PIGGABEEN CORRIDOR

MCPHERSON CORRIDOR

BORDER RESERVE

COBAKI - TERRANORA REGIONAL CORRIDOR

COABKI CORRIDOR

N

LEGEND

- Regional Corridor
- Subregional Corridor
- Key Habitat
- Proposed Development Areas
- Site Outline

0 500m

1 : 12 500

SOURCE: NSW NPWS Key Habitats & Corridors; SMEC; Michel Group Services (Ref: 6400-197.dwg)

SCALE: 1 : 12 500 @ A3

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Shire of Tweed

FIGURE 16

PREPARED: BW
DATE: 22 October 2012
FILE:97038_EA_Impact corridor.cdr

TITLE

IMPACT ON NPWS KEY HABITATS & CORRIDORS

4.2.3.4 Proposed amelioration measures

The proposed development has been designed to utilise existing cleared areas where possible. A network of existing vegetated corridors will be retained on the site the most significant of which, include the forested escarpment in the western portion of the site and Mt. Woodgee and associated rainforest habitats in the northern portion of the site. Additionally, smaller interlinking corridors will be provided on the subject site through regeneration and revegetation works.

A Revised Site Regeneration and Revegetation Plan has been prepared for the subject site (JWA 2012a) and will result in approximately 83.06ha of revegetation and 9.54ha of regeneration works. The regeneration and revegetation works will provide vegetated links across the site and ensure that the remaining wildlife corridors will be embellished utilising revegetation and natural regeneration principles.

4.2.4 Remnant Bushland

4.2.4.1 Applicability to the subject site

NPWS (2003) describe remnant vegetation as those patches of native trees, shrubs and grasses remaining following clearing operations. The NSW *Native Vegetation Act* (2003) (NV Act 2003) defines remnant native vegetation as any native vegetation other than regrowth. For the purposes of NV Act 2003, regrowth refers to any native vegetation that has regrown since 1st January 1990.

Remnant vegetation:

- can be of any shape or size;
- can include all types of native vegetation communities, including forest woodland, native grasslands, mallee, coastal heathland or rainforest.

Numerous vegetation surveys have been completed on the subject site by JWA between 2000 and the present and have included detailed mapping of vegetation communities as well as searches for Threatened flora species. A plan showing the location of the remnant bushland occurring on the Subject site is included in **FIGURE 17**.

4.2.4.2 Impacts on Remnant Bushland

The potential impacts on remnant bushland from the proposed development are shown in **FIGURE 18.** A summary of the potential loss of remnant bushland is shown in **TABLE 4**.

TABLE 4
POTENTIAL LOSS OF REMNANT BUSHLAND
FROM THE PROPOSED DEVELOPMENT

Community	TOTAL AREA (ha)	Area to be Removed (ha)	Area to be Removed (%)
1a	31.84	3.72	11.68%
1b	4.84	0.75	15.50%
1c	9.35	0.19	2.03%

N

LEGEND

- Remnant Bushland
- 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 17

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

TITLE

REMNANT BUSHLAND

N

LEGEND

- Remnant Bushland
- Proposed Development Areas
- Site Outline

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

0 500m

SCALE: 1 : 12 500 @ A3

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FIGURE 18

PREPARED: BW
DATE: 22 October 2012
FILE: 97038_EA_Base.dwg

TITLE

IMPACT ON REMNANT BUSHLAND

Community	TOTAL AREA (ha)	Area to be Removed (ha)	Area to be Removed (%)
1d	2.58	0.77	29.84%
2a	8.86	0.07	0.79%
2b	0.34	0.01	2.94%
2c	0.39	0.02	5.13%
2d	1.41	-	0%
3	1.88	0.01	0.53%
4	2.44	-	0%
5	0.07	0.01	14.29%
6	3.80	3.80	100%
7	4.19	3.60	85.92%
8	0.27	-	0%
9	2.67	0.13	4.87%
13	5.66	-	0%
TOTAL	**80.59ha**	**13.08ha**	**16.23%**

In total 13.08 hectares of remnant bushland will be lost from the subject site (16.23% of the total area of remnant bushland). The majority of remnant bushland to be removed occurs within portions of the site with existing development approval whilst a small area of remnant bushland will be removed from areas without current development approvals.

4.2.4.3 Proposed amelioration measures

The majority of existing remnant bushland on the subject site will be retained. A total of 67.49 hectares (83.74%) of the remnant bushland on the subject site will be retained. This bushland will be retained within Environmental Protection Areas as well as Open Space areas throughout the development envelope.

The Revised Site Regeneration and Revegetation Plan (JWA 2012a) outlines the various measures to ensure that the retained remnant vegetation is adequately managed. Approximately 61.31ha of revegetation/regeneration works will be completed in accordance with this plan to offset any loss of remnant bushland and to provide vegetated links across the site. Additional amelioration measures for the remnant vegetation will include:

- Weed control will primarily be completed by a qualified Bush regenerator;
- All weed control will be completed using the recommended methods (ARBA approved);
- Weed control will be undertaken on a progressive basis over a three (3) – five (5) year period;
- Embellishment plantings are to be used to consolidate each of the areas of remnant vegetation;
- All areas of remnant vegetation will be fenced to exclude pedestrian traffic and cattle grazing;
- Formal pathways are to be provided through areas of remnant vegetation to prevent the creation of numerous informal tracks;

- All of the rehabilitation works are to be completed by qualified bush regenerators;
- A monitoring and maintenance program for areas of remnant vegetation will be included in the Vegetation Rehabilitation and Management Plan.

4.2.5 Koala Habitat

4.2.5.1 Council consultation - Tweed Coast Koala Atlas (TCKA)

In April, 1993 Council resolved to contribute $10,000 to the Australian Koala Foundation (AKF) to assist them in the preparation of a Tweed Coast Koala Atlas for the eastern section of the Shire. The 37,608 hectare study area comprises approximately 29 percent of Tweed Shire.

The Tweed coast Koala atlas maps parts of the site as Secondary Habitat (**FIGURE 19**). However, clearing activities on the subject site have occurred subsequent to the preparation of the Koala habitat mapping. This has resulted in the removal of vegetation within large areas of the mapped secondary habitat, which now consists of open grassland and is not considered to represent Koala habitat. Recent vegetation assessments of the site have recorded grasslands with scattered trees occurring over much of the Secondary habitat mapped in the Tweed Koala Atlas.

JWA are of the opinion that the large area of mapped Secondary habitat located on the elevated plateau in the western portion of the site, does not represent secondary Koala habitat as described in the Summary of Tweed Coast Koala Atlas.

It should be noted that in the absence of a shire-wide Koala Plan of Management (KPoM), State Environmental Planning Policy No. 44 (SEPP 44) applies.

4.2.5.2 State Environmental Planning Policy No. 44 – Koala Habitat Protection

In response to the state-wide decline of Koala populations the Department of Planning has enacted SEPP - 44 Koala Habitat Protection. The Policy aims to "encourage the proper conservation and management of area of natural vegetation that provide habitat for Koalas, to ensure permanent free-living populations over their present range and to reverse the current trend of population decline."

A number of criteria in the SEPP are to be addressed:

1. Does the policy apply?

Does the subject land occur in an LGA identified in Schedule 1?

The Subject site occurs in the Tweed LGA, which is listed under Schedule 1.
Is the landholding to which the DA applies greater than 1 hectare in area?

Yes.

Legend

- Primary Habitat
- Secondary Habitat (Class A)
- Secondary Habitat (Class B)
- Unknown Habitat Quality
- Mainly Cleared (Some Trees)
- Other Vegetation Communities
- Subject Site

N

0 750m

SOURCE: Australian Koala Foundation - Tweed Coast Koala Habitat Atlas (Tweed Shire Council Mapping)
SCALE: 1 : 30 000 @ A4

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FIGURE 19

PREPARED: BW
DATE: 30 June 2010
FILE: 97038_EA_Koala.cdr

TITLE

KOALA HABITAT AREAS

2. Is the land potential Koala habitat?

Does the site contain areas of native vegetation where the trees of types listed in Schedule 2 constitute at least 15% of the total number of trees in the upper or lower strata of the tree component?

The majority of scattered trees within Community 6 in the eastern portion of the site are Swamp mahogany (*Eucalyptus robusta*), which is listed as a Primary Koala food tree under Schedule 2 of SEPP 44. This community covers a total area of approximately 3.80 hectares and Swamp mahogany in this area constitutes 95% of the total number of trees in the upper strata.

The majority of scattered trees within Community 7 in the eastern portion of the site are Scribbly gum (*Eucalyptus signata*), which is listed as a Primary Koala food tree under Schedule 2 of SEPP 44. This community covers a total area of approximately 4.19 hectares and Scribbly gum in this area constitutes 95% of the total number of trees in the upper strata.

At least 15% of the total number of trees in the upper strata of Community 1a (Blackbutt – Tallowwood association), are Tallowwood (*E. microcorys*), which is also listed under Schedule 2 of SEPP 44. This community covers a total area of approximately 31.84 hectares and Tallowwoods constitute at least 15% of the total number of trees in the upper strata, whilst the lower strata comprises a sparse midstorey of dry Sclerophyll species including Crinkle bush (*Lomatia silaifolia*), Geebung, Grass trees, various *Acacia* species (*A. melanoxylon*, *A. orites*), Dogwood, Forest oak, Tree heath, Red ash, Wild may (*Leptospermum flavescens*), Lantana and regenerating *Eucalyptus* species.

At least 15% of the total numbers of trees in the upper strata of Community 1d (Tall open sclerophyll forest) are Forest red gum (*E. tereticornis*), a species listed under Schedule 2 of SEPP 44. This community covers a total area of approximately 2.58 hectares. Forest red gums are scattered throughout this community, and constitute at least 15% of the total number of trees in the upper strata. Around the edges of this community the lower strata is sparse, comprised of species including Camphor laurel, Sweet pittosporum, Umbrella cheese tree, Blunt-leaf bitter-pea, Geebung, various *Acacia* species, Tree heath, Red ash, Lantana and regenerating *Eucalyptus* species.

Tallowwoods, Swamp mahogany and Forest red gums over the remainder of the site are estimated to constitute less than 15% of the total number of trees in the upper and lower strata.

The NPWS online database was consulted for recent sightings and historical records of Koalas in the locality. The NPWS database (June 2010) contained ninety-eight (98) records of this species within 10 kilometres of the site.

The NPWS online database (June 2010) contained five hundred and seventy-four (574) sightings of this species in the Tweed LGA, the nearest of which was within 1km of the Subject site.

Warren (1994) completed a detailed assessment of Koala habitat usage on the subject site. Approximately 483 trees in the Scribbly gum/ Swamp mahogany community and the Blackbutt community were assessed for Koala activity. Most of the trees inspected were restricted to Grey gum, Tallowwood and Forest red gum as these are known to be

preferentially browsed by Koalas in the region. The analysis was based on scratch density on trees as well as the occurrence of faecal pellets around the base of the tree. Each tree was allocated a rating of 0-5 depending on the density of pellets or scratch marks. 0 indicated absence of Koala activity whilst 5 indicated a level of high activity. Only a very small number of trees showed any indication of activity and none of the trees showed an activity level greater than 2. In some cases it was difficult to ascribe the scratches to Koalas as there were no faecal pellets and it is known that Common Brushtail Possums and Lace monitors occur on the site.

More recently (December 2007), areas of the site containing preferred Koala food trees (i.e. Swamp mahogany, Forest red gum, Tallowwood, Grey gum, Scribbly gum) were searched for evidence of Koala activity (i.e. scats, scratches). Two (2) scientists spent approximately twelve (12) hours on this component of the assessment. A nocturnal survey was also completed including spotlighting and call playback techniques. Approximately eight (8) hours was spent on this component of the assessment. No conclusive evidence of Koala activity (scats) was recorded on the site. Whilst a number of trees contained scratch marks, this is not considered a conclusive method of identifying Koala activity when not accompanied by scats, as they may be attributed to other more common arboreal species. One (1) male Koala was heard calling approximately 200-300m north of the south-western corner of the subject site.

No records of a resident population, evidenced by attributes such as breeding females, exist for the Subject site. It is considered that Koalas may occasionally disperse across the site whilst moving through the locality. It is considered that the site does not support core Koala habitat.

Whilst a number of areas of the site contain Primary Koala food trees as discussed above, these comprise less than 1% of the total number of trees on the subject site. No further assessment under SEPP 44 is therefore required.

4.2.5.3 Impacts on Koala Habitat

As discussed within Section 4.2.5.2 above, JWA consider that vegetation communities 1a, 1d, 6 and 7 provide suitable habitat for the Koala due to the presence of preferred food tree species (**FIGURE 20**). Surveys for the Koala on the subject site have revealed that a resident population is not present. However, it is considered that this species may occasionally utilise habitat on the subject site as it disperses through the area. The potential impacts on Koala habitat from the proposed development are shown in **FIGURE 21.**

Suitable Koala habitat to be removed from the subject site occurs within existing 2(c) zoned land (i.e. Urban Expansion), land proposed to be rezoned as 2(c), or land that may otherwise be cleared in accordance with existing use rights. A summary of the potential loss of suitable Koala habitats is shown in **TABLE 5**.

N

LEGEND

Koala (*Phascolarctos cinereus*) Habitat

Site Outline

SOURCE:
Habitat - 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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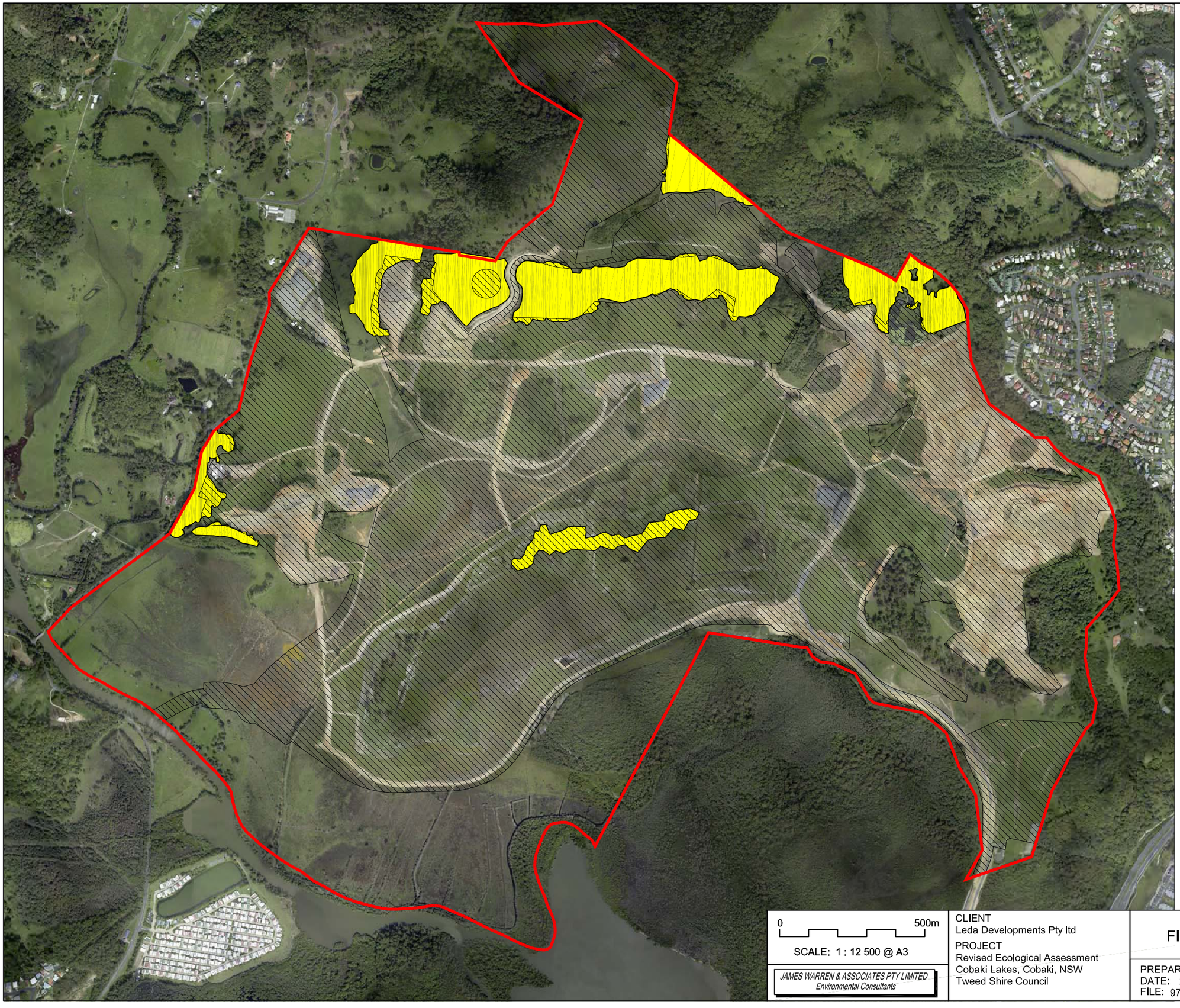
FIGURE 20

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

TITLE

IDENTIFIED KOALA HABITAT (JWA 2008)



N

LEGEND

- Koala (*Phascolarctos cinereus*) Habitat
- Proposed Development Areas
- Site Outline

SOURCE:
Habitat - James Warren & Associates Pty Ltd
Impact Area - SMEC
Aerial - Michel Group Services (Ref: 6400-197.dwg)
- photo taken March 2010

0 500m

SCALE: 1 : 12 500 @ A3

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FIGURE 21

PREPARED: BW
DATE: 22 October 2012
FILE: 97038_EA_Base.dwg

TITLE
IMPACT ON IDENTIFIED KOALA HABITAT (JWA 2008)

TABLE 5
POTENTIAL LOSS OF KOALA HABITAT
RESULTING FROM THE PROPOSED DEVELOPMENT

Community	TOTAL AREA (ha)	Area to be Removed (ha)	Area to be Removed (%)
1a	31.84	3.72	11.68%
1d	2.58	0.75	29.07%
6	3.80	3.80	100%
7	4.19	3.60	85.92%
TOTAL	**42.63ha**	**11.87ha**	**27.84%**

In total 11.87 hectares of suitable Koala habitat (27.84% of the total available habitat) may potentially be lost from the subject site. All potential Koala habitat to be removed occurs within portions of the site with existing development approval.

The most recent Koala survey (December 2007) failed to record recent Koala activity on the subject site. The Swamp mahogany and Scribbly gum communities (communities 6 & 7) on the subject site occur as isolated stands of trees, which are likely to be relatively inaccessible to Koalas residing in the locality.

4.2.5.4 Proposed Amelioration Measures

The majority of potential Koala habitat on the subject site will be retained. A total of 30.76 hectares of suitable Koala habitat (72.2% of available habitat) is proposed to be retained. This bushland will be retained within Environmental Protection Areas as well as Open Space areas throughout the development envelope.

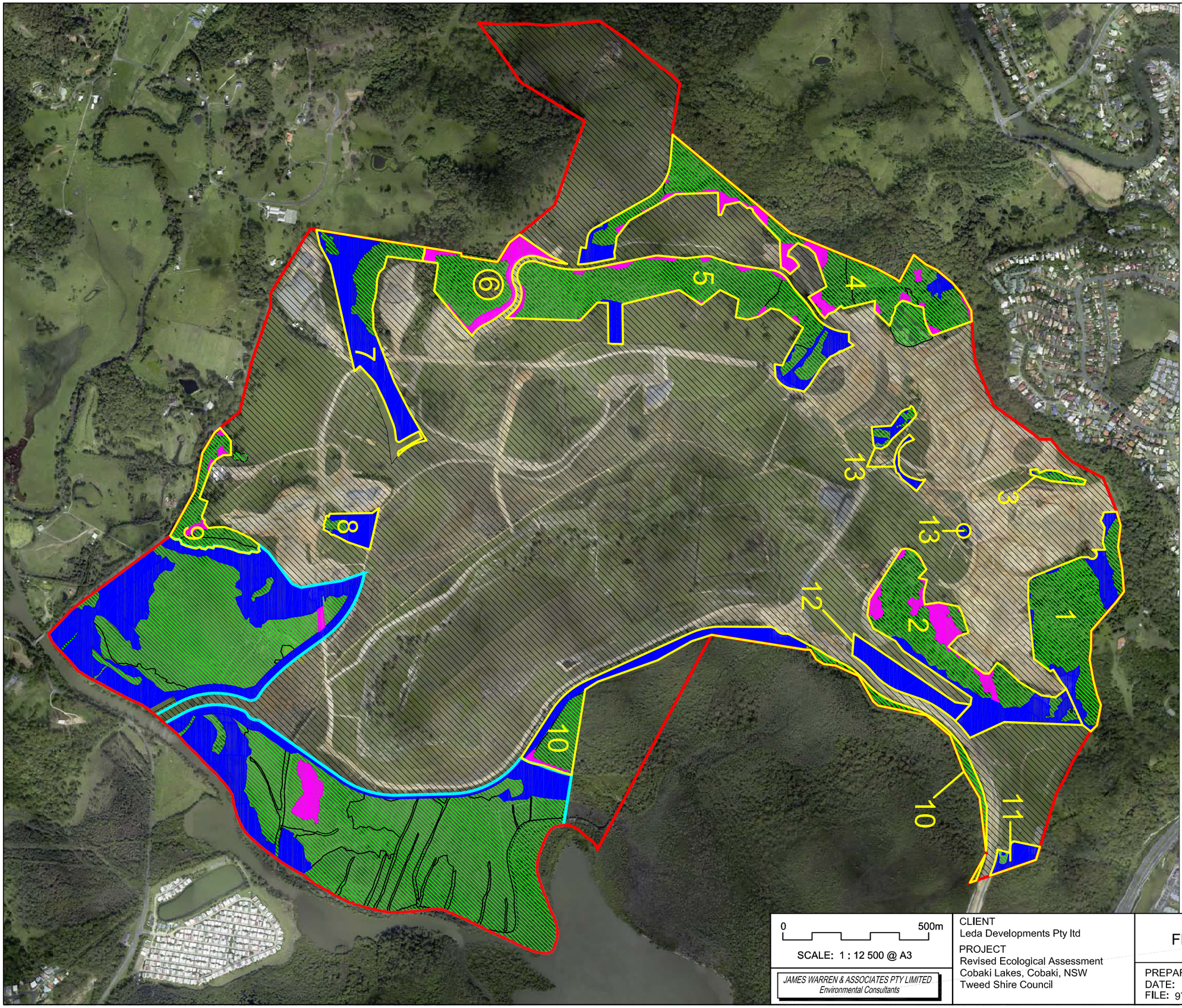
Additionally, 61.31ha of revegetation/regeneration works on the subject site (**FIGURE 22**) will increase the area of available habitat in the long-term and provide vegetated linkages through the landscape.

4.2.6 Threatened species and their habitats

4.2.6.1 Introduction

Several species of flora and fauna listed as threatened species under the *Threatened Species Conservation Act* (1995), as well as several Endangered Ecological Communities, occur on the Cobaki lakes site or are considered possible or likely occurrences. Loss of habitat for Threatened species and losses of EEC's have been calculated as the possible maximum loss based on the concept plan. However, there may be opportunities to retain Threatened species and/or their habitat, and EEC's within the proposed development footprint and this will be the subject of a detailed assessment at the Development Application stage.

Seven (7) part tests have also been completed for all Threatened flora and fauna species as well as Endangered Ecological Communities in accordance with the *Threatened Species Conservation Amendment Act 2002*. These 7-part tests are provided in a separate Assessment of Significance report (JWA 2012c).



SOURCE:
Regen/Reveg - James Warren & Associates Pty Ltd
Impact Area - SMEC
Aerial - Michel Group Services (Ref: 6400-197.dwg)
- photo taken March 2010

0 500m

SCALE: 1 : 12 500 @ A3

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FIGURE 22

PREPARED: BW
DATE: 22 October 2012
FILE: 97038_EA_Base.dwg

TITLE
REGENERATION & REVEGETATION AREAS

4.2.6.2 Threatened flora

Eight (8) listed flora species have been recorded on the subject site**.** Threatened flora recorded include the following species:

- White yiel yiel (*Grevillea hilliana*) Endangered (TSC Act 1995);
- Scented acronychia (*Acronychia littoralis*) - Endangered (TSC Act 1995 & EPBC Act 1999);
- Fine-leaved tuckeroo (*Lepiderema pulchella*) - Vulnerable (TSC Act 1995);
- Spiny gardenia (*Randia moorei)* - Endangered (TSC Act 1995 & EPBC Act 1999);
- Marblewood (*Acacia bakeri*) - Vulnerable (TSC Act 1995);
- Brush cassia (*Cassia brewsteri* var. *marksiana*) - Endangered (TSC Act 1995);
- Coolamon (*Syzygium moorei*) - Vulnerable (TSC Act 1995, EPBCA 1999); and
- Green-leaved rose walnut (*Endiandra muelleri* subsp. *bracteata)* Endangered (TSC Act 1995).

The locations of these species are shown in **FIGURES 23, 23a, 23b & 23c.**

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

- White lace flower (*Archidendron hendersonii*) – Vulnerable (TSC Act 1995);
- Stinking cryptocarya (*Cryptocarya foetida*) – Vulnerable (TSC Act 1995 & EPBC Act 1999);
- Pink nodding orchid (*Geodorum densiflorum*) - Endangered (TSC Act 1995);
- Rough-shelled bush-nut (*Macadamia tetraphylla*) – Vulnerable (TSC Act 1995 & EPBC Act 1999); and
- Swamp orchid (*Phaius australis*) – Endangered (TSC Act 1995 & EPBC Act 1999).

The known locations of Threatened flora species adjacent to the subject site are shown in **FIGURE 24.**

Suitable habitat for Threatened flora to be removed from the subject site occurs within existing 2(c) zoned land (i.e. Urban Expansion), land proposed to be rezoned as 2(c), or land that may otherwise be cleared in accordance with existing use rights.

A summary of impacts on the habitat for each species recorded on and adjacent to the subject site is provided in **TABLE 6.**

N

LEGEND

- Marblewood (*Acacia bakeri*)
- Fine-leaved tuckeroo (*Lepiderema pulchella*)
- Spiny gardenia (*Randia moorei*)
- Yiel yiel (*Grevillea hilliana*)
- Coolamon (*Syzygium moorei*)
- Brush cassia (*Cassia brewsteri* var. *marksiana*)
- Scented acronychia (*Acronychia littoralis*)
- Green-leaved rose walnut (*Endiandra muelleri* subsp. *bracteata*)
- Site Outline

SOURCE:
Flora - James Warren & Associates Pty Ltd
June/July 2004, July 2006, July/Sept 2007 & Feb 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 23

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

TITLE
LOCATION OF THREATENED FLORA

LEGEND

- Marblewood (*Acacia bakeri*)
- Fine-leaved tuckeroo (*Lepiderema pulchella*)
- Spiny gardenia (*Randia moorei*)
- Yiel yiel (*Grevillea hilliana*)
- Coolamon (*Syzygium moorei*)
- Brush cassia (*Cassia brewsteri* var. *marksiana*)
- Scented acronychia (*Acronychia littoralis*)
- Green-leaved rose walnut (*Endiandra muelleri* subsp. *bracteata*)
- Site Outline

SOURCE:
Flora - James Warren & Associates Pty Ltd
June/July 2004, July 2006, July/Sept 2007 & Feb 2008
Aerial - Michel Group Services (Ref: 6400-197.dwg)
- photo taken March 2010

0 0 50m 100m 500m
SCALE: 1 : 4000 @ A3

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FIGURE 23A

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

TITLE
LOCATION OF THREATENED FLORA

N

LEGEND

- Marblewood (*Acacia bakeri*)
- Fine-leaved tuckeroo (*Lepiderema pulchella*)
- Spiny gardenia (*Randia moorei*)
- Yiel yiel (*Grevillea hilliana*)
- Coolamon (*Syzygium moorei*)
- Brush cassia (*Cassia brewsteri* var. *marksiana*)
- Scented acronychia (*Acronychia littoralis*)
- Green-leaved rose walnut (*Endiandra muelleri* subsp. *bracteata*)
- Site Outline

SOURCE:
Flora - James Warren & Associates Pty Ltd
June/July 2004, July 2006, July/Sept 2007 & Feb 2008
Aerial - Michel Group Services (Ref: 6400-197.dwg)
- photo taken March 2010

0 0 50m 100m 500m

SCALE: 1 : 4000 @ A3

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FIGURE 23B

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

TITLE
LOCATION OF THREATENED FLORA

N

LEGEND

- Marblewood (*Acacia bakeri*)
- Fine-leaved tuckeroo (*Lepiderema pulchella*)
- Spiny gardenia (*Randia moorei*)
- Yiel yiel (*Grevillea hilliana*)
- Coolamon (*Syzygium moorei*)
- Brush cassia (*Cassia brewsteri* var. *marksiana*)
- Scented acronychia (*Acronychia littoralis*)
- Green-leaved rose walnut (*Endiandra muelleri* subsp. *bracteata*)
- Site Outline

SOURCE:
Flora - James Warren & Associates Pty Ltd
June/July 2004, July 2006, July/Sept 2007 & Feb 2008
Aerial - Michel Group Services (Ref: 6400-197.dwg)
- photo taken March 2010

0 0 50m 100m 500m

SCALE: 1 : 4000 @ A3

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FIGURE 23C

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

TITLE
LOCATION OF THREATENED FLORA

N

TUGUN

BILINGA

COBAKI
BROADWATER

Legend

- *Archidendron hendersonii*
- *Cryptocarya foetida*
- *Lepiderema pulchella*
- *Macadamia tetraphylla*
- *Syzygium moorei*
- Subject Site

0 500m

1 : 20 000

SOURCE: Tugun Bypass Species Impact Statement (Dec 2004) Figure 4.5

SCALE: 1 : 20 000 @ A3

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FIGURE 24

PREPARED: BW
DATE: 30 June 2010
FILE: 97038_EA_Bypass Flora.cdr

TITLE
LOCATION OF THREATENED FLORA ADJACENT TO SUBJECT SITE

TABLE 6
POTENTIAL LOSS OF THREATENED FLORA HABITAT
FROM THE PROPOSED DEVELOPMENT

Species	Existing habitat (ha)	Area to be Removed (ha)	Area to be Removed (%)
White yiel yiel	10.99	0.11	1.0%
Scented acronychia	10.99	0.11	1.0%
Fine-leaved tuckeroo	10.99	0.11	1.0%
Spiny gardenia	10.99	0.11	1.0%
Marblewood	10.99	0.11	1.0%
Brush cassia	10.99	0.11	1.0%
Coolamon	10.99	0.11	1.0%
Green-leaved rose-walnut	10.99	0.11	1.0%
White lace flower	10.99	0.11	1.0%
Stinking cryptocarya	10.99	0.11	1.0%
Pink nodding orchid	3.80	3.80	100%
Rough-shelled bush-nut	10.99	0.11	1.0%
Swamp orchid	3.80	3.80	100%

4.2.6.3 Impacts on Threatened Flora

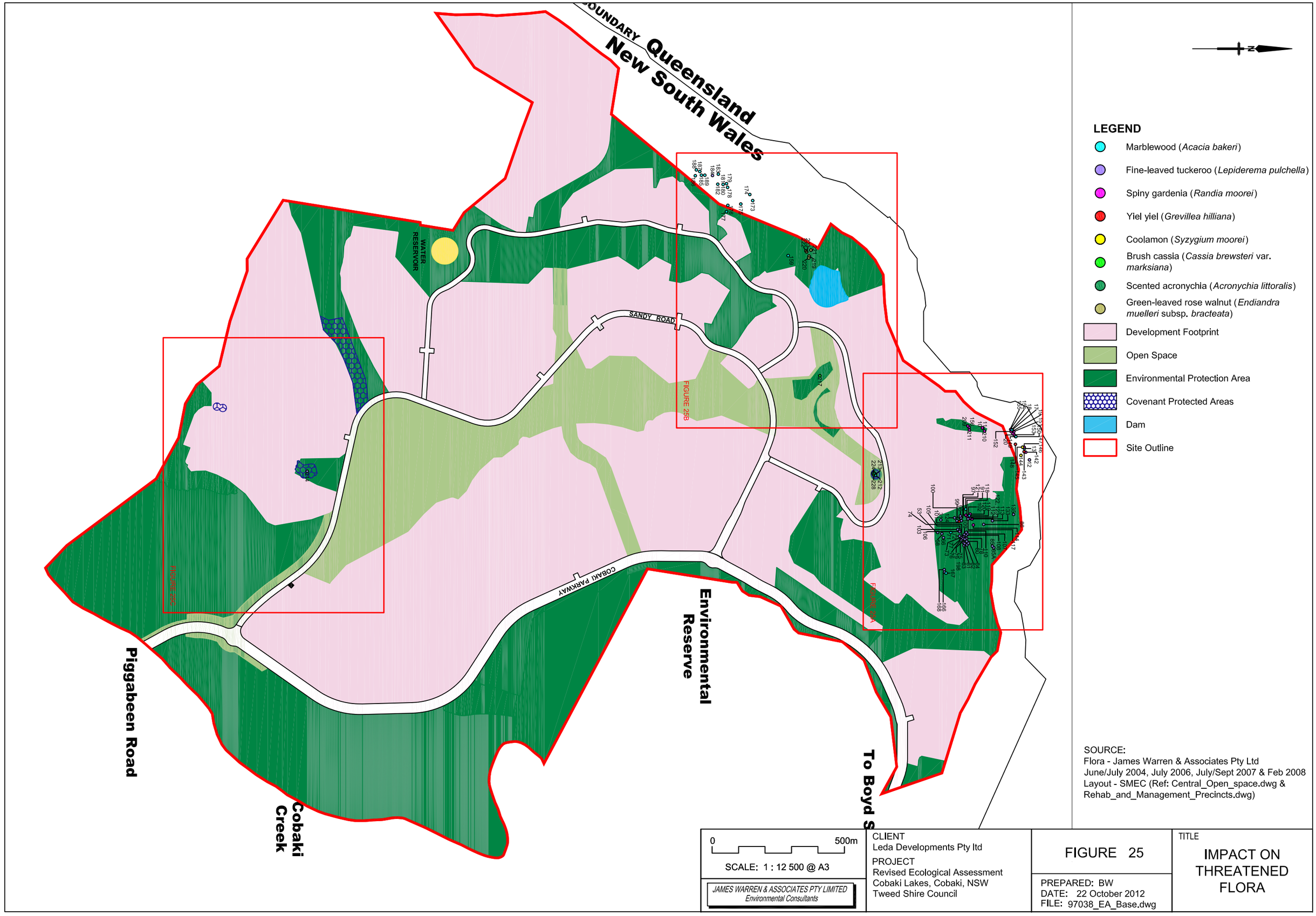
A plan showing the locations of Threatened flora on the subject site in relation to the proposed development is shown in **FIGURES 25, 25a, 25b & 25c** and a summary of impacts for each species is provided below:

White yiel yiel

The NPWS database (June 2010) contains twenty-four (24) records of this species within 10 km of the Subject site. Twenty-eight (28) records occur within the Tweed LGA. One (1) stem of White yiel yiel have been recorded on the subject site (**FIGURES 23 & 23a**) within the rainforest communities associated with Mt. Woodgee in the northern portion of the subject site. Two (2) additional stems of this species have been recorded within the border reserve to the north of the subject site. This species has also been recorded in adjacent habitat to the east of the subject site (EcoPro 2004) (**FIGURE 24**).

The single stem of White yiel yiel occurs outside of the proposed development footprint and will not be affected by the proposed development (**FIGURE 25a**).

The proposed development will result in the removal or modification of a total of 0.11 hectares (1.0%) of rainforest communities that are considered to represent potential habitat for this species, all of which will occur from areas of the site with existing development approvals.


Queensland
New South Wales
WATER RESERVOIR
SANDY ROAD
COBAKI PARKWAY
FIGURE 25B
FUTURE DRA
FUTURE DRA
Piggabeen Road
Cobaki Creek
Environmental Reserve
To Boyd S
N
LEGEND
Marblewood (Acacia bakeri)
Fine-leaved tuckeroo (Lepiderema pulchella)
Spiny gardenia (Randia moorei)
Yiel yiel (Grevillea hilliana)
Coolamon (Syzygium moorei)
Brush cassia (Cassia brewsteri var. marksiana)
Scented acronychia (Acronychia littoralis)
Green-leaved rose walnut (Endiandra muelleri subsp. bracteata)
Development Footprint
Open Space
Environmental Protection Area
Covenant Protected Areas
Dam
Site Outline
SOURCE:
Flora - James Warren & Associates Pty Ltd
June/July 2004, July 2006, July/Sept 2007 & Feb 2008
Layout - SMEC (Ref: Central_Open_space.dwg & Rehab_and_Management_Precincts.dwg)
0
500m
SCALE: 1 : 12 500 @ A3
JAMES WARREN & ASSOCIATES PTY LIMITED
Environmental Consultants
CLIENT
Leda Developments Pty ltd
PROJECT
Revised Ecological Assessment
Cobaki Lakes, Cobaki, NSW
Tweed Shire Council
FIGURE 25
PREPARED: BW
DATE: 22 October 2012
FILE: 97038_EA_Base.dwg
TITLE
IMPACT ON THREATENED FLORA