

## Briefing Note

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**Date:** 16 November 2022  
**Subject:** Exploratory Works – Ecology Surveys

### Purpose

The purpose of this briefing note is to provide a summary of the ecological surveys undertaken in the exploratory works' footprint in November 2022. The surveys were undertaken to inform Project approvals and decision making, as well as subsequent impact assessment or reporting required under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

### Outcomes/Key Messages

Key ecological values recorded include:

- Matters of National Environmental Significance recorded:
  - Lowland Rainforest of Subtropical Australia threatened ecological community: five patches were recorded.
  - Three threatened flora species, comprising:
    - *Coleus torrenticola*
    - *Rhodamnia rubescens* (Scrub turpentine)
    - *Sophora fraseri* (Brush sophora).
  - Habitat for invertebrate fauna species listed under the EPBC Act was recorded
    - *Argynnis hyperbius inconstans* (Australian fritillary).
- Matters of State Environmental Significance
  - Four threatened flora species, comprising three MNES flora (listed above) and *Leichhardtia coronata* (Slender milkvine);
  - One amphibian species within creek line habitat (upper reservoir).
    - *Adelotus brevis* (Tusked frog).
  - Eight Regional Ecosystems were recorded, comprising seven Least Concern and one Of Concern community as listed under the QLD *Vegetation Management Act 1999*.

## Data Transmittal

The findings of this briefing note are supported by the following spatial data files:

- Survey locations (22257\_Survey Locations\_Umwelt\_20221116).
- Ground-truthed RE (22257\_GTRE\_Umwelt\_20221116).
- Tracks (22257\_Tracks\_Umwelt\_20221116).
- Threatened flora (22257\_Threatened Species\_Umwelt\_20221116).

### 1.0 Introduction

Umwelt was commissioned by Queensland Hydro to undertake terrestrial ecological survey within the exploratory works' footprint for the Borumba Pumped Hydro Project (BPHP). A summary of findings are detailed below.

### 1.1 Scope of Works

The ecological field survey was undertaken from 7 to 11 November 2022 and included the following areas, herein referred as the exploratory works' footprint.

The following areas were assessed in the lower reservoir:

- Tunnel Spoil Location and Spoil Road.
- New Borumba Lower Dam Disturbance Buffer (25 m).
- National Park Revocation Area.
- Alternative Portal Areas.

The following areas were assessed in the upper reservoir:

- Access Tracks (10 m width), associated with:
  - Upper Reservoir geotechnical access tracks, excluding Imbil State Forest
  - MAT ECVT Portal Platform and Tunnel area 1
  - Explosive Magazine Store
  - Helipad East and West
  - National Park Revocation Areas associated with TR01 and TR02.
- Water infrastructure including water pipe, pump pads and water tanks.
- Geotechnical Disturbance Zones, including:
  - UQ Area
  - Powerhouse Cavern 1, 2 and 3

- Tunnel Area 1, 2,4
- Tailrace ET01
- Pressure Shaft.
- Explosive Magazine Store.
- Emergency Helipad East and West.
- MAT and ECVT Portal Platform (AFRY (20221006)).
- Alternate Portal Locations.
- Dam Disturbance Buffer Areas, including:
  - Upper Reservoir Main Saddle Dam (25 m)
  - Upper Reservoir Secondary Saddle Dam (25 m)
  - Upper Reservoir Main Dam and Spillway (25 m)
  - Upper Reservoir Secondary Saddle Dam B1, B2, B3 (25 m).

## 2.0 Methodology

The field survey incorporated a range of methodologies at each scope of works location, as detailed below. The locations of each survey methodology have also been provided as data files (ESRI Shapefile).

- An assessment of vegetation status and regional ecosystems (REs) as per *Methodology for surveying and mapping regional ecosystems and vegetation communities in Queensland* (Neldner et al., 2020).
  - 154 quaternary surveys and 1 secondary survey were undertaken within the exploratory works' footprint.
- Verification of threatened ecological communities (TECs), listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act):
  - A random meander was undertaken through synonymous REs to determine if the patches supported  $\geq 40$  native woody species from Appendix A of listing advice (TSSC 2011).
- Threatened flora searches using a random meander technique in areas of suitable habitat.
- 28 Fauna habitat assessments were undertaken.

## 3.0 Field Survey Results

### 3.1 Vegetation Communities

#### 3.1.1 Regional Ecosystem

**Table 1** provides details of the REs recorded within the exploratory works' footprint, as shown in **Figure 1**.

**Table 1 Regional Ecosystems Recorded within Exploratory Works' Footprint**

RE ID	Short descriptions	VM Act <sup>1</sup>	Remnant Status
12.3.7	<i>Eucalyptus tereticornis</i> , <i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i> +/- <i>Melaleuca</i> spp. fringing woodland.	Least concern	Regrowth
12.11.3	<i>Eucalyptus siderophloia</i> , <i>E. propinqua</i> +/- <i>E. microcorys</i> , <i>Lophostemon confertus</i> , <i>Corymbia intermedia</i> , <i>E. acmenoides</i> open forest on metamorphics +/- interbedded volcanics.	Least concern	Remnant
12.11.10	Notophyll vine forest +/- <i>Araucaria cunninghamii</i> on metamorphics +/- interbedded volcanics.	Least concern	Remnant
12.11.14	<i>Eucalyptus crebra</i> , <i>E. tereticornis</i> , <i>Corymbia intermedia</i> woodland on metamorphics +/- interbedded volcanics.	Of concern	Remnant
12.12.15	<i>Corymbia intermedia</i> +/- <i>Eucalyptus propinqua</i> , <i>E. siderophloia</i> , <i>E. microcorys</i> , <i>Lophostemon confertus</i> open forest on Mesozoic to Proterozoic igneous rocks.	Least concern	Remnant
12.12.15b	<i>Lophostemon confertus</i> open forest +/- <i>Eucalyptus microcorys</i> , <i>E. siderophloia</i> , <i>E. carnea</i> , <i>E. propinqua</i> and vine forest species often present in understorey. Occurs in gullies and exposed ridges on Mesozoic to Proterozoic igneous rocks often amongst vine forest.	Least concern	Remnant
12.12.16	Notophyll vine forest on Mesozoic to Proterozoic igneous rocks.	Least concern	Remnant
12.12.23	<i>Eucalyptus tereticornis</i> subsp. <i>tereticornis</i> or <i>E. tereticornis</i> subsp. <i>basaltica</i> +/- <i>E. eugenioides</i> woodland to open forest on crests, upper slopes and elevated valleys and plains on Mesozoic to Proterozoic igneous rocks.	Least concern	Remnant
Non-remnant	Predominantly comprises cleared pasture, not representative remnant or regrowth vegetation.	-	-

### 3.1.2 Threatened Ecological Communities

One TEC listed under the EPBC Act was verified within the exploratory works footprint; Lowland Rainforest of Subtropical Australia. This TEC is listed as critically endangered. The extent of the TEC within the exploratory works' footprint is shown in **Figure 1**.

A summary of the TEC verification results is outlined below:

- RE 12.11.10 associated with lower reservoir national park revocation area was verified as TEC.
- RE 12.12.16 within the central alternative portal area did not meet key diagnostic characteristics (species diversity).
- Portions of RE 12.12.16 within the upper reservoir main saddle dam were verified as TEC. Areas of RE 12.12.16 did not meet key diagnostic characteristics (dominated by *Eucalyptus grandis*).

<sup>1</sup> *Vegetation Management Act 1999*

Targeted surveys were not undertaken in two patches that intersected the exploratory works' footprint (national park revocation area and tunnel area 1). Both are assumed to be the TEC based on the proximal outcomes of similar TEC assessments in the upper reservoir.

An assessment of the patches against the key diagnostic characteristics and condition thresholds is provided in **Table 2** and **Table 3** respectively.

**Table 2 Assessment Against Lowland Rainforest of Subtropical Australia Key Diagnostic Characteristics**

Key Diagnostic Characteristics	Site Results
Distribution of the ecological community is primarily in the NSW North Coast and South Eastern Queensland bioregions, according to Interim Biogeographic Regionalisation for Australia (IBRA) version 6.1 (2004).	<b>Yes</b> , the patches occur within the South Eastern Queensland bioregion.
The ecological community occurs on: soils derived from basalt or alluvium; or enriched rhyolitic soils; or basaltically enriched metasediments.	<b>Yes</b> , the patches occur on soils derived from basalt or alluvium.
The ecological community generally occurs at an altitude less than 300 m ASL.	<b>Yes</b> , patches in the lower reservoir are below 300 m ASL. Patches in the upper reservoir occur between 350–500 m ASL, however, this does not preclude them from being the TEC.
The ecological community typically occurs in areas with high annual rainfall (>1300 mm).	<b>Yes</b> , average annual rainfall 1,483 mm (weather station 040861, 50 km east of Study Area (BoM 2022)).
The ecological community is typically more than 2 km inland from the coast.	<b>Yes</b> , the patches are greater than 2 km from the coast.
The structure of the ecological community is typically a tall (20 m–30 m) closed forest, often with multiple canopy layers.	<b>Yes</b> , the patches typically comprise a canopy ranging from 20–30 m tall and is a closed forest with multiple canopy layers. However, there are patches with canopy ranging from 15–20 m.
Patches of the ecological community typically have high species richness (at least 30 woody species from Appendix A of the listing advice (TSSC 2011)).	<b>No (Feature ID 128)</b> – 27 species recorded. <b>Yes</b> , remaining patches had at least 30 woody species. See <b>Appendix B</b> .

**Table 3 Assessment Against Lowland Rainforest of Subtropical Australia Condition Thresholds**

Patch Type	A	B	C
Evidence of remnant vegetation and regeneration status	Natural remnant evident by the persistence of mature residual trees from Appendix B of the listing advice (TSSC 2011) <b>AND</b>	Some residual trees from Appendix B are present plus evidence of either; natural regeneration <b>AND/OR</b> regeneration with active management <b>AND</b>	A non-remnant patch that has recovered through: a) natural regeneration <b>AND/OR</b> b) supplementary planting that has stature and quality that is reflective of the 'Description' <b>AND</b>
Patch Size (excludes buffer zone)	≥ 0.1 ha <b>AND</b>	≥ 1 ha <b>AND</b>	≥ 2 ha <b>AND</b>
Canopy Cover (over entire patch)	Emergent/canopy/subcanopy cover is ≥ 70% <b>AND</b>		
Species Richness (over entire patch)	Contains ≥ 40 native woody species from Appendix A of listing advice (TSSC 2011). <b>AND</b>	Contains ≥ 30 native woody species from Appendix A of the listing advice (TSSC 2011). <b>AND</b>	
Percent of total vegetation cover that is native (use sample plot)	≥70% of vegetation is native	≥50% of vegetation is native	

### 3.2 Flora Diversity

A total of 305 flora species from 86 families and 231 genera were recorded within the exploratory works' footprint. The plant families represented by ten or more taxa included *Asteraceae* (18), *Leguminosae* (Papilionoideae) (22), *Moraceae* (10), *Myrtaceae* (20), *Poaceae* (22) and *Rutaceae* (10). Genera represented by five or more species included *Acacia* (5), *Eucalyptus* (8), *Ficus* (7) and *Solanum* (5).

The full list of flora species recorded during field surveys is provided in **Appendix A**.

#### 3.2.1 Threatened Flora Species

**Table 4** provides details of the threatened flora species found within the exploratory works' footprint.

**Table 4 Threatened Flora Species**

Scientific Name	Common Name	EPBC Act Listing	NC Act <sup>2</sup> Listing
<i>Coleus torrenticola</i>	-	Endangered	Endangered
<i>Leichhardtia coronata</i>	Slender milkvine	-	Vulnerable
<i>Rhodamnia rubescens</i>	Scrub turpentine	Critically endangered	Critically endangered
<i>Sophora fraseri</i>	Brush sophora	Vulnerable	Vulnerable

### 3.2.2 Introduced Flora

Of the 297 flora species recorded, 27 (9%) are introduced species. One of these are listed as Category 3 Restricted Plants under the Biosecurity Act and also a Weed of National Significance (WoNS):

- Lantana (*Lantana camara*) – Category 3 Restricted Plant and WoNS.

Two of the recorded introduced flora species are listed as ‘Other Invasive Plants’ by the Queensland Government (2016) including corky passionflower (*Passiflora suberosa*) and noogoora burr (*Xanthium occidentale*).

## 3.3 Fauna

### 3.3.1 Fauna Habitat

The following habitat types were recorded within the exploratory works’ footprint:

- Notophyll vine forests on foothills and ranges (RE 12.11.10 and RE 12.12.16).
- Moist to dry open woodlands on metamorphic and volcanic rocks (RE 12.11.3, RE 12.12.15, RE 12.12.15b).
- Dry to moist eucalypt woodlands and open forests on undulating to hilly terrain of metamorphic and volcanic rocks (RE 12.11.14).
- Eucalyptus open forests and woodland on drainage lines and alluvial plains (RE 12.3.7).
- Non-remnant pasture.

Full descriptions of these habitat types are available in *Borumba Pumped Hydro Project: Terrestrial Ecology Technical Report* (Umwelt 2022).

### 3.3.2 Incidental Fauna

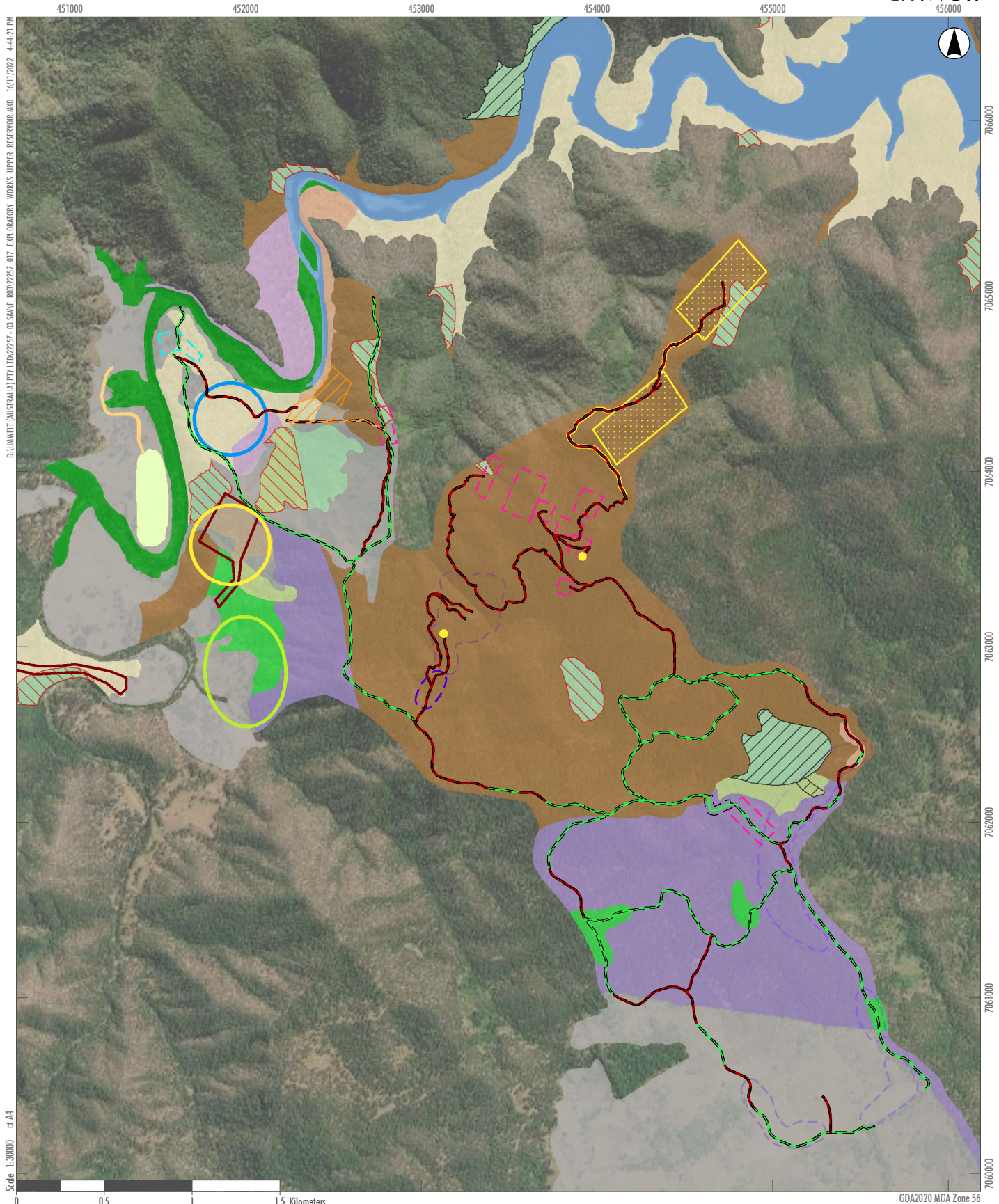
**Table 5** provides the details of the threatened fauna species or suitable habitat for threatened fauna species found within the exploratory works’ footprint.

<sup>2</sup> Nature Conservation Act 1992

**Table 5**      **Threatened Fauna Species**

Scientific Name	Common Name	EPBC Act Listing	NC Act Listing	Comment
<i>Adelotus brevis</i>	Tusked frog	-	Vulnerable	Heard calling within a patch of RE 12.11.10.
<i>Argynnis hyperbius inconstans</i>	Australian fritillary	Critically endangered	Endangered	Species was not recorded but larval food plant ( <i>Viola betonicifolia</i> ) recorded adjacent footprint.





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Scale 1:30000 or A4

GDA2020 MGA Zone 56

**Legend**

- |                                |  |  |             |
|--------------------------------|--|--|-------------|
| Exploratory Works Areas        | Portal Lower Staging Area                | <b>Threatened Ecological Communities</b> | 12.12.12    |
| 50m Dam Buffers                | Spoil Road Disturbance Area              | Not assessed                             | 12.12.15    |
| Alternative Blue Portal        | Tunnel Spoil Disturbance Areas           | Verified                                 | 12.12.15b   |
| Alternative Green Portal       | Potential Tracks Disturbance Area Buffer | <b>Ground-truthed REs</b>                | 12.12.16    |
| Alternative Yellow Portal      | Existing Tracks                          | 12.11.10                                 | 12.12.23    |
| Disturbance Zones Geotech      | Proposed Tracks                          | 12.11.14                                 | 12.3.7      |
| Helipad                        | Proposed Tracks                          | 12.11.3                                  | Non-remnant |
| MAT and ECVT Portal Platform   |  | 12.11.9                                  | Water       |
| National Park Revocation Areas |  |  |             |

**FIGURE 1A**

**Exploratory Works Footprint Upper Reservoir**

Image Source: ESRI Basemap (2022) Data source: QLD Department of Resources (2022)

458000

458500

459000

D:\UMWELT (AUSTRALIA) PTY LTD\22257\_018 EXPLORATORY WORKS LOWER RESERVOIR.MXD 16/11/2022 4:47:10 PM



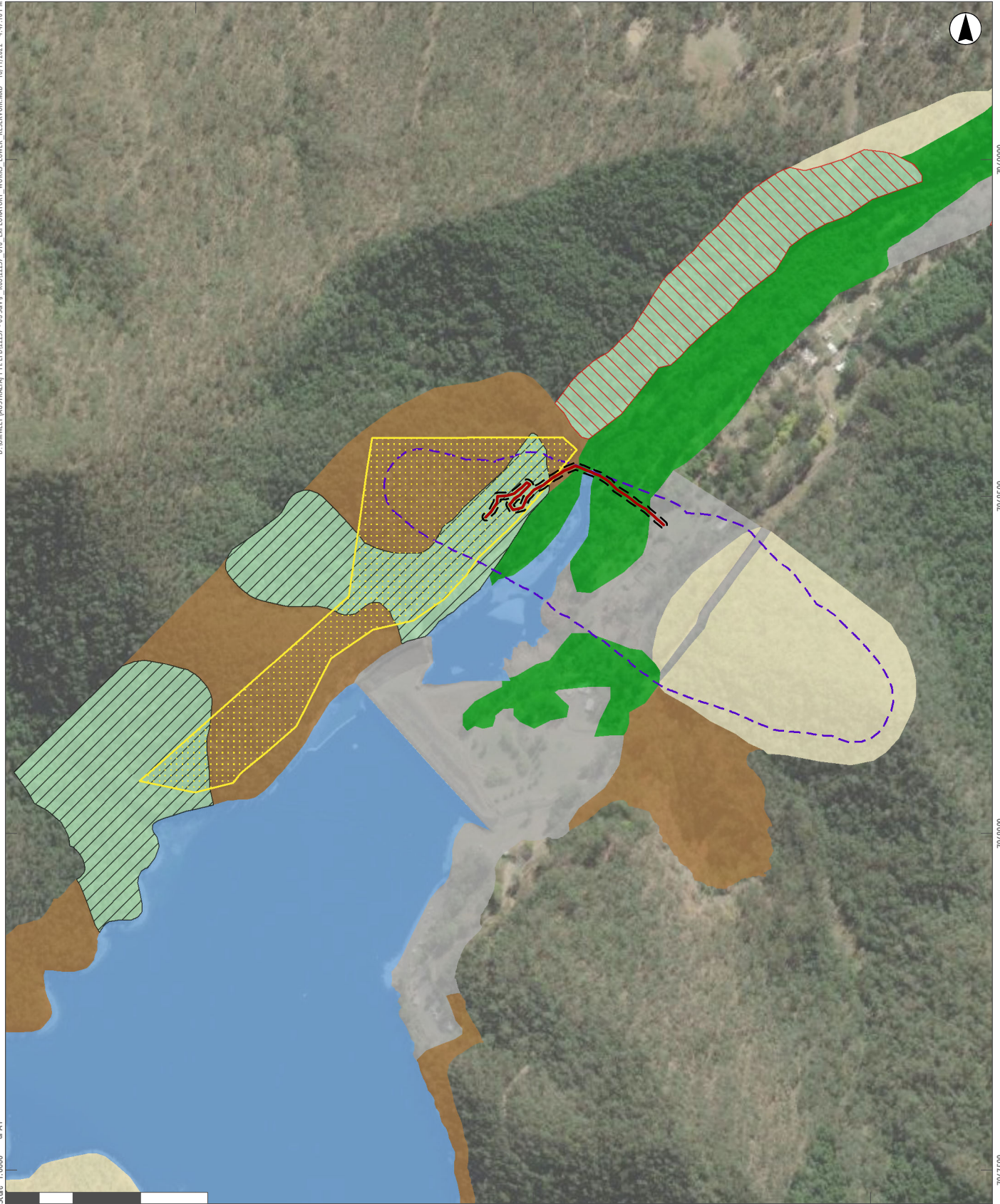
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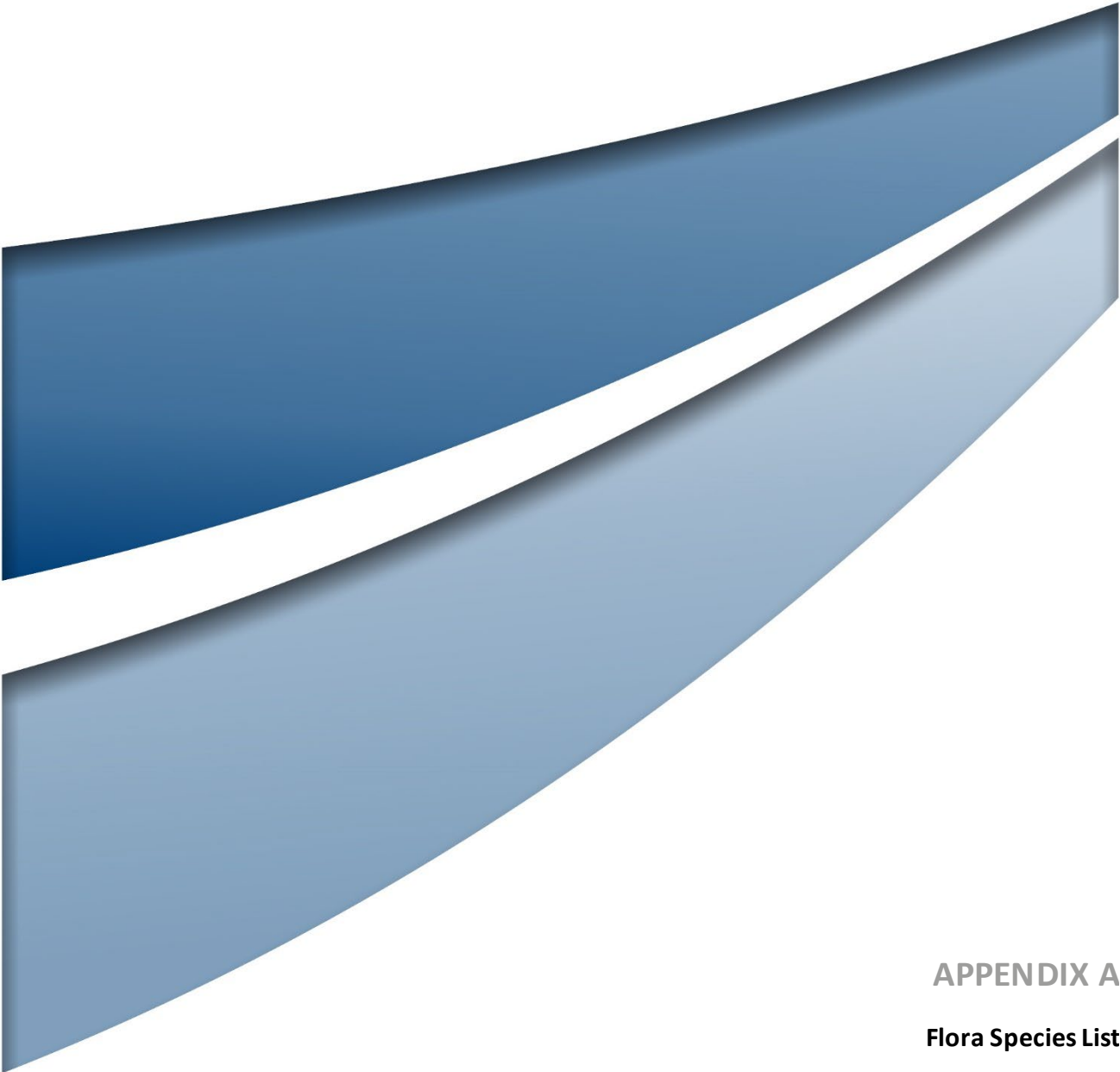
GDA2020 MGA Zone 56

**Legend**

- |  |                                |                             |
|--|--------------------------------|-----------------------------|
| 50m Dam Buffers                          | National Park Revocation Areas | Ground-truthed REs 12.11.10 |
| Potential Tracks Disturbance Area Buffer | 12.11.14                       | 12.11.3                     |
| Proposed Tracks                          | 12.3.7                         | Non-remnant                 |
| <b>Threatened Ecological Communities</b> | Water                          |                             |
| Not assessed                             |                                |                             |
| Verified                                 |                                |                             |

**FIGURE 1B**

**Exploratory Works Footprint  
Lower Reservoir**



APPENDIX A

**Flora Species List**

Family	Scientific Name	Common Name	NC Act Status	EPBC Act Status
<b>Acanthaceae</b>	<i>Pseuderanthemum tenellum</i>	--	Least concern	-
<b>Amaranthaceae</b>	<i>Nyssanthes diffusa</i>	Barbed-wire weed	Least concern	-
<b>Anacardiaceae</b>	<i>Euroschinus falcatus</i> var. <i>falcatus</i>	-	Least concern	-
	<i>Pleiogynium timorense</i>	Burdekin plum	Least concern	-
	<i>Rhodospaera rhodanthema</i>	Tulip satinwood	Least concern	-
<b>Apocynaceae</b>	<i>Alstonia constricta</i>	Bitterbark	Introduced	-
	<i>Gomphocarpus physocarpus</i>	Balloon cottonbush	Least concern	-
	<i>Hoya australis</i> subsp. <i>australis</i>	-	Least concern	-
	<i>Leichhardtia coronata</i>	Slender milkvine	Vulnerable	-
	<i>Leichhardtia hemiptera</i>	Rusty vine	Least concern	-
	<i>Leichhardtia lloydii</i>	-	Least concern	-
	<i>Tabernaemontana pandacaqui</i>	Banana bush	Least concern	-
<b>Araceae</b>	<i>Gymnostachys anceps</i>	Settler's flax	Least concern	-
<b>Araliaceae</b>	<i>Hydrocotyle laxiflora</i>	Stinking pennywort	Least concern	-
	<i>Polyscias elegans</i>	Celery wood	Least concern	-
<b>Araucariaceae</b>	<i>Araucaria bidwillii</i>	Bunya pine	Least concern	-
	<i>Araucaria cunninghamii</i>	Hoop pine	Least concern	-
	<i>Araucaria cunninghamii</i> var. <i>cunninghamii</i>	-	Least concern	-
<b>Areaceae</b>	<i>Archontophoenix cunninghamiana</i>	Piccabeen palm	Least concern	-
	<i>Calamus muelleri</i>	Lawyer vine	Least concern	-
<b>Aspleniaceae</b>	<i>Asplenium australasicum</i>	-	Least concern	-
<b>Asteraceae</b>	<i>Ageratum conyzoides</i>	Billygoat weed	Introduced	-
	<i>Ageratum houstonianum</i>	Blue billygoat weed	Introduced	-
	<i>Bidens pilosa</i>	-	Introduced	-
	<i>Carduus</i> sp.	-	Least concern	-
	<i>Centratherum riparium</i>	-	Least concern	-

Family	Scientific Name	Common Name	NC Act Status	EPBC Act Status
	<i>Chrysocephalum apiculatum</i>	Yellow buttons	Least concern	-
	<i>Cirsium vulgare</i>	Spear thistle	Introduced	-
	<i>Cyanthillium cinereum</i>	-	Least concern	-
	<i>Emilia sonchifolia</i>	-	Introduced	-
	<i>Erigeron bonariensis</i>	-	Introduced	-
	<i>Euchiton sphaericus</i>	-	Least concern	-
	<i>Glossocardia bidens</i>	Native cobbler's pegs	Least concern	-
	<i>Praxelis clematidea</i>	-	Least concern	-
	<i>Pterocaulon redolens</i>	-	Least concern	-
	<i>Senecio amygdalifolius</i>	-	Least concern	-
	<i>Sigesbeckia orientalis</i>	Indian weed	Introduced	-
	<i>Tagetes minuta</i>	Stinking roger	Introduced	-
	<i>Tridax procumbens</i>	Tridax daisy	Introduced	-
	<i>Xanthium occidentale</i>	-	Introduced	-
<b>Bignoniaceae</b>	<i>Pandorea floribunda</i>	-	Least concern	-
	<i>Tecoma stans</i> var. <i>stans</i>	-	Introduced	-
<b>Blechnaceae</b>	<i>Blechnum neohollandicum</i>	-	Least concern	-
	<i>Blechnum</i> sp.	-	Least concern	-
<b>Byttneriaceae</b>	<i>Commersonia bartramia</i>	Brown kurrajong	Least concern	-
<b>Campanulaceae</b>	<i>Lobelia concolor</i>	-	Least concern	-
	<i>Lobelia purpurascens</i>	White root	Least concern	-
	<i>Wahlenbergia glabra</i>	Native bluebell	Least concern	-
	<i>Wahlenbergia gracilis</i>	Sprawling bluebell	Least concern	-
<b>Capparaceae</b>	<i>Capparis arborea</i>	Brush caper berry	Least concern	-
	<i>Capparis sarmentosa</i>	Scrambling caper	Least concern	-
<b>Casuarinaceae</b>	<i>Allocasuarina torulosa</i>	-	Least concern	-
	<i>Casuarina cunninghamiana</i>	-	Least concern	-

Family	Scientific Name	Common Name	NC Act Status	EPBC Act Status
Celastraceae	<i>Denhamia bilocularis</i>	-	Least concern	-
	<i>Elaeodendron australe</i> var. <i>australe</i>	-	Least concern	-
Chenopodiaceae	<i>Einadia nutans</i>	-	Least concern	-
Commelinaceae	<i>Commelina diffusa</i>	Wandering jew	Least concern	-
	<i>Murdannia graminea</i>	Murdannia	Least concern	-
Cunoniaceae	<i>Caldcluvia paniculosa</i>	Rose-lead marara	Least concern	-
Cyperaceae	<i>Cyperus gracilis</i>	-	Least concern	-
	<i>Cyperus</i> sp.	-	Least concern	-
	<i>Fimbristylis dichotoma</i>	Common fringe-rush	Least concern	-
	<i>Lepidosperma laterale</i>	-	Least concern	-
Dennstaedtiaceae	<i>Pteridium esculentum</i>	Common bracken	Least concern	-
Dicksoniaceae	<i>Calochlaena dubia</i>	-	Least concern	-
Dilleniaceae	<i>Hibbertia aspera</i>	-	Least concern	-
	<i>Hibbertia linearis</i>	-	Least concern	-
Dioscoreaceae	<i>Dioscorea transversa</i>	Native yam	Least concern	-
Ebenaceae	<i>Diospyros australis</i>	Black plum	Least concern	-
	<i>Diospyros fasciculosa</i>	Grey ebony	Least concern	-
	<i>Diospyros pentamera</i>	Myrtle ebony	Least concern	-
Elaeocarpaceae	<i>Elaeocarpus obovatus</i>	Blueberry ash	Least concern	-
	<i>Sloanea australis</i>	-	Least concern	-
Ericaceae	<i>Leucopogon</i> sp.	-	Least concern	-
	<i>Trochocarpa laurina</i>	Tree heath	Least concern	-
Euphorbiaceae	<i>Acalypha capillipes</i>	Small-leaved acalypha	Least concern	-
	<i>Alchornea ilicifolia</i>	Native holly	Least concern	-
	<i>Baloghia inophylla</i>	Scrub bloodwood	Least concern	-
	<i>Croton insularis</i>	Queensland cascarilla	Least concern	-
	<i>Excoecaria dallachyana</i>	Scrub poison tree	Least concern	-

Family	Scientific Name	Common Name	NC Act Status	EPBC Act Status
	<i>Mallotus claoxyloides</i>	Green kamala	Least concern	-
	<i>Mallotus philippensis</i>	Red kamala	Least concern	-
	<i>Ricinocarpos linearifolius</i>	-	Least concern	-
<b>Gentianaceae</b>	<i>Schenkia australis</i>	-	Least concern	-
<b>Geraniaceae</b>	<i>Geranium homeanum</i>	-	Least concern	-
	<i>Geranium solanderi</i>	-	Least concern	-
<b>Goodeniaceae</b>	<i>Goodenia rotundifolia</i>	-	Least concern	-
<b>Hemerocallidaceae</b>	<i>Dianella caerulea</i>	-	Least concern	-
	<i>Dianella longifolia</i>	-	Least concern	-
	<i>Geitonoplesium cymosum</i>	Scrambling lily	Least concern	-
<b>Hypoxidaceae</b>	<i>Hypoxis pratensis</i> var. <i>pratensis</i>	-	Least concern	-
<b>Johnsoniaceae</b>	<i>Tricoryne elatior</i>	Yellow autumn lily	Least concern	-
<b>Lamiaceae</b>	<i>Ajuga australis</i>	Australian bugle	Least concern	-
	<i>Anisomeles</i> sp.	-	Least concern	-
	<i>Clerodendrum floribundum</i>	-	Least concern	-
	<i>Coleus australis</i>	-	Least concern	-
	<i>Coleus torrenticola</i>	-	Least concern	Endangered
	<i>Gmelina leichhardtii</i>	White beech	Least concern	-
	<i>Mentha satuireioides</i>	Native pennyroyal	Least concern	-
	<i>Vitex lignum-vitae</i>	-	Least concern	-
<b>Lauraceae</b>	<i>Beilschmiedia elliptica</i>	Grey walnut	Least concern	-
	<i>Cinnamomum oliveri</i>	Oliver's sassafras	Least concern	-
	<i>Cryptocarya laevigata</i>	-	Least concern	-
	<i>Cryptocarya obovata</i>	Pepperberry	Least concern	-
	<i>Cryptocarya triplinervis</i>	-	Least concern	-
	<i>Endiandra pubens</i>	Hairy walnut	Least concern	-
	<i>Neolitsea dealbata</i>	White bolly gum	Least concern	-
<b>Laxmanniaceae</b>	<i>Cordyline petiolaris</i>	Large-leaved palm lily	Least concern	-

Family	Scientific Name	Common Name	NC Act Status	EPBC Act Status
	<i>Cordyline rubra</i>	Red-fruited palm lily	Least concern	-
	<i>Eustrephus latifolius</i>	Wombat berry	Least concern	-
	<i>Lomandra confertifolia</i>	-	Least concern	-
	<i>Lomandra hystrix</i>	-	Least concern	-
	<i>Lomandra longifolia</i>	-	Least concern	-
	<i>Lomandra multiflora</i>	-	Least concern	-
	<i>Thysanotus tuberosus</i>	-	Least concern	-
<b>Leguminosae (Caesalpinioideae)</b>	<i>Chamaecrista</i> sp.	-	Introduced	-
	<i>Senna acclinis</i>	-	Least concern	-
	<i>Senna artemisioides</i>	-	Least concern	-
	<i>Senna pendula</i>	-	Introduced	-
<b>Leguminosae (Caesalpinioideae, mimosoid clade)</b>	<i>Acacia disparrima</i>	-	Least concern	-
	<i>Acacia disparrima</i> subsp. <i>disparrima</i>	-	Least concern	-
	<i>Acacia fimbriata</i>	Brisbane golden wattle	Least concern	-
	<i>Acacia implexa</i>	Lightwood	Least concern	-
	<i>Acacia irrorata</i>	-	Least concern	-
	<i>Acacia leiocalyx</i>	-	Least concern	-
	<i>Acacia maidenii</i>	Maiden's wattle	Least concern	-
	<i>Acacia melanoxylon</i>	Blackwood	Least concern	-
	<i>Pararchidendron pruinosum</i>	-	Least concern	-
<b>Leguminosae (Papilionoideae)</b>	<i>Austrosteenisia blackii</i>	Bloodvine	Least concern	-
	<i>Castanospermum australe</i>	Black bean	Least concern	-
	<i>Clitoria ternatea</i>	Butterfly pea	Introduced	-
	<i>Crotalaria montana</i>	-	Least concern	-
	<i>Desmodium brachypodum</i>	Large ticktrefoil	Least concern	-
	<i>Desmodium gunnii</i>	-	Least concern	-
	<i>Desmodium rhytidophyllum</i>	-	Least concern	-
	<i>Flemingia parviflora</i>	Flemingia	Least concern	-
	<i>Glycine clandestina</i>	-	Least concern	-



Family	Scientific Name	Common Name	NC Act Status	EPBC Act Status
	<i>Glycine tabacina</i>	Glycine pea	Least concern	-
	<i>Glycine tomentella</i>	Woolly glycine	Least concern	-
	<i>Hardenbergia violacea</i>	-	Least concern	-
	<i>Hovea longipes</i>	Brush hovea	Least concern	-
	<i>Indigofera hirsuta</i>	Hairy indigo	Least concern	-
	<i>Jacksonia scoparia</i>	-	Least concern	-
	<i>Macrotyloma axillare</i> var. <i>axillare</i>	-	Least concern	-
	<i>Podolobium ilicifolium</i>	-	Least concern	-
	<i>Rhynchosia minima</i>	-	Least concern	-
	<i>Sophora fraseri</i>	Brush sophora	Vulnerable	Vulnerable
	<i>Swainsona brachycarpa</i>	-	Least concern	-
	<i>Tephrosia brachyodon</i>	-	Least concern	-
	<i>Vigna</i> sp.	-	Least concern	-
	<i>Zornia muriculata</i>	-	Least concern	-
<b>Leguminosar</b>	<i>Derris involuta</i>	Native derris	Least concern	-
<b>Malvaceae</b>	<i>Abutilon oxycarpum</i>	-	Least concern	-
	<i>Hibiscus heterophyllus</i>	-	Least concern	-
	<i>Sida cordifolia</i>	-	Introduced	-
	<i>Sida hackettiana</i>	-	Least concern	-
<b>Meliaceae</b>	<i>Anthocarapa nitidula</i>	Incense cedar	Least concern	-
	<i>Dysoxylum rufum</i>	-	Least concern	-
	<i>Melia azedarach</i>	White cedar	Least concern	-
	<i>Toona ciliata</i>	Red cedar	Least concern	-
	<i>Turraea pubescens</i>	Native honeysuckle	Least concern	-
<b>Menispermaceae</b>	<i>Legnephora moorei</i>	-	Least concern	-
	<i>Stephania japonica</i>	-	Least concern	-
<b>Monimiaceae</b>	<i>Wilkiea macrophylla</i>	Large-leaved wilkiea	Least concern	-
<b>Moraceae</b>	<i>Ficus coronata</i>	Creek sandpaper fig	Least concern	-

Family	Scientific Name	Common Name	NC Act Status	EPBC Act Status
	<i>Ficus fraseri</i>	White sandpaper fig	Least concern	-
	<i>Ficus macrophylla</i>	-	Least concern	-
	<i>Ficus macrophylla forma macrophylla</i>	Moreton Bay fig	Least concern	-
	<i>Ficus obliqua</i>	-	Least concern	-
	<i>Ficus opposita</i>	-	Least concern	-
	<i>Ficus watkinsiana</i>	Green-leaved Moreton Bay fig	Least concern	-
	<i>Maclura cochinchinensis</i>	Cockspur thorn	Least concern	-
	<i>Streblus brunonianus</i>	Whalebone tree	Least concern	-
	<i>Trophis scandens</i>	-	Least concern	-
<b>Myrsinaceae</b>	<i>Embelia australiana</i>	Embelia	Least concern	-
<b>Myrtaceae</b>	<i>Acmena smithii</i>	Lillypilly satinash	Least concern	-
	<i>Angophora leiocarpa</i>	Rusty gum	Least concern	-
	<i>Angophora subvelutina</i>	-	Least concern	-
	<i>Corymbia intermedia</i>	Pink bloodwood	Least concern	-
	<i>Corymbia tessellaris</i>	Moreton Bay ash	Least concern	-
	<i>Eucalyptus acmenoides</i>	-	Least concern	-
	<i>Eucalyptus crebra</i>	Narrow-leaved red ironbark	Least concern	-
	<i>Eucalyptus grandis</i>	Flooded gum	Least concern	-
	<i>Eucalyptus microcorys</i>	-	Least concern	-
	<i>Eucalyptus moluccana</i> x <i>E. siderophloia</i>	-	Least concern	-
	<i>Eucalyptus propinqua</i>	Small-fruited grey gum	Least concern	-
	<i>Eucalyptus siderophloia</i>	-	Least concern	-

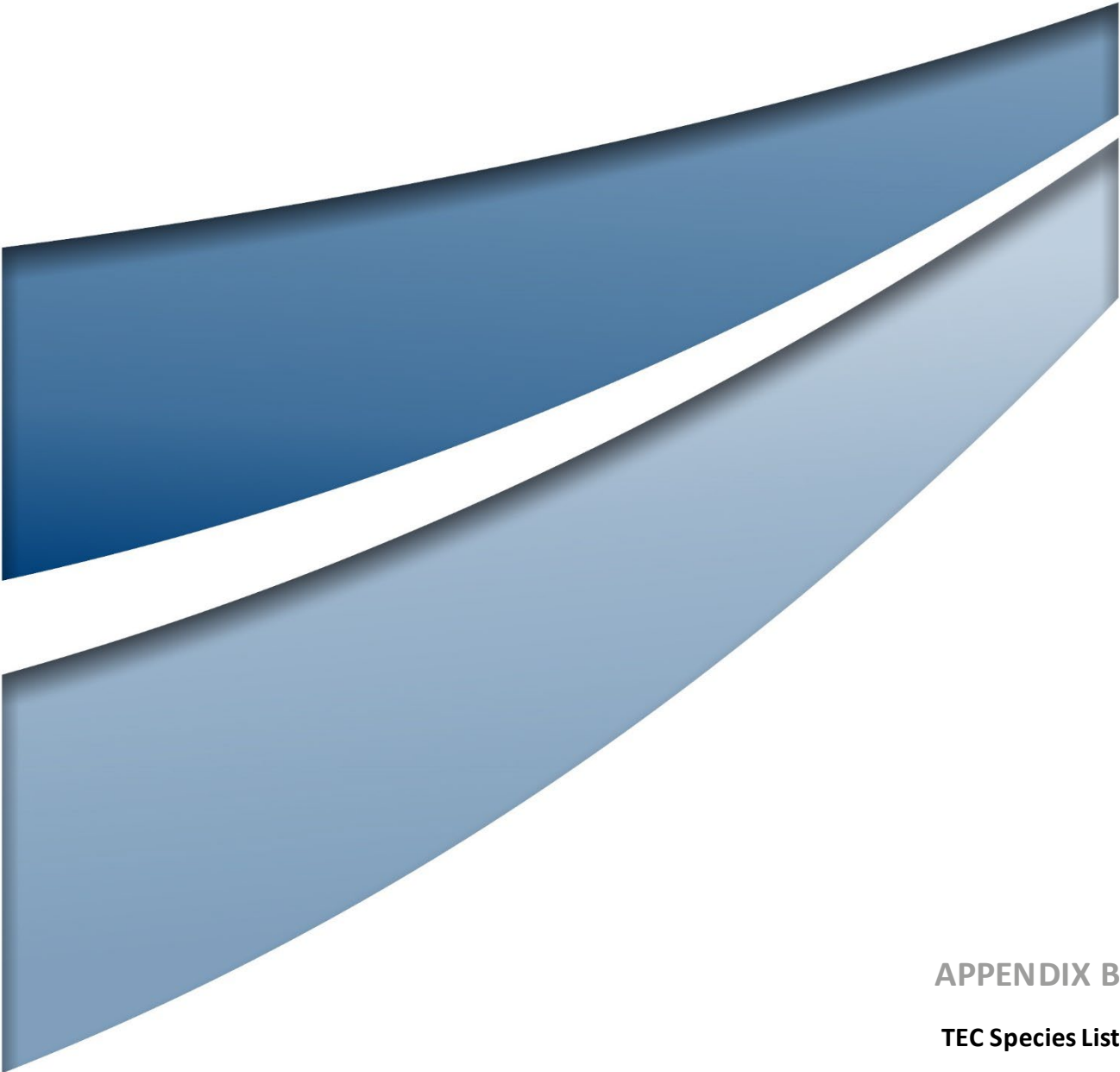
Family	Scientific Name	Common Name	NC Act Status	EPBC Act Status
	<i>Eucalyptus tereticornis</i>	-	Least concern	-
	<i>Gossia bidwillii</i>	-	Least concern	-
	<i>Lophostemon confertus</i>	Brush box	Least concern	-
	<i>Lophostemon suaveolens</i>	Swamp box	Least concern	-
	<i>Melaleuca viminalis</i>	-	Least concern	-
	<i>Rhodamnia rubescens</i>	Scrub turpentine	Critically endangered	Critically endangered
	<i>Syzygium australe</i>	Scrub cherry	Least concern	-
	<i>Syzygium francisii</i>	Giant watergum	Least concern	-
<b>Oleaceae</b>	<i>Notelaea longifolia</i>	-	Least concern	-
	<i>Notelaea ovata</i>	Forest olive	Least concern	-
<b>Orchidaceae</b>	<i>Cymbidium suave</i>	-	Least concern	-
<b>Oxalidaceae</b>	<i>Oxalis corniculata</i>	-	Introduced	-
	<i>Oxalis perennans</i>	-	Least concern	-
<b>Passifloraceae</b>	<i>Passiflora suberosa</i>	Corky passion flower	Introduced	-
<b>Petiveriaceae</b>	<i>Rivina humilis</i>	-	Introduced	-
<b>Phyllanthaceae</b>	<i>Breynia oblongifolia</i>	-	Least concern	-
	<i>Bridelia leichhardtii</i>	-	Least concern	-
	<i>Cleistanthus cunninghamii</i>	Omega	Least concern	-
	<i>Glochidion ferdinandi</i>	-	Least concern	-
	<i>Phyllanthus virgatus</i>	-	Least concern	-
	<i>Poranthera microphylla</i>	Small poranthera	Least concern	-
<b>Picrodendraceae</b>	<i>Dissiliaria baloghioides</i>	Hauer	Least concern	-
<b>Pittosporaceae</b>	<i>Bursaria spinosa subsp. spinosa</i>	-	Least concern	-
	<i>Pittosporum multiflorum</i>	-	Least concern	-
	<i>Pittosporum revolutum</i>	Yellow pittosporum	Least concern	-
<b>Plantaginaceae</b>	<i>Veronica plebeia</i>	Trailing speedwell	Least concern	-
<b>Poaceae</b>	<i>Alloteropsis semialata</i>	Cockatoo grass	Least concern	-
	<i>Aristida</i> sp.	-	Least concern	-

Family	Scientific Name	Common Name	NC Act Status	EPBC Act Status
	<i>Austrostipa</i> sp.	-	Least concern	-
	<i>Chrysopogon fallax</i>	-	Least concern	-
	<i>Cymbopogon refractus</i>	Barbed-wire grass	Least concern	-
	<i>Entolasia stricta</i>	Wiry panic	Least concern	-
	<i>Eragrostis sororia</i>	-	Least concern	-
	<i>Heteropogon contortus</i>	Black speargrass	Least concern	-
	<i>Imperata cylindrica</i>	Blady grass	Least concern	-
	<i>Megathyrsus maximus</i>	-	Introduced	-
	<i>Melinis repens</i>	Red natal grass	Introduced	-
	<i>Oplismenus aemulus</i>	Creeping shade grass	Least concern	-
	<i>Ottochloa gracillima</i>	Pademelon grass	Least concern	-
	<i>Panicum effusum</i>	-	Least concern	-
	<i>Panicum</i> sp.	-	Least concern	-
	<i>Paspalidium distans</i>	Shotgrass	Least concern	-
	<i>Paspalum conjugatum</i>	Sourgrass	Least concern	-
	<i>Poa labillardierei</i> var. <i>labillardierei</i>	Tussock grass	Least concern	-
	<i>Sarga leiocladum</i>	-	Least concern	-
	<i>Sporobolus</i> sp.	-	Least concern	-
	<i>Themeda triandra</i>	Kangaroo grass	Least concern	-
	<i>Urochloa decumbens</i>	-	Least concern	-
<b>Polygonaceae</b>	<i>Persicaria</i> sp.	-	Least concern	-
<b>Polypodiaceae</b>	<i>Drynaria rigidula</i>	-	Least concern	-
	<i>Platynerium superbum</i>	Staghorn fern	Least concern	-
<b>Proteaceae</b>	<i>Banksia integrifolia</i>	-	Least concern	-
	<i>Banksia serrata</i>	Red honeysuckle	Least concern	-
	<i>Grevillea robusta</i>	-	Least concern	-
<b>Pteridaceae</b>	<i>Adiantum aethiopicum</i>	-	Least concern	-

Family	Scientific Name	Common Name	NC Act Status	EPBC Act Status
	<i>Adiantum atroviride</i>	-	Least concern	-
	<i>Adiantum hispidulum</i>	-	Least concern	-
	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	-	Least concern	-
	<i>Pellaea paradoxa</i>	Heart fern	Least concern	-
<b>Putranjivaceae</b>	<i>Drypetes deplanchei</i>	Grey boxwood	Least concern	-
<b>Rhamnaceae</b>	<i>Alphitonia excelsa</i>	Soap tree	Least concern	-
<b>Rosaceae</b>	<i>Rubus moluccanus</i>	-	Least concern	-
	<i>Rubus parvifolius</i>	Pink-flowered native raspberry	Least concern	-
	<i>Rubus rosifolius</i>	-	Least concern	-
<b>Rubiaceae</b>	<i>Atractocarpus chartaceus</i>	-	Least concern	-
	<i>Psychotria daphnoides</i>	-	Least concern	-
	<i>Spermacoce</i> sp.	-	Least concern	-
<b>Rutaceae</b>	<i>Acronychia pauciflora</i>	Soft acronychia	Least concern	-
	<i>Bouchardatia neurococca</i>	Union nut	Least concern	-
	<i>Citrus australis</i>	-	Least concern	-
	<i>Flindersia collina</i>	Broad-leaved leopard tree	Least concern	-
	<i>Flindersia schottiana</i>	Bumpy ash	Least concern	-
	<i>Melicope micrococca</i>	White evodia	Least concern	-
	<i>Pentaceras australe</i>	Bastard crow's ash	Least concern	-
	<i>Sarcomelicope simplicifolia</i>	-	Least concern	-
	<i>Zanthoxylum brachyacanthum</i>	-	Least concern	-
	<i>Zieria smithii</i>	-	Least concern	-
<b>Santalaceae</b>	<i>Exocarpos cupressiformis</i>	Native cherry	Least concern	-
<b>Sapindaceae</b>	<i>Alectryon subdentatus</i>	-	Least concern	-
	<i>Alectryon tomentosus</i>	-	Least concern	-
	<i>Arytera distylis</i>	Twin-leaved coogera	Least concern	-

Family	Scientific Name	Common Name	NC Act Status	EPBC Act Status
	<i>Cupaniopsis serrata</i>	Smooth tuckeroo	Least concern	-
	<i>Diploglottis australis</i>	Native tamarind	Least concern	-
	<i>Elattostachys nervosa</i>	Green tamarind	Least concern	-
	<i>Guioa semiglauca</i>	Guioa	Least concern	-
	<i>Harpullia</i> sp.	-	Least concern	-
	<i>Jagera pseudorhus</i>	-	Least concern	-
<b>Sapotaceae</b>	<i>Planchonella australis</i>	-	Least concern	-
<b>Simaroubaceae</b>	<i>Ailanthus triphysa</i>	White siris	Least concern	-
<b>Smilacaceae</b>	<i>Smilax australis</i>	Barbed-wire vine	Least concern	-
<b>Solanaceae</b>	<i>Solanum mauritianum</i>	Wild tobacco	Introduced	-
	<i>Solanum nigrum</i>	-	Introduced	-
	<i>Solanum seaforthianum</i>	Brazilian nightshade	Introduced	-
	<i>Solanum stelligerum</i>	Devil's needles	Least concern	-
	<i>Solanum torvum</i>	Devil's fig	Introduced	-
<b>Sparrmanniaceae</b>	<i>Grewia latifolia</i>	Dysentery plant	Least concern	-
<b>Sterculiaceae</b>	<i>Argyrodendron</i> sp. (Kin Kin W.D.Francis AQ81198)	Rusty tulip oak	Least concern	-
	<i>Argyrodendron trifoliolatum</i>	Booyong	Least concern	-
	<i>Brachychiton discolor</i>	-	Least concern	-
<b>Stylidiaceae</b>	<i>Stylidium graminifolium</i>	Grassy-leaved trigger-flower	Least concern	-
<b>Thymelaeaceae</b>	<i>Pimelea latifolia</i>	-	Least concern	-
<b>Ulmaceae</b>	<i>Aphananthe philippinensis</i>	-	Least concern	-
	<i>Trema tomentosa</i>	-	Least concern	-
<b>Urticaceae</b>	<i>Dendrocnide excelsa</i>	Giant stinging tree	Least concern	-
	<i>Dendrocnide photinophylla</i>	Shiny-leaved stinging tree	Least concern	-

Family	Scientific Name	Common Name	NC Act Status	EPBC Act Status
<b>Verbenaceae</b>	<i>Lantana camara</i>	Lantana	Introduced	-
	<i>Verbena</i> sp.	-	Introduced	-
<b>Violaceae</b>	<i>Pigea stellarioides</i>	-	Least concern	-
	<i>Viola hederacea</i>	-	Least concern	-
<b>Vitaceae</b>	<i>Cayratia acris</i>	Hairy grape	Least concern	-
	<i>Cissus antarctica</i>	-	Least concern	-
	<i>Cissus hypoglauca</i>	-	Least concern	-
	<i>Tetrastigma nitens</i>	Shining grape	Least concern	-
<b>Xanthorrhoeaceae</b>	<i>Xanthorrhoea johnsonii</i>	-	Least concern	-
	<i>Xanthorrhoea latifolia</i>	-	Least concern	-
<b>Zamiaceae</b>	<i>Macrozamia</i> sp.	-	Least concern	-
<b>Zingiberaceae</b>	<i>Alpinia caerulea</i>	Wild ginger	Least concern	-



**APPENDIX B**

**TEC Species List**



Family	Scientific Name	Common Name	Feature 62 and 94	Feature 20 and 21	Feature 128
Apocynaceae	<i>Tabernaemontana pandacaqui</i>	Banana bush	-	-	x
Araliaceae	<i>Polyscias elegans</i>	Celery wood	x	x	x
Araucariaceae	<i>Araucaria cunninghamii</i>	Hoop pine	x	x	x
Arecaceae	<i>Archontophoenix cunninghamiana</i>	Piccabeen palm	x	x	-
	<i>Calamus muelleri</i>	Lawyer vine	-	x	-
Aspleniaceae	<i>Asplenium australasicum</i>	-	-		x
Bignoniaceae	<i>Pandorea floribunda</i>	-	-	x	-
Byttneriaceae	<i>Commersonia bartramia</i>	Brown kurrajong	x	-	-
Capparaceae	<i>Capparis arborea</i>	Brush caper berry	x	x	x
Cunoniaceae	<i>Caldcluvia paniculosa</i>	Rose-leaf marara	x	x	-
Ebenaceae	<i>Diospyros pentamera</i>	Myrtle ebony	x	x	-
Elaeocarpaceae	<i>Elaeocarpus obovatus</i>	Blueberry ash	x		-
	<i>Sloanea australis</i>	-	-	x	-
Euphorbiaceae	<i>Baloghia inophylla</i>	Scrub bloodwood	x	x	-
	<i>Mallotus philippensis</i>	Red kamala	x	x	x
Lamiaceae	<i>Clerodendrum floribundum</i>	-	-	x	-
	<i>Gmelina leichhardtii</i>	White beech	x	x	-
Lauraceae	<i>Beilschmiedia elliptica</i>	Grey walnut	x	x	-
	<i>Cinnamomum oliveri</i>	Oliver's sassafras	-	x	-
	<i>Cryptocarya obovata</i>	Pepperberry	x	x	-
	<i>Endiandra pubens</i>	Hairy walnut	-	x	x
	<i>Neolitsea dealbata</i>	White bolly gum	x	-	-
Laxmanniaceae	<i>Cordyline rubra</i>	Red-fruited palm lily	x	x	-
	<i>Eustrephus latifolius</i>	Wombat berry	-	-	x
Leguminosae (Caesalpinioideae, mimosoid clade)	<i>Pararchidendron pruinsum</i>	-	-	x	-
Leguminosae (Papilionoideae)	<i>Castanospermum australe</i>	Black bean	x	-	x
Meliaceae	<i>Anthocarapa nitidula</i>	Incense cedar	x	x	-
	<i>Dysoxylum rufum</i>	-	x	-	-

Family	Scientific Name	Common Name	Feature 62 and 94	Feature 20 and 21	Feature 128
	<i>Melia azedarach</i>	White cedar	x	-	x
	<i>Toona ciliata</i>	Red cedar	x	-	x
<b>Menispermaceae</b>	<i>Stephania japonica</i>	-	-	-	x
<b>Moraceae</b>	<i>Ficus coronata</i>	Creek sandpaper fig	-	x	-
	<i>Ficus fraseri</i>	White sandpaper fig	x	-	-
	<i>Ficus macrophylla</i>	-	x	-	x
	<i>Ficus obliqua</i>	-	x	-	-
	<i>Ficus watkinsiana</i>	Green-leaved Moreton Bay fig	x	x	-
	<i>Streblus brunonianus</i>	Whalebone tree	x	x	x
<b>Myrtaceae</b>	<i>Acmena smithii</i>	Lillypilly satinash	x	x	-
	<i>Gossia bidwillii</i>	-	x	x	-
	<i>Lophostemon confertus</i>	Brush box	x	x	x
	<i>Rhodamnia rubescens</i>	Scrub turpentine	-	x	-
	<i>Syzygium australe</i>	Scrub cherry	x	x	-
	<i>Syzygium francisii</i>	Giant watergum	-	x	-
<b>Oleaceae</b>	<i>Notelaea longifolia</i>	-	x	-	-
<b>Phyllanthaceae</b>	<i>Breynia oblongifolia</i>	-	x	x	-
	<i>Cleistanthus cunninghamii</i>	Omega	x	x	x
	<i>Glochidion ferdinandi</i>	-	-	x	-
<b>Pittosporaceae</b>	<i>Pittosporum multiflorum</i>	-	x	x	x
	<i>Pittosporum revolutum</i>	Yellow pittosporum	x	x	-
<b>Polypodiaceae</b>	<i>Platycterium superbum</i>	Staghorn fern	-	-	x
<b>Proteaceae</b>	<i>Grevillea robusta</i>	-	x	-	-
<b>Rhamnaceae</b>	<i>Alphitonia excelsa</i>	Soap tree	x	x	x
<b>Rubiaceae</b>	<i>Atractocarpus chartaceus</i>	-	x	x	x
<b>Rutaceae</b>	<i>Flindersia schottiana</i>	Bumpy ash	x	-	-
	<i>Melicope micrococca</i>	White evodia	-	x	-
	<i>Pentaceras australe</i>	Bastard crow's ash	x	x	-

Family	Scientific Name	Common Name	Feature 62 and 94	Feature 20 and 21	Feature 128
	<i>Sarcomelicope simplicifolia</i>	-	x	x	-
<b>Sapindaceae</b>	<i>Arytera distylis</i>	Twin-leaved coogera	x		-
	<i>Cupaniopsis serrata</i>	Smooth tuckeroo	x	x	-
	<i>Diploglottis australis</i>	Native tamarind	x	x	x
	<i>Elattostachys nervosa</i>	Green tamarind	x	-	-
	<i>Guioa semiglauca</i>	Guioa	x	-	-
	<i>Jagera pseudorhus</i>	-	x	x	x
<b>Sapotaceae</b>	<i>Planchonella australis</i>	-	-	x	-
<b>Smilacaceae</b>	<i>Smilax australis</i>	Barbed-wire vine	-	-	x
<b>Sterculiaceae</b>	<i>Argyrodendron trifoliolatum</i>	Booyong	x	x	x
<b>Ulmaceae</b>	<i>Aphananthe philippinensis</i>	-	x	x	x
<b>Urticaceae</b>	<i>Dendrocnide excelsa</i>	Giant stinging tree	x	x	x
<b>Vitaceae</b>	<i>Cissus antarctica</i>	-	x	x	x
	<i>Cissus hypoglauca</i>	-	x	x	-