



REVISED ASSESSMENT OF SIGNIFICANCE (7-PART TESTS)

**Lot 1 DP 570076, Lot 2 DP 566529, Lot 1 DP 562222, Lot 1
DP 570077, Lot 1 823679, Lots 46, 54, 55, 199, 200, 201,
202, 205, 206, 209, 228 & 305 DP 755740
Cobaki Lakes, Tweed Heads**

**A Report Prepared for
Leda Manorstead Pty Ltd**

APRIL 2013

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1. INTRODUCTION

1.1 Background

JWA Pty Ltd (JWA) has been engaged by LEDA Manorstead Pty Ltd to complete an Assessment of Significance (7-part test equivalence) to accompany the Preferred Project Report for the proposed development at Cobaki Lakes.

JWA prepared an Ecological Assessment for the Cobaki Lakes site in October 2008 in response to the Director-General's Environmental Assessment Requirements (DGEAR's) issued 21st August 2007. The Ecological Assessment was placed on public exhibition along with various other reports required under the DGEAR's.

Following submissions from the public and State Agencies, some amendments have occurred to the Concept Plan. This Revised Assessment of Significance (7-part test equivalence) has been completed to provide additional information and has considered changes to the Concept Plan.

1.2 The Subject site

1.2.1 Locality

The Locality is defined as the area within a 10km radius of the Subject site. The Locality therefore extends from North Tumbulghum in the south to Burleigh Heads in the north and from Currumbin Valley in the west to Tweed Heads in the east (**FIGURE 1**).

Prominent features in the locality include the townships of Coolangatta, Palm Beach and Banora Point and the villages of Tallebudgera, Pigabeen and Bilambil Heights. Prominent water bodies in the locality include the Cobaki Broadwater, Currumbin Creek, Cobaki Creek, Terranora Broadwater and the Coral Sea.

Dominant habitat types are eucalypt forest, swamp sclerophyll forest, heathlands, sedgelands, rushlands, subtropical rainforest, littoral rainforest and intertidal communities. Land uses within the locality include residential, forestry, conservation, tourism, commercial, fishing, grazing and agriculture.

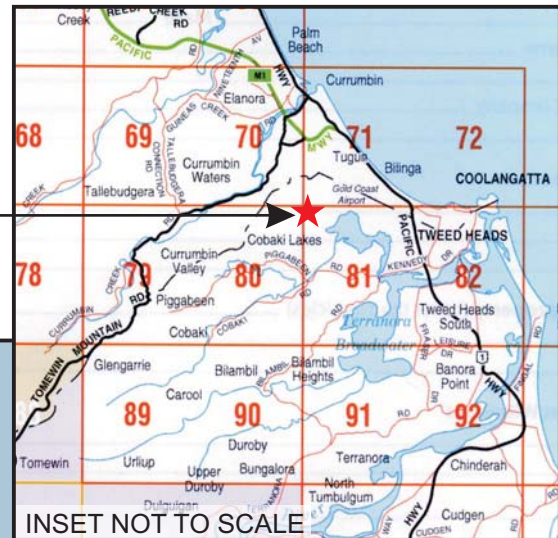
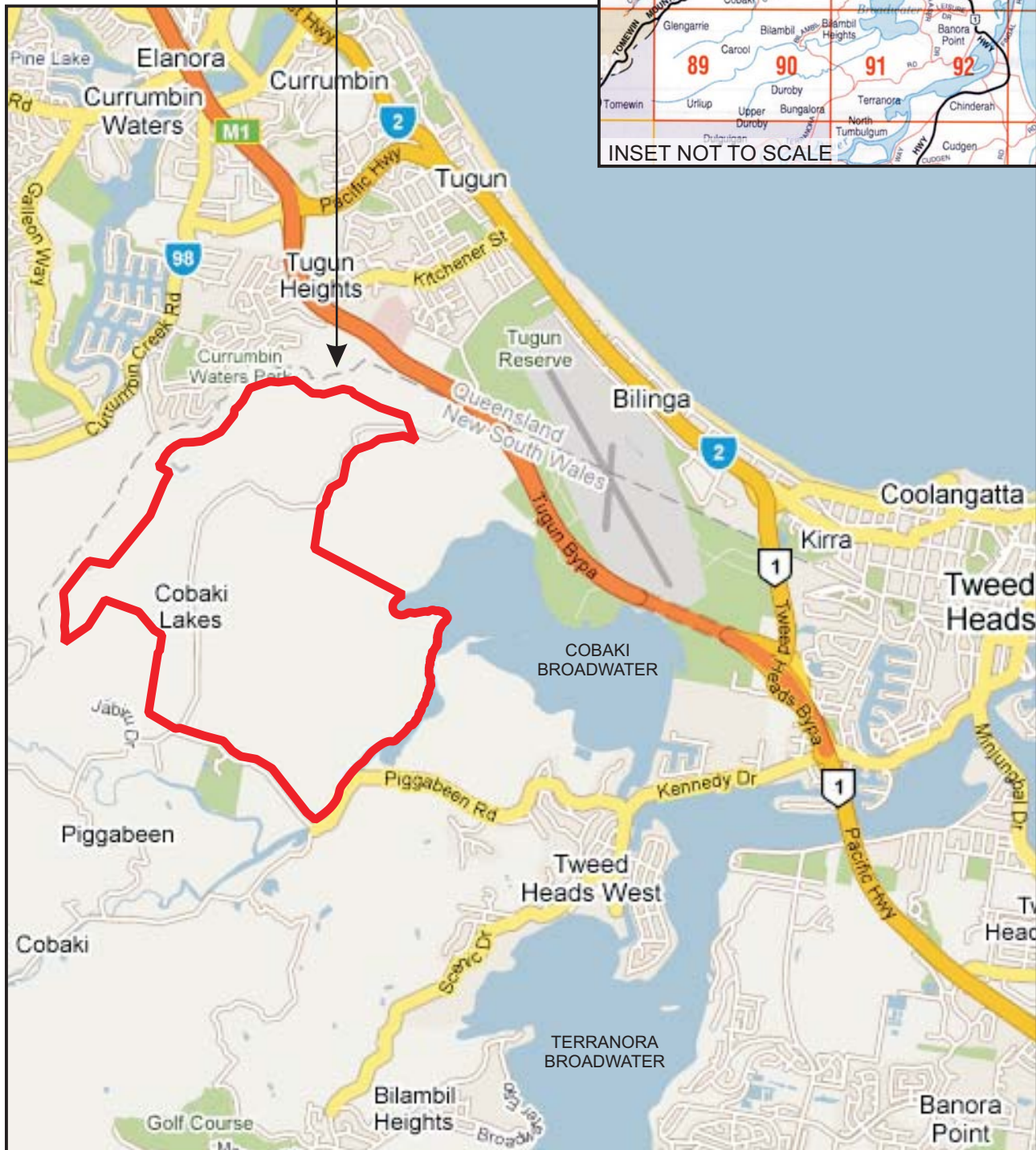
1.2.2 Site description

The Subject site consists of land described as Lot 1 DP 570076, Lot 2 DP 566529, Lot 1 DP 562222, Lot 1 DP 570077, Lot 1 823679, Lots 46, 54, 55, 199, 200, 201, 202, 205, 206, 209, 228 & 305 DP 755740, Cobaki Lakes, off Pigabeen Road, Tweed Heads. The site covers an area of approximately 605 hectares and is shown in **FIGURE 2**.

The site lies adjacent to private landholdings to the north-west and south-east, and comprises a large portion of land cleared for agricultural purposes (i.e. grazing) throughout which a number of vegetation communities occur. Extensive clearing and subsequent slashing over the drainage basin has resulted in the recruitment of a combination of native and introduced grass species in place of native plants. Forested Crown lands which form the NSW-QLD border also form the northern and western boundary of the Cobaki Lakes site.



SUBJECT SITE



<p>SOURCE: Google Maps</p> <p>SCALE: 1 : 50 000 @ A4</p> <p>JAMES WARREN & ASSOCIATES PTY LIMITED Environmental Consultants</p>	<p>CLIENT Leda Developments Pty Ltd</p> <p>PROJECT Revised Assessment of Significance Cobaki Lakes, Cobaki, NSW Shire of Tweed</p>	<p>FIGURE 1</p> <p>PREPARED: BW DATE: 30 June 2010 FILE: 97038_SA_Locality.cdr</p>	<p>TITLE</p> <p>LOCALITY PLAN</p>
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- LEGEND**
- Cadastral Boundaries
 - Restriction on Use Area
 - Site Outline

SOURCE:
Aerial - Michel Group Services (Ref: 6400-197.dwg)
- photo taken March 2010

0 500m
SCALE: 1 : 12 500 @ A3

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FIGURE 2
PREPARED: BW
DATE: 30 June 2010
FILE: 97038_SA_Base.dwg

TITLE
SUBJECT SITE

FIGURE 2 shows a recent aerial photograph of the site. Previous land clearing for agricultural purposes (i.e. grazing) has occurred across the majority of the site. Currently sixteen (16) broad vegetation associations comprising twenty-two (22) vegetation communities occur on the site.

1.2.3 Existing use rights

The property has been grazed by cattle since the early 1900's. Landuse activities which have been a long term and constant feature of this site are defined in Section 106 of the EP&A Act 1979. Existing use rights occur over the Subject site for routine agricultural activities including the construction and maintenance of drains, fencing and firebreaks as well as pasture improvement activities.

1.2.4 Land-use Zones

The Subject site currently contains the following landuse zones:

- 2(c) Urban Expansion
- 2(e) Residential Tourist Zone
- Recreation (Special Purposes)
- Environmental Protection (Scenic Escarpment)
- Environmental Protection (Habitat)

The current zoning plan is shown in **FIGURE 3**. It is worth noting that the Concept Plan proposes amendments to the current zoning of the site. These amendments fall into five categories as follows:

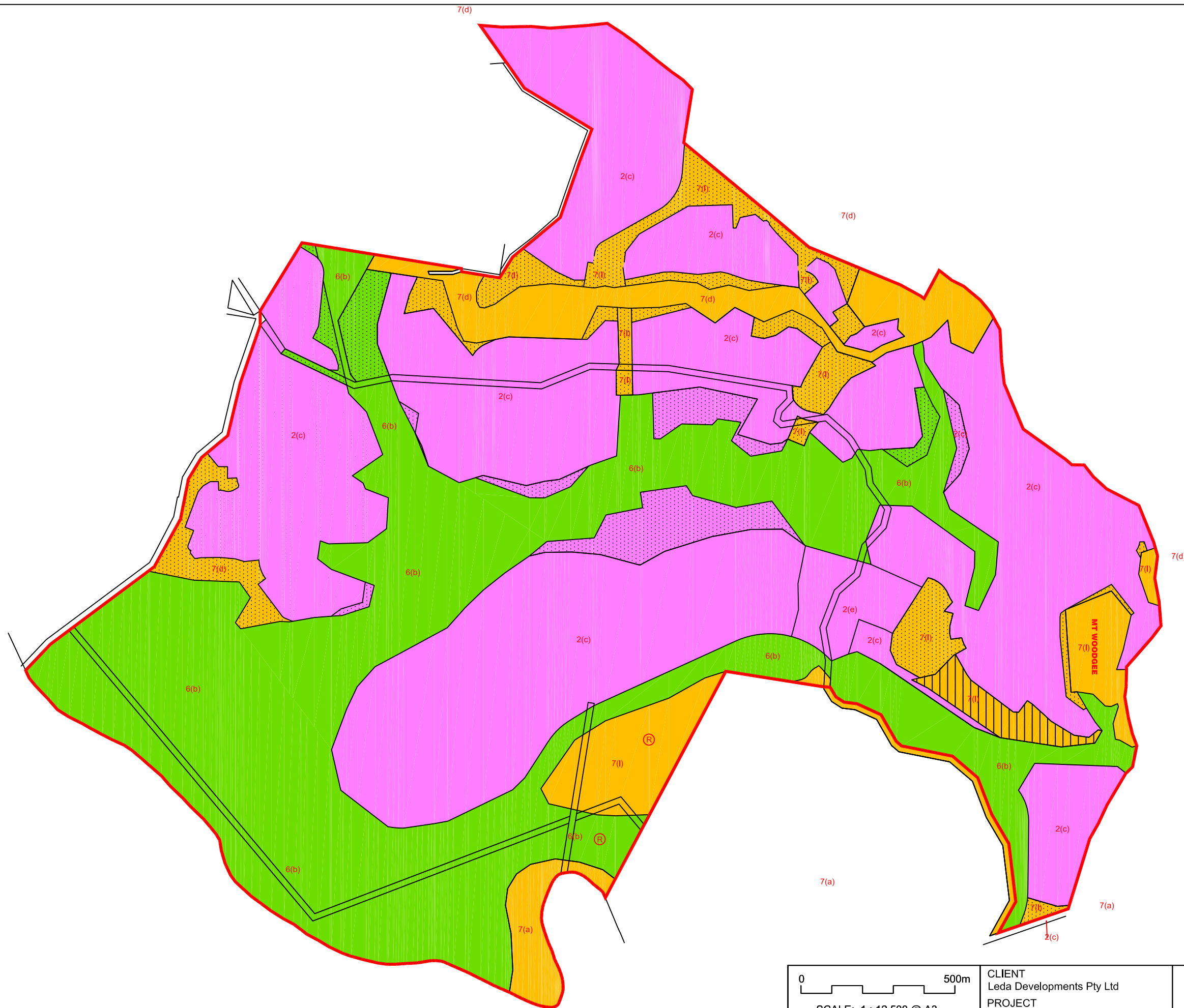
1. Amendments in accordance with Clause 52 of the Tweed LEP 2000;
2. Amendments to zonings contemplated by existing Development Consents;
3. Other proposed additions to the 2(c) Urban Expansion zone;
4. Proposed additions to the 7(l) Environmental Protection (Habitat) zone; and
5. Proposed additions to the 6(b) Recreation zone.

The proposed landuse zones are shown in **FIGURE 4**.

1.2.5 Soils and Geology

The Subject site occupies the lower or eastern end of the Cobaki - Pigabeen Valley system. The site topography is considered as two (2) separate systems:

- The Sub-coastal foothills and outcrops of the eastern end of the McPherson Range, which comprises the western and northern part of the site and covers an area of approximately 280 hectares, or 42% of the site, and corresponding to a broad north/south line of hills. The terrain of these hills is rolling/hilly to hilly in a series of ridges and spurs with slopes of 10% to 25% and some 16% of the site having slopes in excess of 25%.
- The foothills enclose a coastal plain drainage basin comprising a composite of river/estuarine floodplain and sand-plain formed by sandbanks, beach or rolled and flattened dune systems.



LEGEND

1. RURAL

- 1(a)** (a) Rural
- 1(b1)** (b1) Agricultural Protection
- 1(b2)** (b2) Agricultural Protection
- 1(c)** (c) Rural Living

2. RESIDENTIAL

- 2(a)** (a) Low Density Residential
- 2(b)** (b) Medium Density Residential
- 2(c)** (c) Urban Expansion
- 2(d)** (d) Village
- 2(e)** (e) Residential Tourist
- 2(f)** (f) Tourism

5. SPECIAL USES

- 5(a)** (a) Special Uses

6. OPEN SPACE

- 6(a)** (a) Open Space
- 6(b)** (b) Recreation

7. ENVIRONMENTAL PROTECTION

- 7(a)** (a) Environmental Protection (Wetlands & Littoral Rainforests)
- 7(d)** (d) Environmental Protection (Scenic/Escarpment)
- 7(f)** (f) Environmental Protection (Coastal Lands)
- 7(l)** (l) Environmental Protection (Habitat)

- S14** SEPP14 - Coastal Wetlands

- Clause 52 (Cobaki Lakes)

- Clause 52 (Cobaki Lakes)

- Restriction On Use (DP1051024)

- Site Outline

SOURCE:
Zoning - Michel Group Services (Ref: 6400-133A.dwg)

0 500m
SCALE: 1 : 12 500 @ A3

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FIGURE 3

PREPARED: BW
DATE: 30 June 2010
FILE: 97038_SA_Base.dwg

TITLE

EXISTING
LANDUSE
ZONES

The McPherson range foothills and elevated portions of the site derive from bedrock of deeply weathered argillites (greywackes, siltstones and shales) of the Neranleigh - Fernvale Group (metasediments) overlain in parts by basalt fragments of the tertiary volcanics. More recent alluvial and estuarine deposits comprise the coastal plains on the site (Woodward-Clyde 1997).

1.3 Proposed Development

The site is proposed to be developed into a master planned residential community. A concept plan for the development is shown as **FIGURE 5**. The proposed development will include the following:

- Development area (346.35 hectares) comprising:
 - Town centre/Neighbourhood centre,
 - Residential precincts, and
 - Community facilities/Education/Infrastructure;
- Public open space (58.20ha); and
- Environmental protection areas (199.86ha).

1.4 Scope of the Report

The NSW *Threatened Species Conservation Act 1995* (TSC Act 1995) requires that the planning and development approval process for development and other activities have regard to the potential for adverse impacts on Threatened flora and fauna species and their habitats.

The Minister for Planning has determined that the proposed development is a 'Major Project' under section 3A of the *Environmental Planning & Assessment Act 1979* (EPA Act 1979).

An Assessment of Significance (7-part test equivalence) has been undertaken for all listed species/EEC's recorded both on the site, and including threatened species recorded adjacent to the site. The potential impact on threatened species, populations or ecological communities, or their habitats was assessed using the *Threatened Species Assessment Guidelines: The Assessment of Significance* (DECC 2007).



LEGEND

- Precinct 6 Proposed Residential Area (extent of application shown below)
- Precincts 1, 2, 4 and 6 to 8 Zone Boundary
- Extent of Precinct 6 Application
- Future Residential Development
- Future Retail / Commercial / Mixed Use
- Future Community Facilities / Education / Utilities Development
- Existing Water Body
- Stormwater Treatment and Delivery Areas
- Cultural Protected Area
- Covenant Protected Area
- Environmental Protection Area
- Open Space
- Casual Park
- Structured Open Space
- 2.5m Shared User Path/Maintenance Access
- Site Outline

SOURCE:
Layout - Design Forum Architects
(Ref: DA 01.01 E Master Plan.dwg)

0500m

SCALE: 1 : 12 500 @ A3

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FIGURE 5

PREPARED: BW
DATE: 05 April 2013
FILE: 97038_SA_Base.dwg

TITLE
DEVELOPMENT
CONCEPT
PLAN

2. ECOLOGICAL VALUES OF THE COBAKI LAKES SITE

2.1 Background

Cobaki Lakes has been comprehensively studied over the last twenty-five (25) years. The following significant ecological values have been recorded on the site:

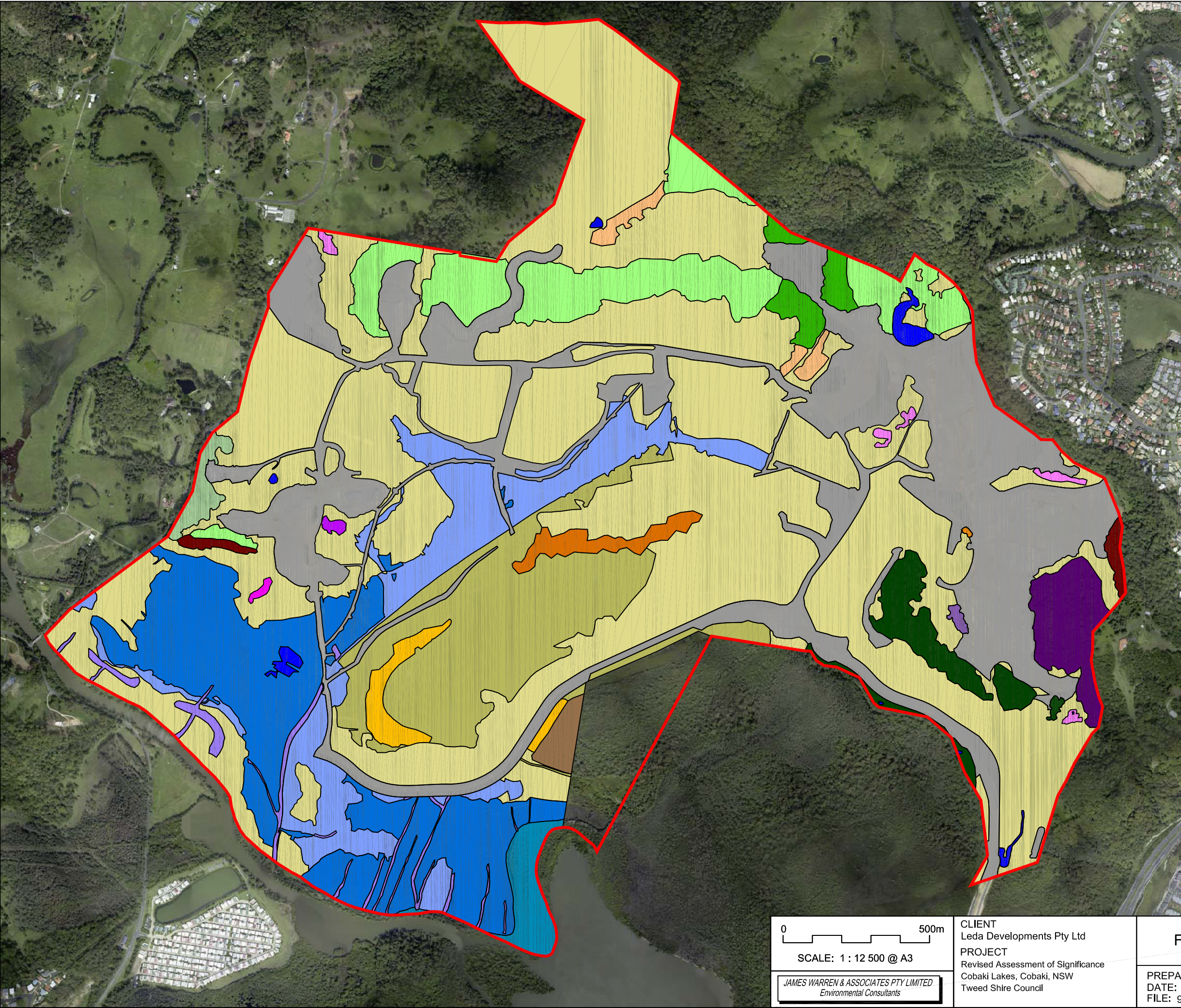
- Twenty-two (22) vegetation communities;
- Six (6) Endangered Ecological Communities;
- Eight (8) Threatened flora species; and
- Twelve (12) Threatened fauna species.

2.2 Vegetation

The vegetation mapping for Cobaki Lakes was completed by JWA (2008). Subsequent to the completion of the 2008 Ecological Assessment, existing earthworks approvals have been implemented in some portions of the Subject site and existing use rights (i.e. cattle grazing) have continued. The vegetation mapping prepared in 2008 has therefore been overlaid on a recent aerial photograph (March 2010) and mapped boundaries checked. In areas where vegetation extent was not clear on the aerial photograph, ground-truthing was completed.

Vegetation communities identified on site are shown in **FIGURE 6** and are described as follows:

- 1a Very Tall Open/Closed Sclerophyll Forest (*Eucalyptus pilularis*, +/- *E. microcorys*, +/- *E. propinqua*, +/- *Corymbia intermedia*)
- 1b Tall Open/Closed Sclerophyll Forest (*E. propinqua*)
- 1c Tall Open Sclerophyll Woodland (*E. pilularis*)
- 1d Tall Open Sclerophyll Forest (*E. pilularis*, +/- *E. siderophloia* +/- *E. tereticornis*)
- 2a Tall Closed Forest (*Lophostemon confertus*, +/- *Araucaria cunninghamii*)
- 2b Tall Open Forest (*Archontophoenix cunninghamiana*)
- 2c Very Tall Closed Forest (*Araucaria cunninghamii*)
- 2d Mid-high Open/Closed Forest (Riparian species +/- Mixed species)
- 3 Tall/Very Tall Open/Closed Forest (*Lophostemon confertus* +/- Mixed rainforest species)
- 4 Closed Scrub (*Banksia aemula*, *E. signata* +/- *Leptospermum* spp.)
- 5 Mid-high Open Woodland (Mixed rainforest species)
- 6 Mid-high Open Woodland (*Eucalyptus robusta*)
- 7 Mid-high Open Woodland (*Eucalyptus signata*)
- 8 Mid-high Open Woodland (*Eucalyptus siderophloia*)
- 9 Low Closed Forest (Re-vegetation areas +/- Mixed *Eucalyptus* species)
- 10 Low Closed Grassland with Scattered Trees (Pastoral grasses +/- Mixed species)
- 11 Low Closed Grassland (*Sporobolus virginicus*, *Triglochin striata*, + /- *Casuarina glauca*)



LEGEND

- Community 1 - Dry sclerophyll communities
- Community 1a - Very tall open/closed sclerophyll forest (*Eucalyptus pilularis* +/- *E. microcorys* +/- *E. propinqua* +/- *Corymbia intermedia*)
 - Community 1b - Tall open/closed sclerophyll forest (*E. propinqua*)
 - Community 1c - Tall open sclerophyll woodland (*E. pilularis*)
 - Community 1d - Tall open sclerophyll forest (*E. pilularis* +/- *E. siderophloia* +/- *E. tereticornis*)
- Community 2 - Rainforest communities
- Community 2a - Tall closed forest (*Lophostemon confertus* +/- *Araucaria cunninghamii*)
 - Community 2b - Tall open forest (*Archontophoenix cunninghamiana*)
 - Community 2c - Very tall closed forest (*A. cunninghamii*)
 - Community 2d - Mid-high open/closed forest (Riparian species +/- Mixed species)
 - Community 3 - Tall/very tall open/closed forest (*L. confertus* +/- Mixed rainforest species)
 - Community 4 - Low closed forest (Heathland)
 - Community 5 - Mid-high open woodland (Mixed rainforest species)
 - Community 6 - Mid-high open woodland (*E. robusta*)
 - Community 7 - Mid-high open woodland (*E. racemosa*)
 - Community 8 - Mid-high open woodland (*E. siderophloia*)
 - Community 9 - Low closed forest (Revegetation areas +/- Mixed *Eucalyptus* species)
 - Community 10 - Low closed grassland with scattered trees (Pastoral grassess +/- Mixed species)
 - Community 11 - Low closed grassland (*Sporobolus virginicus*, *Triglochin striata* +/- *Casuarina glauca*)
 - Community 12 - Rushland/sedgeland/ grassland (Mixed aquatic species)
 - Community 13 - Low to mid-high open mangrove forest (*Avicennia marina* var *australasica* / *Aegiceras corniculatum* +/- *Casuarina glauca*)
 - Community 14 - Dams & drainage lines (Mixed aquatic species)
 - Community 15 - Low open forest/woodland (*Casuarina glauca* +/- Mixed species)
 - Community 16 - Slashed grassland/ heathland/sedgeland (Mixed Species)
 - Unvegetated land
 - Site Outline

SOURCE:
Vegetation - James Warren & Associates Pty Ltd
July/Sept 2007 & May 2008
Aerial - Michel Group Services (Ref: 6400-197.dwg)
- photo taken March 2010

0 500m
SCALE: 1 : 12 500 @ A3

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FIGURE 6
PREPARED: BW
DATE: 30 June 2010
FILE: 97038_SA_BaseRD.dwg

TITLE
VEGETATION
COMMUNITIES

- 12 Brackish Area (Mixed aquatic species)
- 13 Low to Mid-high Open Mangrove Forest (*Avicennia marina* var. *australasica* / *Aegiceras corniculatum* +/- *Casuarina glauca*)
- 14 Dam & Drainage Lines (Mixed aquatic species)
- 15 Low open forest/woodland (*Casuarina glauca* +/- Mixed species)
- 16 Slashed Grassland/Heath land/Sedgeland (Mixed species)

2.3 Endangered Ecological Communities

Six (6) Endangered Ecological Communities (EEC's)¹ are considered to occur on the site (FIGURE 7). These are as follows:

- Swamp sclerophyll forest on coastal floodplain - which occurs as an isolated clump of scattered Swamp mahogany in the central eastern of the Subject site;
- Lowland rainforest on floodplain - occurring at various locations generally in association with drainage lines and depressions;
- Lowland rainforest - occurring on Mt. Woodgee and on lower slopes in the northern portion of the Subject site;
- Freshwater wetlands - occurring in the central and eastern portions of the site;
- Swamp oak floodplain forest - occurring in association with drainage lines in the south-east of the site; and
- Coastal saltmarsh in the NSW North Coast bioregion - occurring in the south-east of the site.

2.4 Threatened Species

2.4.1 Flora

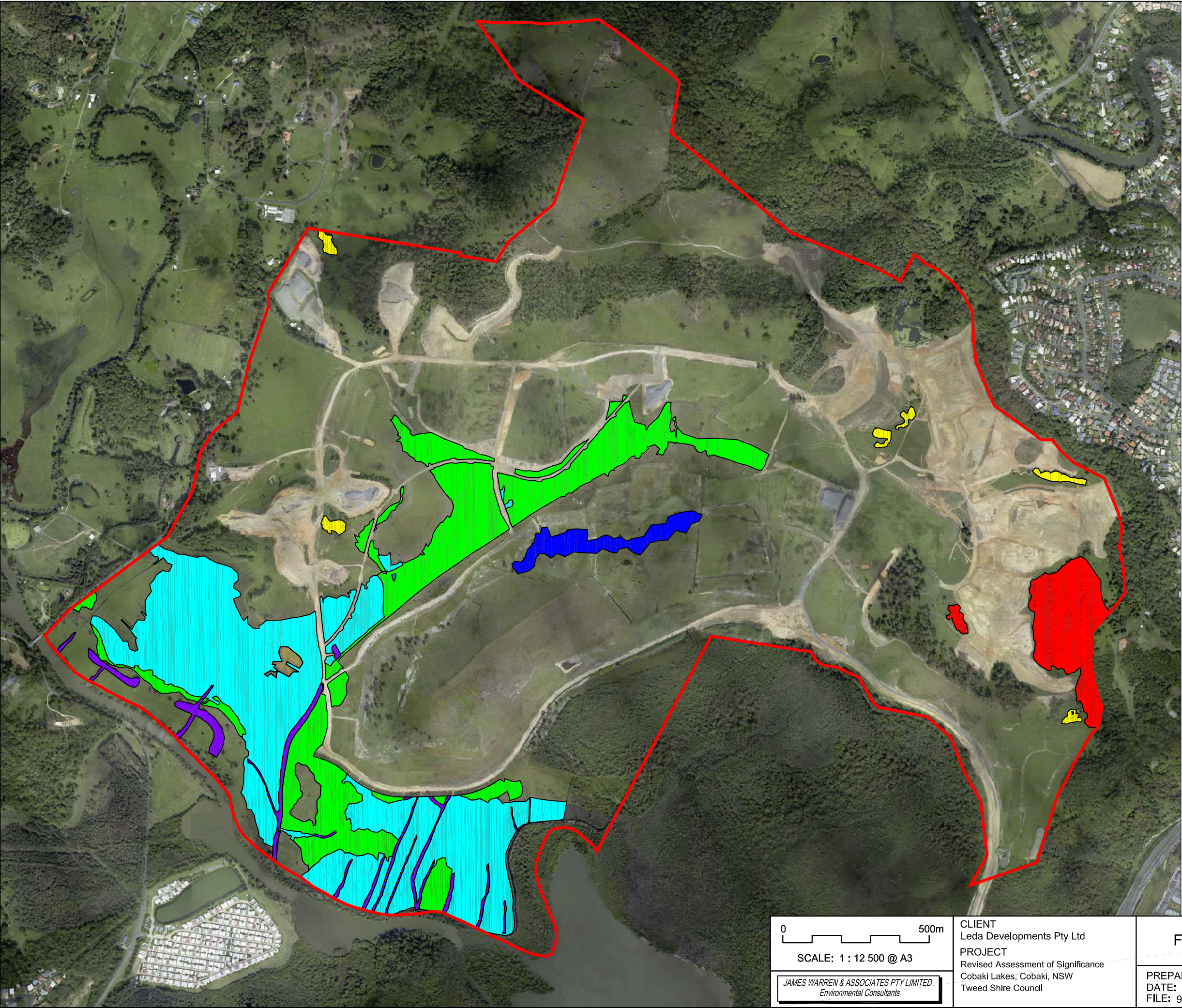
Eight (8) Threatened² flora species have been recorded on the Subject site (FIGURES 8, 8a, 8b & 8c). Threatened flora recorded includes the following species:

- White yiel yiel (*Grevillea hilliana*) - Endangered (TSC Act);
- Scented acronychia (*A. littoralis*) - Endangered (TSC Act & EPBC Act);
- Fine-leaved tuckeroo (*Lepiderema pulchella*) - Vulnerable (TSC Act);
- Spiny gardenia (*Randia moorei*) - Endangered (TSC Act & EPBC Act);
- Marblewood (*Acacia bakeri*) - Vulnerable (TSC Act);
- Brush cassia (*Cassia brewsteri* var. *marksiana*) - Endangered (TSC Act);
- Coolamon (*Syzygium moorei*) - Vulnerable (TSC Act & EPBC Act); and
- Green-leaved rose walnut (*Endiandra muelleri* subsp. *bracteata*) - Endangered (TSC Act).

An additional five (5) Threatened flora species have been recorded during surveys on adjacent land, including:

¹ As listed within schedules of the TSC Act (1995).

² As listed within schedules of the TSC Act (1995) and EPBC Act (1999).



- LEGEND**
- Lowland Rainforest
 - Lowland Rainforest on Floodplain
 - Swamp Sclerophyll Forest on Floodplain
 - Swamp Oak Floodplain Forest
 - Freshwater Wetland (Degraded)
 - Saltmarsh
 - Site Outline

SOURCE:
EEC's - James Warren & Associates Pty Ltd
Aerial - Michel Group Services (Ref: 6400-197.dwg)
- photo taken March 2010

0 500m
SCALE: 1 : 12 500 @ A3

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FIGURE 7
PREPARED: BW
DATE: 30 June 2010
FILE: 97038_SA_Base.dwg

TITLE
ENDANGERED
ECOLOGICAL
COMMUNITIES