69.2.3. Liaise with relevant land managers and stakeholders to protect known sites where BoT priority species occur.
				PS	SEQ 69.2.4. Investigate the feasibility of translocating certain populations within reserves, or other management options that will allow populations to expand naturally.
				OG	SEQ 69.3.1. Investigate incentives for landowners to protect key populations of BoT priority species where these species occur on private property.
				OG	SEQ 69.3.2. Where practical, encourage land managers to establish buffers around populations of BoT priority species.
				CCB	SEQ 69.4.1. Promote an increased awareness among landowners and other stakeholders about these BoT priority species regarding imperative to increase the number of individual plants to ensure species viability.
				RM	SEQ 69.5.1. Conduct further research into the viability, genetic diversity and reproductive mechanisms for each of the BoT priority species.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
clearing of vegetation	m	Loss of habitat	Clearing for agricultural development is believed to be responsible for the species range contraction (SMP).		
Collectors	m	Loss and / or removal of individuals	Illegal collection represents a current and future threat to this species (SMP).	PS	SEQ 13.2.1. Ensure that specific locality information for Romnalda strobilacea are kept confidential to protect against illegal collection of threatened populations.
Weeds	m	Competition	Weed competition represents a current and future threat to this species and degrades habitat (SMP). Usually only found in intact rainforest.		
Triunia robusta					
Weeds	M	Competition	The main threat to this species is the spread of weeds such as lantana and camphor laurel (SMP). The populations within Triunia National Park have been encroached by urban dwellings and exotic gardens (park/urban interface).		SEQ 75.1.4.
				PS	SEQ 75.2.1. - SEQ 75.2.10.
				OG	SEQ 75.3.1. , SEQ 75.3.2, SEQ 75.3.4, SEQ 75.3.8. , SEQ 75.3.9.
				CCB	SEQ 75.4.1., SEQ 75.4.2., SEQ 75.4.4
				RM	SEQ 75.5.1. - SEQ 75.5.2.
Collectors	m	Loss and / or removal of individuals	Collection of seeds and seedlings of this plant for the horticultural industry are listed as a minor threat to this plant.	PS	SEQ 13.2.1. Ensure that specific locality information for Triunia robusta are kept confidential to protect against illegal collection of threatened populations.
Clearing of vegetation	m	Loss of habitat	This species also occurs in ex-agricultural areas in remnant rainforest outside of protected areas where clearing of vegetation (in association with agriculture and rural land practices) may constitute a minor threat.		

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
***Sarcochilus fitzgeraldii* (Ravine Orchid)**					
Collectors	M	Loss and / or removal of individuals	Collection of individuals from the wild is considered a major threat to these orchids.	PS	SEQ 13.2.1
				PS	SEQ 13.2.2. Continue implementing a strategic compliance plan for all environmental values and protected species listed as threatened under legislation. The purpose of this compliance strategy is to identify environmental, administrative and commercial triggers to alert DERM staff if there is a reasonable suspicion that an offence has occurred. Compliance strategies also contain operation plans to appropriately direct investigative and enforcement resources in the event that an offence is detected; therefore, DERM to ensure that compliance activities that target *Sarcochilus fitzgeraldii* are included in Business and Operational Plans for DERM districts within the SEQ NRM region.
				PS	SEQ 13.2.3. Develop conditions on future collection permits for *Sarcochilus fitzgeraldii* to reduce the impact of any future permitted collection on these BoT priority plant species.
				OG	SEQ 13.3.1. Work with orchid societies to identify who has these BoT priority species in their collection and to encourage the share/trade or sale of propagules from these in accordance with DERM's *Code of Practice for the Taking and Use of Protected Plants*, rather than from wild specimens.
				OG	SEQ 13.3.2. Encourage the commercial market where BoT priority orchid species can be cultivated, made abundant and sold under appropriate permits and in accordance with the DERM's *Code of Practice for the Taking and Use of Protected Plants.*
				CCB	SEQ 13.4.1. Raise awareness of local orchid societies about the significant threat posed by collection to populations of *Sarcochilus fitzgeraldii* and to seek cooperation and voluntary cessation of collection.
				CCB	SEQ 13.4.2. Provide information to the community and local governments about the threat posed by collectors to populations of *Sarcochilus fitzgeraldii* by producing media articles, fact sheets and through direct contact.
Weeds – Mist Flower	M	Competition	Mistflower is also noted as a major threat outcompeting this species.	PS	SEQ 83.2.1. Include BoT priority species known locations into 'Confluence of issues mapping' to enable the prioritisation of areas for action. NB: Specific locality information for *Sarcochilus fitzgeraldii* to be kept confidential to protect against illegal collection.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				PS	SEQ 83.2.2. Provide spatial data for BoT priority species and their habitats to SEQC to enable the planning of targeted mistflower control programs. NB: Specific locality information for *Sarcochilus fitzgeraldii* to be kept confidential to protect against illegal collection.
				PS	SEQ 83.2.3. Liaise with DEEDI about current biocontrol programs for mistflower to determine whether these could be applied in the SEQ NRM region.
				PS	SEQ 83.2.4. Use spatial data for BoT priority species and their habitats to identify potential future sites for biological control programs for mistflower. NB: Specific locality information for *Sarcochilus fitzgeraldii* to be kept confidential to protect against illegal collection.
				PS	SEQ 83.2.5. Include BoT priority species and proposed future actions to address mistflower into pest management strategies for DERM estate where these species occur and mistflower is a threat.
				OG	SEQ 83.3.1. Undertake targeted mistflower control where BoT priority species occur on DERM estate and mistflower is a threat.
				OG	SEQ 83.3.2. Investigate incentives for landholders with known or potential habitat for BoT priority species to implement appropriate mistflower control for these species.
				OG	SEQ 83.3.5. Undertake targeted mistflower control at sites where eastern bristlebird, *Brunoniella bella*, *Thismia rodwayi* and *Sarcochilus fitzgeraldii* core habitat or populations occur in the **Sunshine Coast Regional Council area.** NB: Specific locality information for *Sarcochilus fitzgeraldii* to be kept confidential to protect against illegal collection.
				CCB	SEQ 83.4.1. In consultation with DEEDI and local governments, develop an education program for council officers (who carry out weed control, develop weed management plans and identify declared weeds in shires) regarding the impacts of mistflower on BoT priority species and the mistflower management required to maintain these species habitat.
				CCB	SEQ 83.4.2. Work with relevant local governments, DEEDI and community groups to undertake targeted community education on identifying mistflower, the impact of mistflower on BoT priority species, the importance of controlling and methods to control mistflower.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
Weeds	M	Competition	This orchid occurs on rock faces within rainforest and wet gullies and is threatened by weeds such as morning glory shading this habitat.	PS	SEQ 75.2.1 – SEQ 75.2.10
				OG	SEQ 75.3.1
				OG	SEQ 75.3.9. Reduce the introduction of new weed species into protected areas and prevent the spread of existing weeds within protected areas by implementing hygiene protocols for people, vehicles and materials.
				CCB	SEQ 75.4.1 – SEQ 75.4.2., 75.4.4.
				RM	SEQ 75.5.1
***Ornithoptera richmondia* (Richmond Birdwing Butterfly)**					
Clearing of vegetation (resulting in fragmentation of habitat)	M	Loss of habitat	Many of the habitats occupied by this species have been fragmented or destroyed by clearing for urban and agricultural development (AP). The threat from loss of habitat and fragmentation of lowland rainforest habitat is exacerbated by in-breeding depression in the butterfly population resulting from isolation and lack of genetic exchange between remaining sub-populations. This will reduce fitness, breeding success and survival of these isolated sub-populations e.g. at Kin Kin Creek and other locations in northern Sunshine Coast.	PS	SEQ 12.2.1. - SEQ 12.2.7.
				OG	SEQ 12.3.1. - SEQ 12.3.7. , SEQ 12.3.10, SEQ 12.3.12, SEQ 12.3.13, SEQ 12.3.18 - SEQ12.3.21
				CCB	SEQ 12.4.1 - SEQ 12.4.3

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				RM	SEQ 12.5.1 - SEQ 12.5.3
clearing of vegetation	M	Loss of habitat	Many of the habitats occupied by this species have been destroyed by clearing for agricultural development (AP).		SEQ 11.1.13.
				PS	SEQ 11.2.1. - SEQ 11.2.8.
				OG	SEQ 11.3.1. - SEQ 11.3.3.
				OG	SEQ 11.3.4. Revegetate with plants that are known habitat (including food plants) for BoT priority species.
				CCB	SEQ 11.4.1. - SEQ 11.4.4, SEQ 11.4.6 - SEQ 11.4.7.
				RM	SEQ 11.5.3. - SEQ 11.5.4.
Weeds-Dutchman's Pipe	M	Loss and / or removal of individuals	Dutchman's pipe Aristolochia elegans is noted as a specific threat where it invades Richmond birdwing butterfly habitat areas. This vine attracts oviposition by the butterflies but is toxic to the larvae.		SEQ 78.1.1. The Richmond Birdwing Recovery Network is co-ordinating weed control of vines and exotic riparian grasses (at specified sites from Tallebudgera - Gympie).
					SEQ 78.1.2. Dutchman's pipe is a declared Class 3 plant under the Land Protection (Pest and Stock Route Management) Act 2002 . The Act prohibits the supply or sale of Class 3 plants and requires landholders to control Class 3 plants if their land is adjacent to an environmentally significant area.
				PS	SEQ 78.2.1. Include known locations of the Richmond birdwing butterfly into 'Confluence of issues mapping' to enable the prioritisation of areas for action.
				PS	SEQ 78.2.2. Provide spatial data for the Richmond birdwing butterfly and its habitat to SEQC and other relevant stakeholders to allow for targeted control and management planning in priority areas to ameliorate the threat of Dutchman's Pipe.
				PS	SEQ 78.2.3. Include the Richmond birdwing butterfly and proposed future actions to address Dutchman's pipe into pest management strategies for DERM estate where the Richmond birdwing butterfly and its habitat occur and Dutchman's pipe is a threat.
				OG	SEQ 78.3.1. Encourage relevant local governments to carry out control of Dutchman's pipe (Aristolochia spp.) within and adjoining identified Richmond birdwing butterfly habitat areas.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				OG	SEQ 78.3.2. Undertake targeted Dutchman's pipe control where the Richmond birdwing butterfly and its habitat occur on DERM estate and Dutchman's pipe is a threat.
				OG	SEQ 78.3.3. Investigate incentives for landholders with known or potential habitat for the Richmond birdwing butterfly to implement appropriate Dutchman's pipe control.
				OG	SEQ 78.3.4. Undertake targeted community projects to control Dutchman's pipe in areas where the Richmond birdwing butterfly and its habitat occur.
				CCB	SEQ 78.4.1. In consultation with DEEDI and local governments, develop an education program for council officers (who carry out weed control, develop weed management plans and identify declared weeds in regional council areas) regarding the impacts of Dutchman's pipe on the Richmond birdwing butterfly and the management required to maintain its habitat.
				CCB	SEQ 78.4.2. Work with relevant local governments, DEEDI, the Richmond Birdwing Recovery Network and other community groups to undertake targeted community education on identifying Dutchman's pipe, its impact on the Richmond birdwing butterfly, the importance of control and methods to control Dutchman's pipe.
				CCB	SEQ 78.4.3. Work with relevant regional councils, DEEDI and community groups to initiate targeted education of market sellers and smaller nurseries with reference to the sale of Dutchman's pipe at markets, fetes and roadside stalls and suggest using the native species as an alternative. Target initially where multiple BoT priority species occur. Link to action SEQ 75.4.3. in the Weeds action table.
				RM	SEQ 78.5.1. Research effective methods to control Dutchman's pipe (Aristolochia elegans).
Clearing of vegetation	m	Loss of food resources	Destruction of lowland rainforest results in removal of food plants (Pararistolochia vines - P. praevenosa and P. laheyana) (AP).		

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
Inappropriate fire regimes	m	Habitat degradation	Inappropriate fire regimes have contributed to the destruction of habitat for this species, for example in times of drought the rainforest habitat will burn (AP).		
Urban development	m	Loss of habitat	Many of the habitats occupied by this species have been destroyed by clearing for urban development (AP).		
Eroticoscincus graciloides (Elf Skink)					
Clearing of vegetation	M	Loss of habitat	This species occurs in rainforest and wet sclerophyll forest. Clearing of this vegetation has contributed to a loss of habitat in the Sunshine Coast hinterland. This species is recorded within a number of state forests and so any clearing / timber harvesting in these areas should be in accordance with the recommendations of the Conservation Management Plan for this species (CMP).		
Inappropriate fire regimes	M	Habitat degradation	The Conservation Management Plan for this species suggests that a hot fire may damage this animal's habitat through loss of the dense leaf litter and fallen timber that it commonly shelters within. Timing of fire may also be a threat in that when the elf skink is in torpor, fire can kill individuals and also destroy or reduce available feeding resources and habitat when the animalemerges.	PS	SEQ 39.2.1. Provide BoT priority species spatial data and habitat information to relevant stakeholders (e.g. South East Queensland Fire and Biodiversity Consortium, SEQC, local government) to inform future fire management planning.
				PS	SEQ 39.2.2. Collate existing information on appropriate fire regimes for BoT priority species and provide to relevant stakeholders (e.g. South East Queensland Fire and Biodiversity Consortium, SEQC, local government).
				PS	SEQ 39.2.3. Include BoT priority species locations into ‘Confluence of issues mapping’ to enable the prioritisation of areas for action.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				PS	SEQ 39.2.4. Assist the South East Queensland Fire and Biodiversity Consortium (FaBCon) to continue to collate and deliver information on fire management practices that support south east Queensland biodiversity and to investigate the current information and tools available to ensure BoT priority species spatial data, habitat information and appropriate fire regimes are integrated within proposed landscape fire management planning.
				PS	SEQ 39.2.5. Continue to facilitate the compilation of coordinated fire management plans and to facilitate sub-catchment fire management planning in conjunction with existing natural resource community networks (e.g. South East Queensland Fire and Biodiversity Consortium, Catchment groups, Landcare groups) and relevant government agencies (e.g. DERM, regional councils, Rural Fire Services, Qld Fire and Rescue Service), to encourage the incorporation of BoT priority species' spatial data, habitat information and appropriate fire regimes into landscape focused fire management planning.
				PS	SEQ 39.2.6. Collate, incorporate and disseminate to relevant groups, Traditional Indigenous knowledge of fire management practices into prescribed burning programs where these practices are known to benefit the conservation and recovery of BoT priority species.
				PS	SEQ 39.2.7. Incorporate appropriate fire regimes for BoT priority species into DERM fire management planning in areas where BoT priority species, their habitat or potential habitat occurs on DERM estate.
				PS	SEQ 39.2.8. Encourage local government to incorporate appropriate fire regimes for BoT priority species into local government fire management planning for reserves and other open space managed by local government that contain existing, or potential, habitat for BoT priority species, and consider using BoT priority species spatial data as a GIS layer to inform fire management planning.
				PS	SEQ 39.2.9. Assist Sunshine Coast Council to incorporate BoT priority species within their Bush Fire Management Strategy and Caloundra City Plan 2004 - Bushfire Hazard Management Code, and include BoT priority species spatial data as a GIS layer to assist with fire management planning.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				OG	SEQ 39.3.2. Implement appropriate fire regimes, including recommendations in actions SEQ 39.2.10. - SEQ 39.2.13., for BoT priority species on reserves and other open space managed by local government that contain known or potential habitat for these species.
				OG	SEQ 39.3.3. Implement appropriate fire regimes, including recommendations in actions SEQ 39.2.10. -SEQ 39.2.13., at sites with suitable habitat where BoT priority species occur.
				CCB	SEQ 39.4.1. Liaise with landholders about which sites require specific fire regimes to conserve multiple BoT priority species and what the appropriate fire regimes are.
				CCB	SEQ 39.4.2. Support delivery of Grazing Land Management workshops by summarising the locations and actions required to reduce the impacts of fire on BoT priority species and to raise awareness of the interaction between the use of fire to manage pastures and the ecological impacts to BoT priority species.
				CCB	SEQ 39.4.3. Relevant technical experts (e.g. South East Queensland Fire and Biodiversity Consortium) to incorporate an education package for landholders within their current planning and education programs to highlight how the effectiveness of fire as a fire hazard reduction tool varies depending on the type of ecosystem or vegetation community to be managed. The package is to focus on the known or potential habitat of BoT priority species threatened by inappropriate fire regimes.
				CCB	SEQ 39.4.4. Promote new practices and knowledge to relevant management bodies (including DERM, Qld Rural Fire Brigade Service and local government) regarding the effectiveness, timing, scale/size, intensity and seasonality of fire hazard reduction burning, particularly in relation to BoT priority species.
				CCB	SEQ 39.4.5. Communicate the results of fire management research and planning actions to landholders and managers in areas where BoT priority species, their habitat or potential habitat occurs.
				CCB	SEQ 39.4.6. Encourage Sunshine Coast Council to incorporate BoT priority species information into their educational and training material (e.g. identification sheets) and programs for natural areas staff and the community.

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
				CCB	SEQ 39.4.7. Incorporate appropriate fire regimes for BoT priority species into SEQC programs and projects, e.g. property management planning, Land for Wildlife.
				RM	SEQ 39.5.1. Use an adaptive management approach to monitor the fire response of BoT priority species and their habitat and use the results to inform subsequent fire management plans.
				RM	SEQ 39.5.2. Liaise with Qld Fire and Rescue Service regarding monitoring the frequency and location of fires and keep records of fire scars (focus on where BoT priority species occur) to inform future fire management planning.
				RM	SEQ 39.5.3. Research optimal fire regimes for each BoT priority species where information gaps are identified after completion of the desktop information gathering process (action SEQ 39.2.2.) to inform management planning within BoT priority species' habitat areas. Optimal fire regimes to include information on: timing of hazard reduction burning so as not to coincide with bird and mammal breeding/nesting seasons, reptile overwintering, or during drought.
Ferals - cats	m	Loss and / or removal of individuals	Predation by cats presents a threat to this species		
Clearing of vegetation (resulting in fragmentation of habitat)	m	Loss of habitat	This species occurs in rainforest, wet sclerophyll forest and riparian corridors. The current population appears to be fragmented (SMP) as a result of historic clearing.		
Inappropriate grazing regimes	m	Habitat degradation	Grazing presents a threat to this species through habitat degradation. The impacts of grazing are not yet well known and a monitoring plan is recommended within the Conservation Management Plan.		
Ferals - Pigs	m	Habitat degradation	Feral pigs can destroy shelter sites and degrade habitat through rooting, for example in the Conondale Ranges	PS	SEQ 35.2.2. Provide spatial data for BoT priority species and their habitat information to SEQC, DEEDI and relevant regional councils to enable the targeting of pig management in appropriate areas for BoT priority species. Expand this to include spatial data for the eastern bristlebird and elf skink as resources allow. .

Threat name	threat priority	threat impact	threat details	Action type	Actions to address threats
Weeds	m	Habitat degradation	Cat's claw near the Mary River is considered to increase fire intensity in this location. It also smothers gallery rainforest, altering habitat structure as a result.	OG	SEQ 75.3.6. Undertake a targeted weed control program for cat's claw creeper and madeira vine in the mid to upper Stanley Catchment within and adjoining Coxen's fig-parrot habitat. (This may also benefit the elf skink).
				CCB	SEQ 75.4.3. Work with relevant local government, DEEDI and community groups to initiate targeted education of market sellers and smaller nurseries with reference to the sale of environmental weeds, such as asparagus fern (Protasparagus aethiopicus) and balsam (Impatiens walleriana), at markets, fetes and roadside stalls to benefit Chamaecrista maritima and Coxen's fig-parrot.
Scoteanax rueppellii (Greater Broad - nosed Bat)					
Clearing of vegetation	M	Loss of habitat	Extensive clearing and fragmentation of forests in coastal and lowland areas, forest harvesting and associated activities are considered likely to be impacting on this species. Loss of roosting sites and foraging sites is a concern.	PS	SEQ 11.2.1. - SEQ 11.2.8.
				OG	SEQ 11.3.1 - SEQ 11.3.4
				CCB	SEQ 11.4.1. - SEQ 11.4.4, SEQ 11.4.6 - SEQ 11.4.7.
				RM	SEQ 11.5.3. - SEQ 11.5.4.

Action type: CA = Current action; PS = Plans and strategies; OG = On-ground works; CCB = Community capacity building; RM = Research and monitoring

Glossary and Abbreviations

AHD
Australian Height Datum

Biosecurity Act
Biosecurity Act 2014

BOA
Bushland Operational Assessment

CAR system

Comprehensive: examples of all types of regional-scale ecosystems in each IBRA region should be included in the National reserve System.

Adequate: sufficient levels of each ecosystem should be included within the protected area network to provide ecological viability and to maintain the integrity of populations, species and communities.

***Representative*:** the inclusion of areas at a finer scale, to encompass the variability of habitat within ecosystems.

CCP
Council's Environmental Operations: Community Conservation Partnerships team

DEHP
Department of Heritage Protection

E
Endangered

EEC
Endangered Ecological Community

EPBC Act
Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

EVNT
Fauna and flora species listed as 'Endangered, Vulnerable or Near Threatened' (EVNT) under the Queensland *Nature Conservation Act 1992*

FMP
Fire Management Plan

GES Wetlands
General Ecological Significance Wetlands

IBRA
Interim biogeographical Regionalisation of Australia

IUCN
International Union for the Conservation of Nature

LC
Least Concern

LGA
Local Government Area

LRS
Lowland Rainforest of Subtropical Australia. A Threatened Ecological Community listed as Critically Endangered under the EPBC Act

Marine
Listed Marine species under the EPBC Act

MERI
Monitoring, Evaluation, Reporting, and Improvement

Migratory species
'Species that migrate to Australia and its external territories, or pass through or over Australian waters during their annual migrations (Fox 2015). EPBC Act listed migratory species include any native species identified in an international agreement approved by the Minister as well as those listed in:

- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
- China-Australia Migratory Bird Agreement (CAMBA)
- Japan-Australia Migratory Bird Agreement (JAMBA)
- Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA)

MP
Management Plan

NC ACT
Queensland *Nature Conservation Act 1992*

NRM
Natural Resource Management

NRS
National Reserve System

OC
Of Concern

RE
Regional ecosystem

RWP
Regeneration Works Plan

SCBS
Sunshine Coast Biodiversity Strategy 2010-2020

SCC
Sunshine Coast Council

SCLGA
Sunshine Coast Local Government Area

SEQ
Southeast Queensland

Significant fauna and flora
Flora or fauna species listed as 'Threatened', 'Marine' or 'Migratory' under the *Environment Protection and Biodiversity Conservation Act 1999*, 'Endangered, Vulnerable, 'Near Threatened' (EVNT) or 'Special Least Concern' under the *Nature Conservation Act 1992,* or 'Locally Significant' under the Sunshine Coast Biodiversity Strategy 2010 - 2020.

SMI
Statement of Management Intent

TEC
Threatened Ecological Community listed under the *Environment Protection and Biodiversity Conservation Act 1999*

Threatened
Fauna and flora species listed as Extinct, Extinct in the wild, Critically Endangered, Endangered or Vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* or Endangered or Vulnerable under the Queensland *Nature Conservation Act 1992*

VM ACT
Queensland *Vegetation Management Act 1999*

Weeds of National Significance (WoNS)
Weeds identified by Commonwealth governments based on their invasiveness, potential for spread and environmental, social and economic impacts.

Sunshine Coast™ COUNCIL

Your Environment Levy in action

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