

*JAMES WARREN & Associates Pty Ltd*

*ENVIRONMENTAL CONSULTANTS*



# VEGETATION MANAGEMENT PLAN

COBAKI LAKES

PREFERRED PROJECT REPORT

OCTOBER 2009

A REPORT TO LEDA MANORSTEAD PTY LTD

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## 1 INTRODUCTION

### 1.1 Background

James Warren and Associates (JWA) have been engaged by LEDA Manorstead Pty Ltd to prepare a Vegetation Management Plan (VMP) to accompany the Preferred Project Report for the proposed residential development at Cobaki Lakes.

JWA prepared a VMP for the Cobaki Lakes site in October 2008 in response to the Director General's Environmental Assessment Requirements (DGEAR's) issued 21<sup>st</sup> August 2007. The VMP 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 VMP has been revised to reflect changes to the Concept Plan and provide additional information where required.

### 1.2 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 Piggabeen Road, Tweed Heads. The site covers an area of approximately 593 hectares. The location of the subject site is shown in **FIGURE 1**.

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. There are no mapped State Environmental Planning Policy (SEPP) areas occurring on the site. A large area of SEPP 14 Wetland (No. 1) is located immediately west of and adjacent to Cobaki Broadwater and Cobaki Creek, in the Lower Tweed Estuary (TSC 2003).

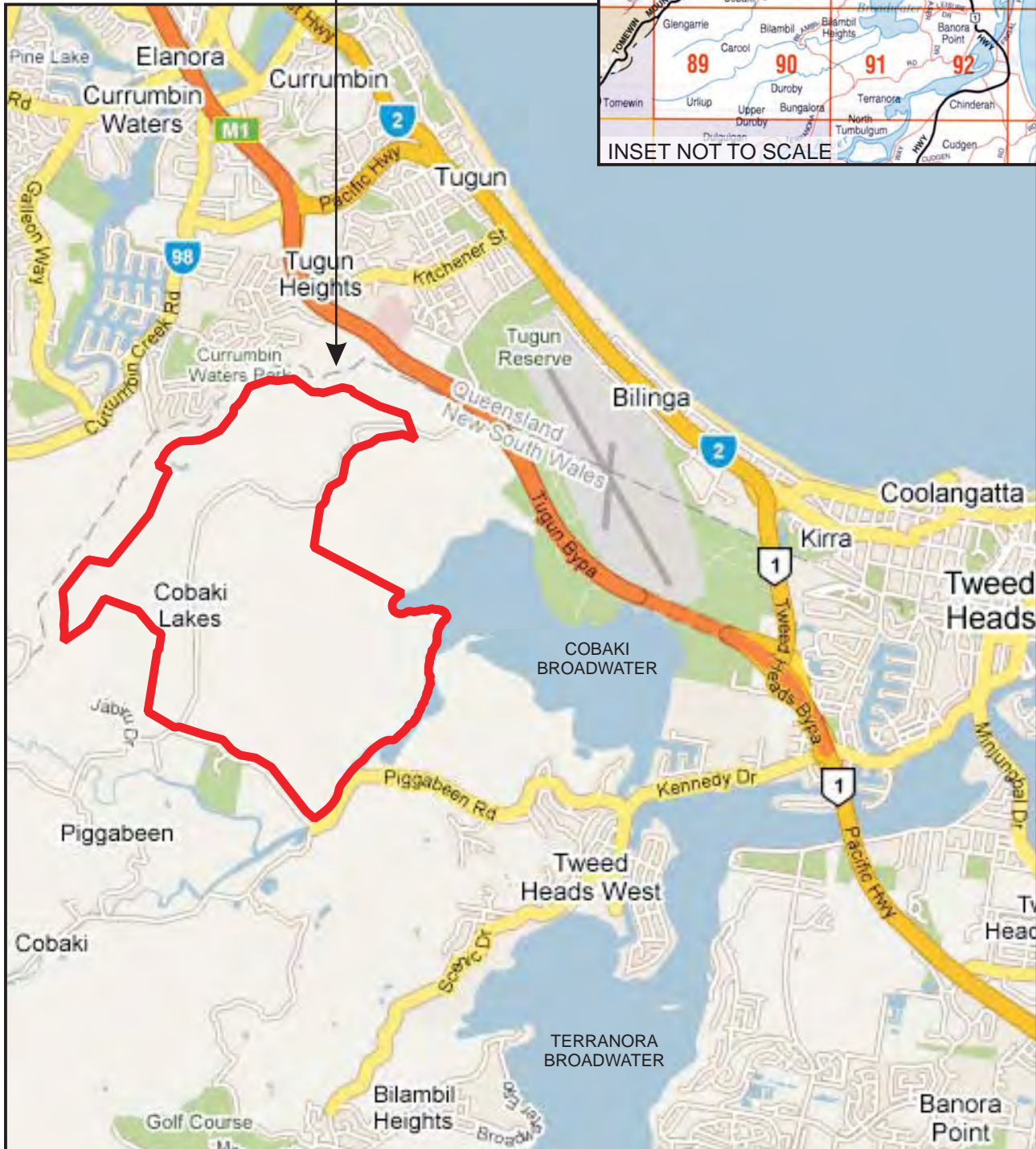
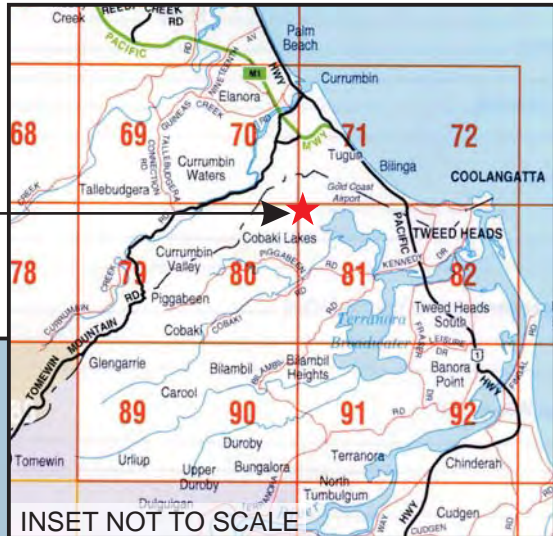
**FIGURE 2** shows a recent aerial photograph of the site. It is worth noting that vegetation clearing and earthworks have occurred in various locations of the subject site (in accordance with relevant approvals) subsequent to this aerial photograph. However, the vegetation assessment has utilised a combination of aerial interpretation and on-site surveys and reflects the current distribution and extent of vegetation communities.

Currently three (3) broad vegetation associations comprising twenty-four (24) vegetation communities occur on the site. Vegetation mapping over the subject site is shown in **FIGURE 3**.

It is worth noting that vegetation to be removed from the subject site occurs within existing 2(c) zoned land (i.e. Urban Expansion), land proposed to be rezoned



**SUBJECT SITE**



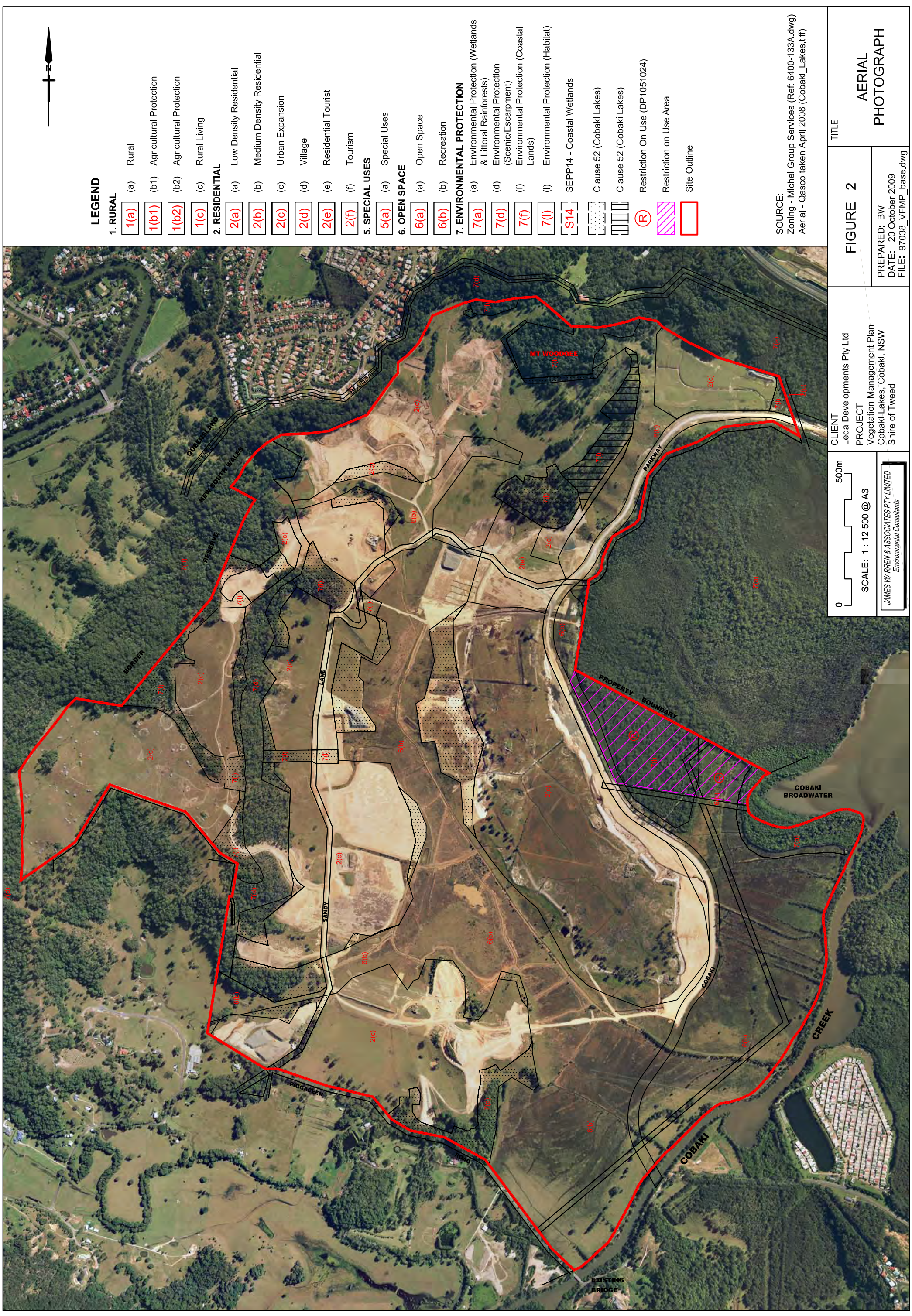
SOURCE: Google Maps  
 SCALE: 1 : 50 000 @ A4  
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CLIENT  
 Leda Developments Pty Ltd  
 PROJECT  
 Vegetation Management Plan  
 Cobaki Lakes, Cobaki, NSW  
 Shire of Tweed

**FIGURE 1**  
 PREPARED: BW  
 DATE: 20 October 2009  
 FILE: 97038\_VMP\_Locality.cdr

TITLE  
**LOCALITY PLAN**





**LEGEND**

**1. RURAL**

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

**2. RESIDENTIAL**

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

**5. SPECIAL USES**

- 5(a) Special Uses

**6. OPEN SPACE**

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

**7. ENVIRONMENTAL PROTECTION**

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

**S14**

- SEPP14 - Coastal Wetlands
- Clause 52 (Cobaki Lakes)
- Clause 52 (Cobaki Lakes)
- Restriction On Use (DP1051024)
- Restriction on Use Area
- Site Outline

SOURCE:  
Zoning - Michel Group Services (Ref: 6400-133A.dwg)  
Aerial - Gasco taken April 2008 (Cobaki\_Lakes.tiff)

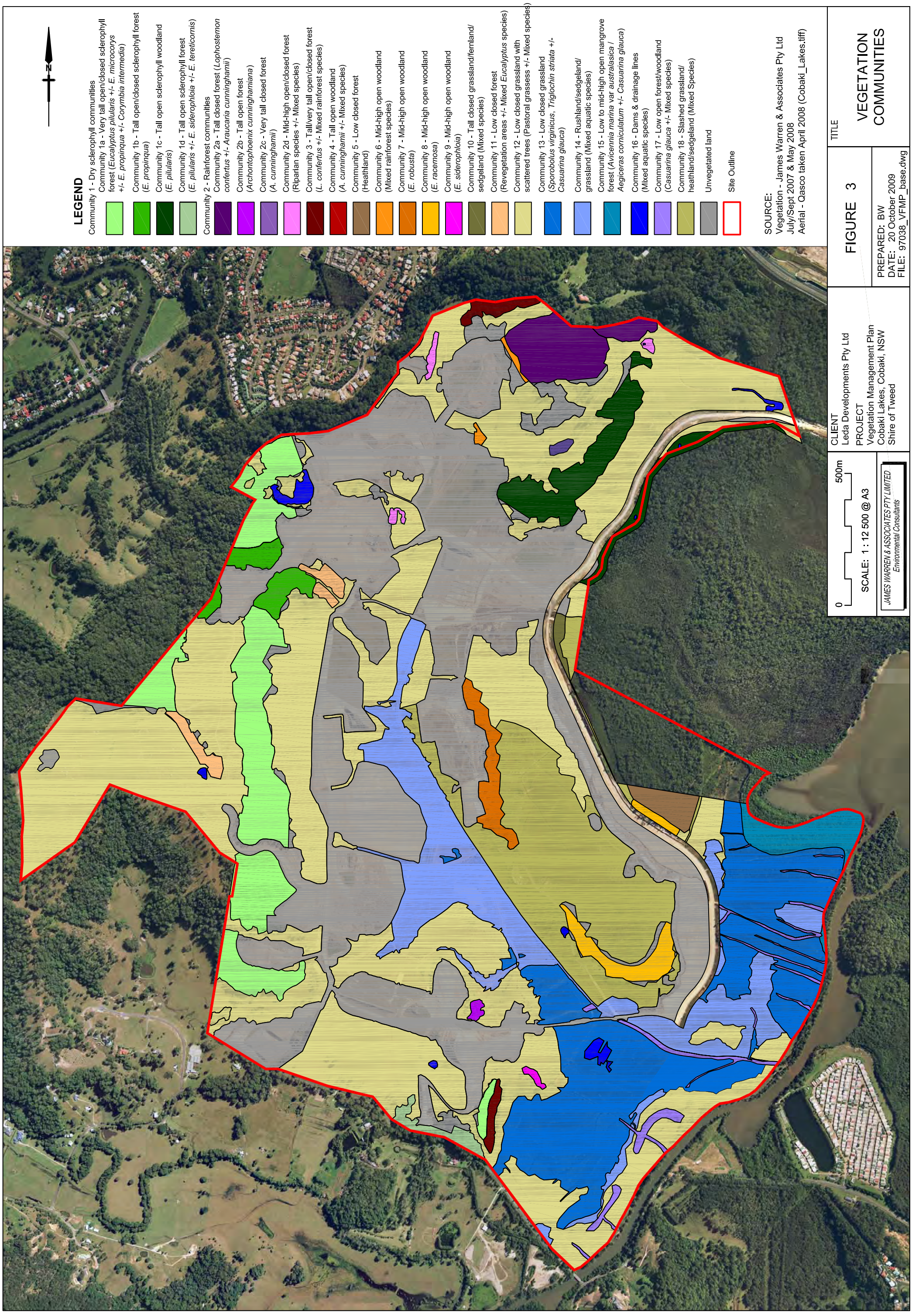
**FIGURE 2**  
**AERIAL PHOTOGRAPH**

CLIENT  
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PROJECT  
Vegetation Management Plan  
Cobaki Lakes, Cobaki, NSW  
Shire of Tweed

SCALE: 1 : 12 500 @ A3  
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Environmental Consultants

0 500m





**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 - Tall open woodland (*A. cunninghamii* +/- Mixed species)
- Community 5 - Low closed forest (Heathland)
- Community 6 - Mid-high open woodland (Mixed rainforest species)
- Community 7 - Mid-high open woodland (*E. robusta*)
- Community 8 - Mid-high open woodland (*E. racemosa*)
- Community 9 - Mid-high open woodland (*E. siderophloia*)
- Community 10 - Tall closed grassland/fernland/sedgeland (Mixed species)
- Community 11 - Low closed forest (Revegetation areas +/- Mixed *Eucalyptus* species)
- Community 12 - Low closed grassland with scattered trees (Pastoral grasses +/- Mixed species)
- Community 13 - Low closed grassland (*Sporobolus virginicus*, *Triglochin striata* +/- *Casuarina glauca*)
- Community 14 - Rushland/sedgeland/grassland (Mixed aquatic species)
- Community 15 - Low to mid-high open mangrove forest (*Avicennia marina* var *australasica* / *Aegiceras corniculatum* +/- *Casuarina glauca*)
- Community 16 - Dams & drainage lines (Mixed aquatic species)
- Community 17 - Low open forest/woodland (*Casuarina glauca* +/- Mixed species)
- Community 18 - Slashed grassland/heathland/sedgeland (Mixed Species)
- Unvegetated land
- Site Outline

SOURCE:  
Vegetation - James Warren & Associates Pty Ltd  
July/Sept 2007 & May 2008  
Aerial - Gasco taken April 2008 (Cobaki\_Lakes.tiff)

0 500m

SCALE: 1 : 12 500 @ A3

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Vegetation Management Plan  
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Shire of Tweed

FIGURE 3

PREPARED: BW  
DATE: 20 October 2009  
FILE: 97038\_VFMP\_base.dwg

TITLE

VEGETATION  
COMMUNITIES





as 2(c), or land that may otherwise be cleared in accordance with existing use rights. This VMP is intended to apply to these portions of the site only.

### 1.3 Management requirements

It is worth noting that the majority of the proposed development will occur within land previously cleared of vegetation (i.e. in accordance with relevant approvals and/or existing use rights). The concept plan has been prepared with respect to the location and extent of significant vegetation on the subject site. A number of plans have been prepared to direct the management of vegetation to be retained on the subject site, as follows:

- Saltmarsh Rehabilitation Plan (JWA 2009a);
- Scribbly gum Management Plan (JWA 2009b); and
- Site Regeneration and Revegetation Plan (JWA 2009c).

These management plans provide details for the protection and maintenance of native vegetation communities during the operational phase of the development.

### 1.4 Scope of this report

The aim of this VMP is to protect native vegetation communities to be retained on the subject site during the construction phase of the development. This VMP aims to ensure that:

- Retained vegetation within designated Conservation and Open Space areas are to be clearly marked and protected prior to commencement of operational works in each stage of the development; and
- Protection of the health and livelihood of Threatened flora species and Endangered Ecological Communities during clearing operations on the subject site.

This VMP has been prepared to direct the clearing of vegetation from within the development footprint.



## 2. SIGNIFICANT SPECIES REQUIRING PROTECTION

### 2.1 Threatened flora species

Eight (8) Threatened<sup>1</sup> flora species have been recorded in the most recent vegetation survey (JWA 2008). 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).

The locations of these Threatened flora species are shown in FIGURES 4, 4a & 4b.

### 2.2 Endangered Ecological Communities

Six (6) Endangered Ecological Communities (EECs)<sup>2</sup> are considered to occur on the site (JWA 2008) (FIGURE 5). These are as follows:

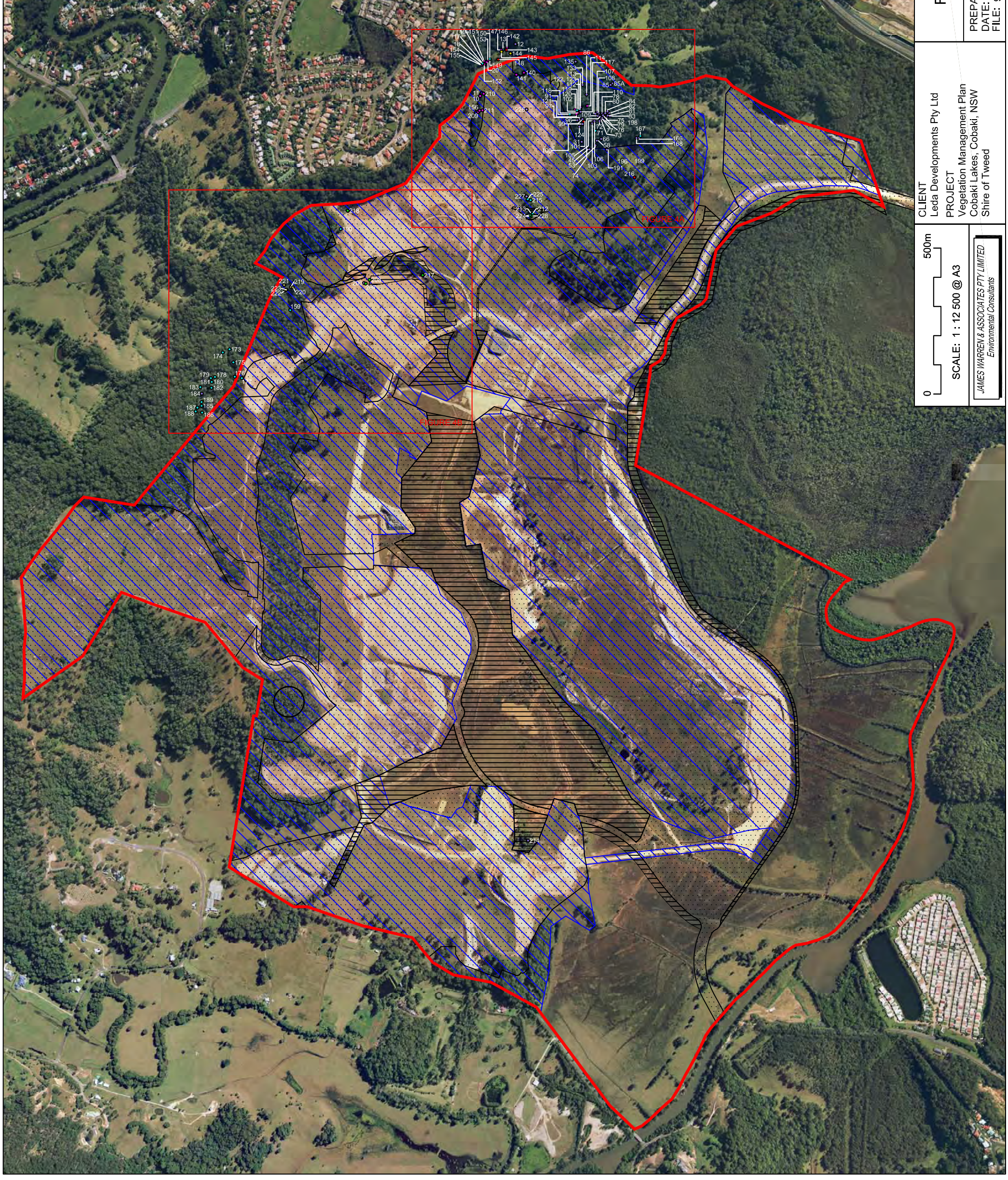
- Swamp sclerophyll forest on coastal floodplain - which occurs as an isolated clump of scattered Swamp mahogany in the central eastern of the Subject site;
- Lowland rainforest on floodplain - occurring at various locations generally in association with drainage lines and depressions;
- Lowland rainforest - 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.

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<sup>1</sup> As listed within schedules of the TSC Act (1995) and EPBC Act (1999).

<sup>2</sup> As listed within schedules of the TSC Act (1995).





**LEGEND**

- Marblewood (*Acacia bakeri*)
- Fine-leaved tuckeroo (*Lepiderema pulchella*)
- Spiny gardenia (*Randia moorei*)
- Y'iel yiel (*Grevillea hilliana*)
- Coolamon (*Syzygium moorei*)
- Brush cassia (*Cassia brewsteri* var. *marksiana*)
- Scented acronychia (*Acronychia littoralis*)
- Green-leaved rose walnut (*Endiandra muelleri* subsp. *bracteata*)
- Proposed Development Areas
- Proposed Open Space
- Areas with Existing Subdivision Consents & Earthworks Approvals
- Site Outline

SOURCE:  
 Flora - James Warren & Associates Pty Ltd  
 June/July 2004, July 2006, July/Sept 2007 & Feb 2008  
 Layout - Design Forum Pty Ltd  
 (Ref: 01.01 Concept Plan.dwg Issue U)  
 Aerial - Gasco taken April 2008 (Cobaki\_Lakes.tiff)

<b>FIGURE 4</b>	<b>TITLE</b> <b>IMPACT ON THREATENED FLORA</b>
CLIENT Leda Developments Pty Ltd PROJECT Vegetation Management Plan Cobaki Lakes, Cobaki, NSW Shire of Tweed	PREPARED: BW DATE: 20 October 2009 FILE: 97038_VFMP_base.dwg
0 <span style="margin-left: 100px;">500m</span> SCALE: 1 : 12 500 @ A3 JAMES WARREN & ASSOCIATES PTY LIMITED Environmental Consultants	





**LEGEND**

- Marblewood (*Acacia bakeri*)
- Fine-leaved tuckeroo (*Lepiderema pulchella*)
- Spiny gardenia (*Randia moorei*)
- Y'iel yiel (*Grevillea hilliana*)
- Coolamon (*Syzygium moorei*)
- Brush cassia (*Cassia brewsteri* var. *marksiana*)
- Scented acronychia (*Acronychia littoralis*)
- Green-leaved rose walnut (*Endiandra muelleri* subsp. *bracteata*)
- Proposed Development Areas
- Proposed Open Space
- Areas with Existing Subdivision Consents & Earthworks Approvals
- Site Outline

SOURCE:  
 Flora - James Warren & Associates Pty Ltd  
 June/July 2004, July 2006, July/Sept 2007 & Feb 2008  
 Layout - Design Forum Pty Ltd  
 (Ref: 01.01 Concept Plan.dwg Issue U)  
 Aerial - Qasco taken April 2008 (Cobaki\_Lakes.tiff)

TITLE

**IMPACT ON THREATENED FLORA**

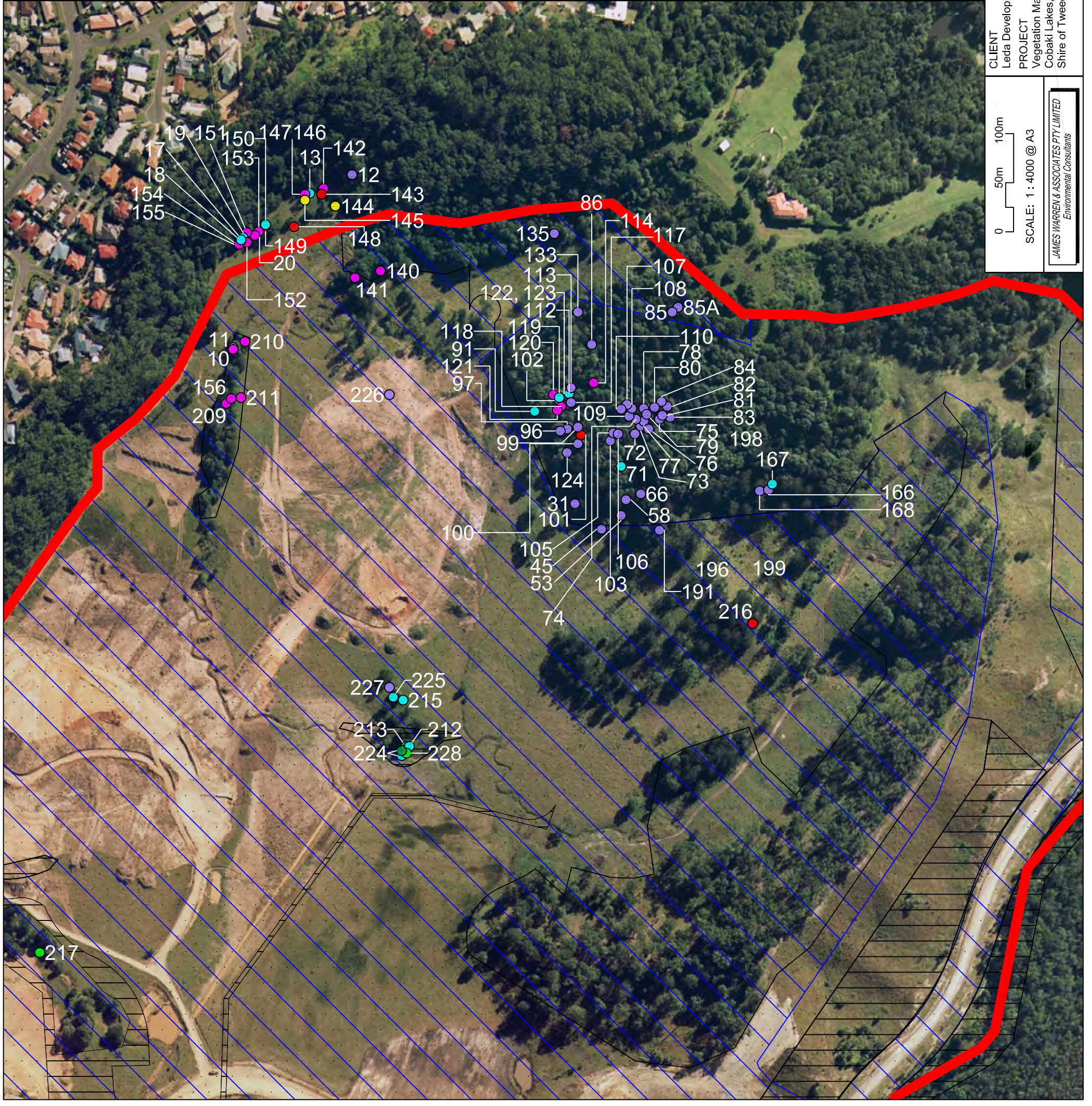
**FIGURE 4A**

PREPARED: BW  
 DATE: 20 October 2009  
 FILE: 97038\_VFMP\_base.dwg

CLIENT  
 Leda Developments Pty Ltd  
 PROJECT  
 Vegetation Management Plan  
 Cobaki Lakes, Cobaki, NSW  
 Shire of Tweed

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

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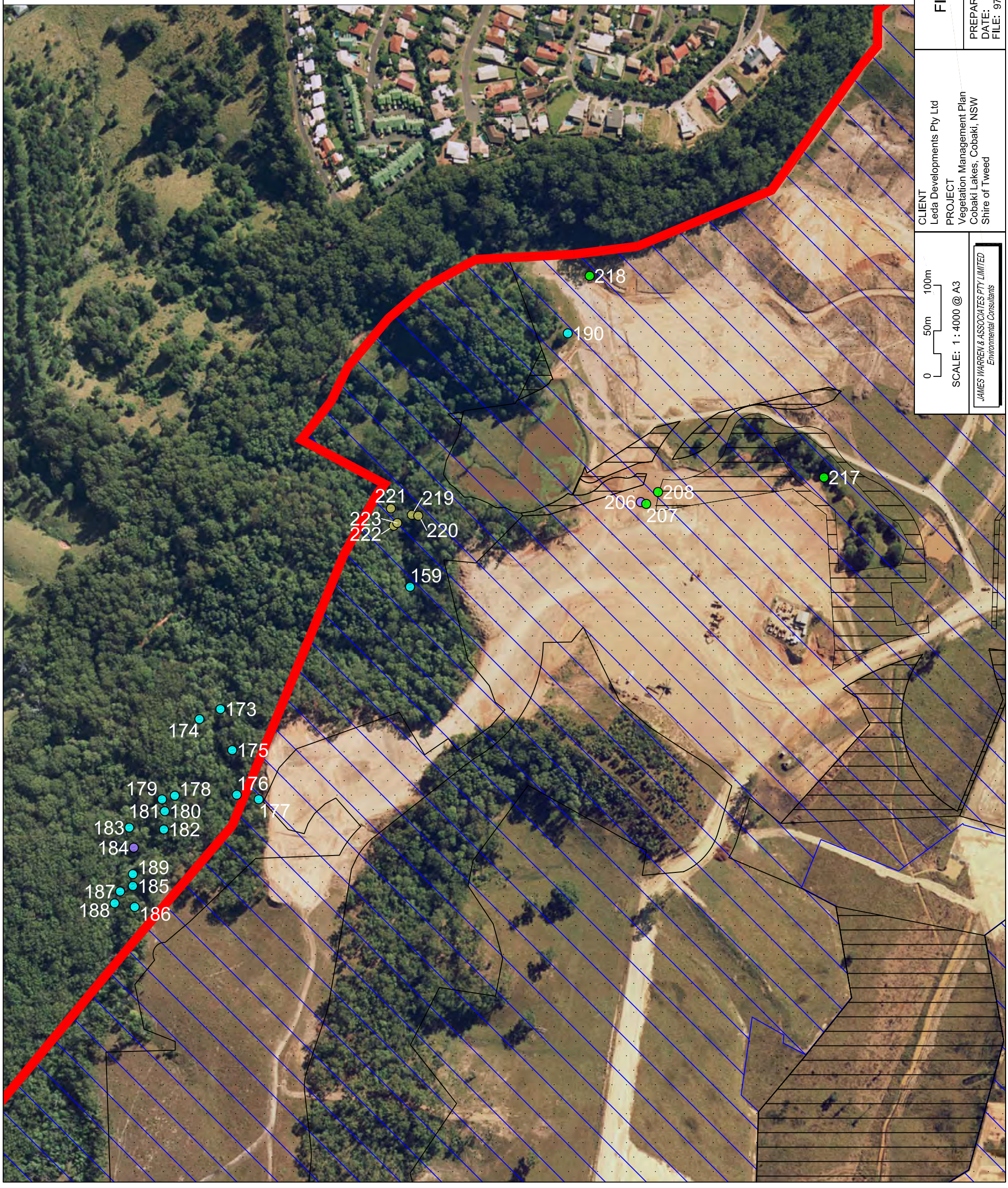




**LEGEND**

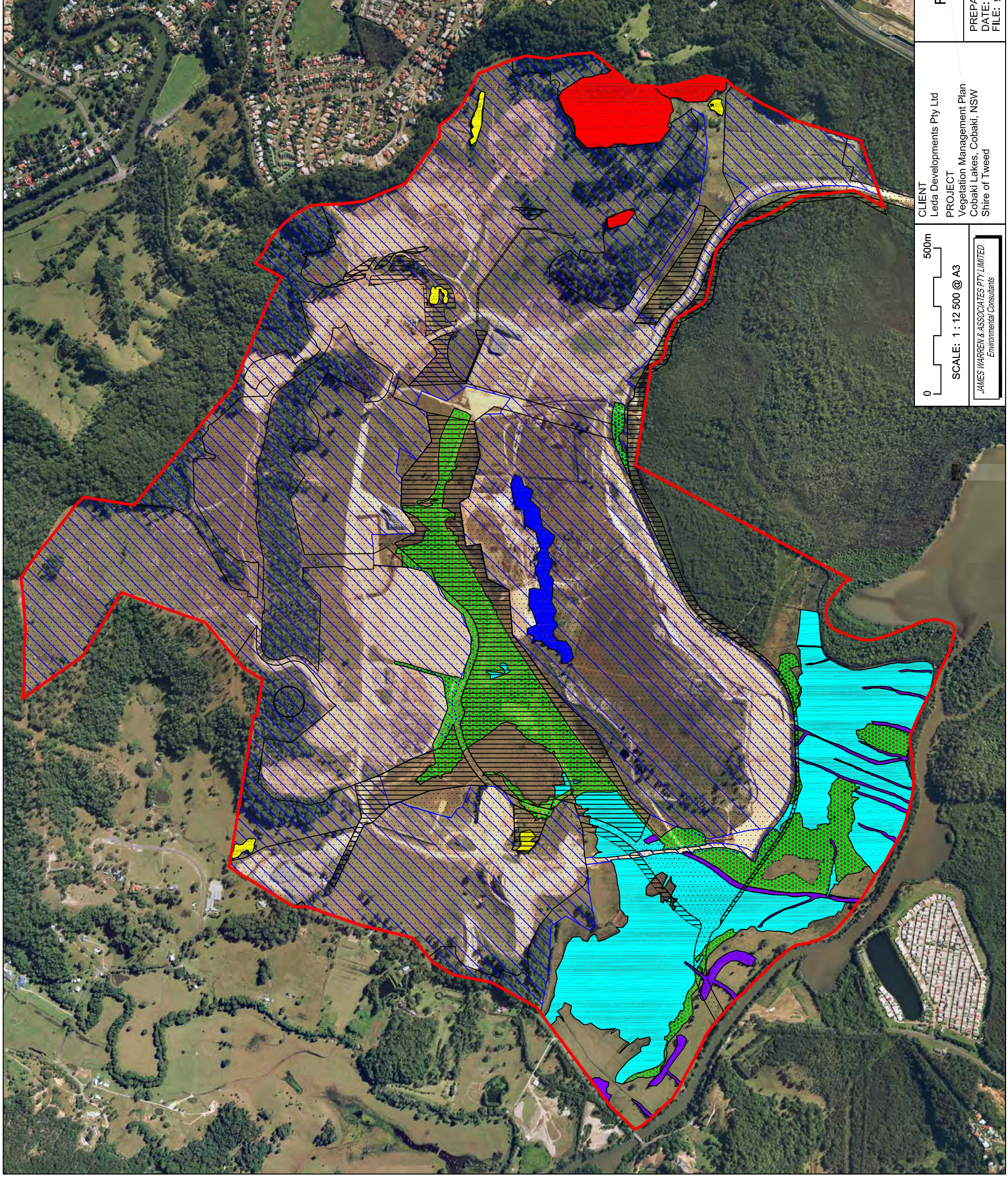
- Marblewood (*Acacia bakeri*)
- Fine-leaved tuckeroo (*Lepiderema pulchella*)
- Spiny gardenia (*Randia moorei*)
- Yiel yiel (*Grevillea hilliana*)
- Coolamon (*Syzygium moorei*)
- Brush cassia (*Cassia brewsteri* var. *marksiana*)
- Scented acronychia (*Acronychia littoralis*)
- Green-leaved rose walnut (*Endiandra muelleri* subsp. *bracteata*)
- Proposed Development Areas
- Proposed Open Space
- Areas with Existing Subdivision Consents & Earthworks Approvals
- Site Outline

SOURCE:  
 Flora - James Warren & Associates Pty Ltd  
 June/July 2004, July/Sept 2007 & Feb 2008  
 Layout - Design Forum Pty Ltd  
 (Ref: 01.01 Concept Plan.dwg Issue U)  
 Aerial - Gasco taken April 2008 (Cobaki\_Lakes.tiff)



<b>FIGURE 4B</b>	<b>TITLE</b> <b>IMPACT ON THREATENED FLORA</b>
CLIENT Leda Developments Pty Ltd PROJECT Vegetation Management Plan Cobaki Lakes, Cobaki, NSW Shire of Tweed	PREPARED: BW DATE: 20 October 2009 FILE: 97038_VFMP_base.dwg
SCALE: 1 : 4000 @ A3 JAMES WARREN & ASSOCIATES PTY LIMITED Environmental Consultants	0 50m 100m





**LEGEND**

- Lowland Rainforest
- Lowland Rainforest on Floodplain
- Swamp Sclerophyll Forest on Floodplain
- Swamp Oak Floodplain Forest
- Freshwater Wetland (Degraded)
- Saltmarsh
- Proposed Development Areas
- Proposed Open Space
- Areas with Existing Subdivision Consents & Earthworks Approvals
- Site Outline

SOURCE:  
 EEC's - James Warren & Associates Pty Ltd  
 Layout - Design Forum Pty Ltd  
 (Ref: 01.01 Concept Plan.dwg Issue U)  
 Aerial - Gasco taken April 2008 (Cobaki\_Lakes.tiff)

TITLE  
**IMPACT ON  
 ENDANGERED  
 ECOLOGICAL  
 COMMUNITIES**

**FIGURE 5**  
 PREPARED: BW  
 DATE: 20 October 2009  
 FILE: 97038\_VFMP\_base.dwg

CLIENT  
 Leda Developments Pty Ltd  
 PROJECT  
 Vegetation Management Plan  
 Cobaki Lakes, Cobaki, NSW  
 Shire of Tweed

0 500m  
 SCALE: 1 : 12 500 @ A3  
 JAMES WARREN & ASSOCIATES PTY LIMITED  
 Environmental Consultants





### **3. STATEMENT OF OBJECTIVES**

- 3.1 Tree clearing shall be carried out in accordance with a sequential selective clearing plan, other approved documents and Council conditions.
- 3.2 The works shall be staged in accordance with the staging plan for Cobaki Lakes. Changes to the sequence may vary in accordance with market forces.
- 3.3 Implementation of vegetation clearance, stockpiling, recycling or disposal practices that maximise the re-use of native vegetation and minimise the potential for spreading weed species shall be completed.
- 3.4 If individual trees or other specific vegetation that require protection are identified in land adjacent to a clearance zone, such protection shall be provided.
- 3.5 Prior to the mulching of cleared vegetation stockpiled on site, the stockpile shall be checked for weed species and, if practicable, the weed species shall be removed for disposal off site to minimise the risk of propagation.
- 3.6 Tree clearing operations shall be completed in a manner that provides maximum protection of the health and livelihood of native fauna (in accordance with the Fauna Management Plan - JWA 2009d).
- 3.7 Monitoring programs shall be implemented so as to ensure the performance objectives have been met over time.
- 3.8 Disposal of cleared vegetation shall be managed in an environmentally responsible manner.





## 4. VEGETATION MANAGEMENT STRATEGIES

- 4.1 The Works shall be conducted only between the hours of 7.00am and 6.00pm Monday to Saturday.
- 4.2 Prior to the commencement of any vegetation clearance, the Contractor shall identify all areas to be cleared on construction plans and in the field.
- 4.3 Prior to commencement of the Works, the applicant shall fence or clearly mark with tape, the limits of all protected vegetation. Within these zones the following activities shall not be permitted:
- Storage and mixing of materials;
  - Vehicle parking;
  - Liquid disposal;
  - Machinery repairs and/or refuelling;
  - Construction site office or shed;
  - Combustion of any material;
  - Stockpiling of soil, rubble or debris;
  - Any filling or excavation including trench line, topsoil skimming and/or surface excavation, unless otherwise approved by the Project Manager; and
  - Unauthorized pesticide, herbicide or chemical applications.
- 4.4 Trees deemed by an Ecologist to be potentially impacted upon, shall be protected by the application of carpet underlay and/or corrugated iron or some other similar material to encase the trunk of the tree.
- 4.5 Prior to commencement of The Works, the applicant shall arrange a pre-start meeting with Council Environmental Assessment Officers or other relevant Council Officer. The applicant shall tag all trees to be retained and shall install all approved protection measures.
- 4.6 No clearing shall occur outside nominated clearing zones.
- 4.7 Clearing shall occur in the sequence of cutting, shearing of felled vegetation and tub grinding.
- 4.8 Upon completion, grubbing operations shall ensure the site is left free draining with no ponding of stormwater.
- 4.9 Erosion and sediment control works shall be undertaken in accordance with the approved Stormwater Management Plan.
- 4.10 The erosion and sediment control measures shall not be dismantled until the disturbed areas have been covered by mulch to a minimum depth of 100mm.
- 4.11 Each zone shall be mulched immediately upon completion of clearing and grubbing works.





## 5. PROTECTION OF SIGNIFICANT VEGETATION

### 5.1 Threatened flora species

Several species of flora listed as threatened species under the *Threatened Species Conservation Act* (1995) occur on the Cobaki lakes site. Potential loss of Threatened flora species have been calculated within the Ecological Assessment (JWA 2008) as the possible maximum loss based on the concept plan. However, there may be opportunities to retain Threatened flora species within the proposed development footprint and this will be the subject of a detailed assessment at the Development Application stage. Seven (7) part tests will also be completed at the Development Application stage for all Threatened flora in accordance with the *Threatened Species Conservation Amendment Act 2002*.

The major amelioration strategy for Threatened flora species on the subject site is the retention and long-term protection of suitable habitat within Environmental Protection Areas. Furthermore, approximately 60.43 hectares of land will be rehabilitated in accordance with the Site Regeneration and Revegetation Plan (JWA 2009c) and will provide additional habitat for Threatened flora species occurring on and adjacent to the subject site.

It is also recommended that propagation of Threatened flora species be undertaken as part of the rehabilitation works on the subject site in an attempt to bolster local populations. The rationale and methodology of Threatened plant propagation will be detailed within individual regeneration and revegetation plans which are to be completed for each of the rehabilitation precincts (in accordance with the Site Regeneration and Revegetation Plan - JWA 2009c) at the Operational Works stage.

The following strategies are suggested to protect any retained Threatened flora species within the development footprint during clearing operations:

5.1.1 A 5m radius around all stems of Threatened flora (to be retained) shall be fenced off or clearly mark with tape. Within these zones the following activities shall not be permitted:

- Storage and mixing of materials;
- Vehicle parking;
- Liquid disposal;
- Machinery repairs and/or refuelling;
- Construction site office or shed;
- Combustion of any material;
- Stockpiling of soil, rubble or debris;
- Any filling or excavation including trench line, topsoil skimming and/or surface excavation, unless otherwise approved by the Project Manager; and
- Unauthorized pesticide, herbicide or chemical applications.

5.1.2 All activities in an area adjacent to any Threatened plant/s shall be carried out in such a manner as to minimise any damage to the plant/s.





5.1.3 As soon as possible after the completion of adjacent clearing works, amelioration measures discussed within the Site Regeneration and Revegetation Plan (JWA 2009c) should be undertaken.

## 5.2 Endangered Ecological Communities

Five (5) Endangered Ecological Communities (EECs) are considered to occur on the site, including:

- Swamp sclerophyll forest on coastal floodplain - which occurs as Swamp mahogany forest 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 - considered to occur in the central and south-eastern portions of the site;
- Coastal saltmarsh in the NSW North Coast bioregion - occurring in the south-east of the site.

Potential loss of EEC's has been calculated within the Ecological Assessment (JWA 2008) as the possible maximum loss based on the concept plan. However, there may be opportunities to retain 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 been completed for all EEC's in accordance with the *Threatened Species Conservation Amendment Act 2002* (JWA 2009e). No significant impacts have been identified.

Amelioration measures to reduce potential impacts on EECs are also discussed in the Ecological Assessment (JWA 2008) and the Assessment of Significance (JWA 2009e).

The following strategies are suggested to protect any retained EEC's within the development footprint during clearing operations:

5.2.1 Prior to commencement of the Works, the applicant shall fence or clearly mark with tape, the limits of all EEC's to be retained within the development footprint. Within these zones the following activities shall not be permitted:

- Storage and mixing of materials;
- Vehicle parking;
- Liquid disposal;
- Machinery repairs and/or refuelling;
- Construction site office or shed;
- Combustion of any material;
- Stockpiling of soil, rubble or debris;





## Vegetation Management Plan - Cobaki Lakes PPR

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- Any filling or excavation including trench line, topsoil skimming and/or surface excavation, unless otherwise approved by the Project Manager; and
- Unauthorized pesticide, herbicide or chemical applications.

5.2.2 All activities in an area adjacent to any EEC (to be retained) shall be carried out in such a manner as to minimise any damage to the EEC.





## **6. DISPOSAL OF DEBRIS**

- 6.1 Clearing and disposal of vegetation shall be in accordance with Council's policy.
- 6.2 Hollow logs shall not be mulched until inspected by a qualified Ecologist. As many hollow logs as possible shall be relocated to areas within the approved Conservation and Open Space Area(s) (within other Areas of the Estate) as habitat features.





## **7. WEED CONTROL, PEST SPECIES MANAGEMENT AND LANDSCAPING ISSUES**

- 7.1 All mulch produced on site (by mulching cleared vegetation and trees) shall specifically exclude weed material and be kept outside of covenant areas.
- 7.2 Soil disturbance nearby to protected vegetation shall be kept to a minimum to avoid weed proliferation.
- 7.3 Management of all weeds<sup>3</sup> will occur utilising suitable control measures outlined in **ANNEXURE 1** (i.e. chemical and/or physical control). LEDA Manorstead Pty Ltd shall control all weeds when on-maintenance.
- 7.4 Landscaping of areas shall be completed in accordance with an approved landscape plan for the area. Plant densities, species, schedules and timing will be specified on approved landscape plans. Details on fertilizer and chemical usage will be detailed on specifications attached to the approved landscaping plan.

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<sup>3</sup> defined as a translocated or alien plant species occurring at a place outside its historically known natural range because of intentional or accidental spread by human activities which poses a threat by invasion or competition to exclude indigenous species





## **8. CONTROLS / CORRECTIVE ACTIONS**

- 8.1 All contractors shall be supervised by an on-site representative of the Applicant.
- 8.2 In Park and Open Space Areas, trees with dangerous limbs shall be inspected by an independent arborist. Subject to Council approval, the applicant/contractor will comply with the recommendations from the arborist.
- 8.3 The Contractor shall provide fences and/or trunk girdles to prevent unintended physical damage to the root system, trunk or canopy of native vegetation identified for retention within park areas.
- 8.4 The boundaries of all conservation areas shall be clearly defined either by fencing or taping or a combination of both.
- 8.5 Contractors shall not enter these conservation areas. Any damage to vegetation in conservation areas will be subject to a contractual penalty per tree damaged.
- 8.6 A copy of the approved Tree Clearing Plan, approved documents and Council's conditions shall be retained on site at all times.
- 8.7 Contractors undertaking The Works shall be instructed directly of all Council's conditions prior to works commencing.
- 8.8 Trees to be retained shall not have their crown removed. Spur climbing of any tree to be pruned shall also be avoided.
- 8.9 Pruning of trees shall be completed in accordance with Australian Standard 4373 - 1996 (Pruning of Amenity Trees).
- 8.10 Relevant provisions of Local, State and Federal Government Legislation/Policies shall be adhered to by the Contractor.





## 9. MONITORING / REPORTING

- 9.1 The Applicant shall appoint suitable Contractor(s) to undertake the selective clearing operations and, upon request by Council, the Applicant shall submit the appointed Contractor(s) previous work history for perusal if requested.
- 9.2 The Contractor shall monitor vegetation clearance and earthwork components of the Works on a continual basis to confirm that specific controls have been implemented and appropriate work practices are being adopted to achieve the specified objectives.
- 9.3 The Contractor shall formally report to the Applicant on a monthly basis. The report will discuss the following:
- 1) Works undertaken;
  - 2) Progress against stated objectives;
  - 3) Compliance with Performance Objectives;
  - 4) Significant problems encountered;
  - 5) Success or failures of measures implemented to rectify previously identified problems; and
  - 6) Measures to be taken to rectify new problems.
- 9.4 During clearing operations the Applicant shall report to Council in accordance with their requirements.





## References

JWA (2008). Response to the Director General's Environmental Assessment Requirements COBAKI LAKES VOLUME 1 - Ecological Assessment. A Report to Leda Manorstead Pty Ltd

JWA (2009a). Saltmarsh Rehabilitation Plan. Cobaki Lakes - Preferred Project Report. A Report to Leda Manorstead Pty Ltd

JWA (2009b). Scribbly Gum Management Plan. Cobaki Lakes - Preferred Project Report. A Report to Leda Manorstead Pty Ltd

JWA (2009c). Site Regeneration & Revegetation Plan. Cobaki Lakes - Preferred Project Report. A Report to Leda Manorstead Pty Ltd

JWA (2009d). Fauna Management Plan. Cobaki Lakes - Preferred Project Report. A Report to Leda Manorstead Pty Ltd

JWA (2009e). Assessment of Significance (7-part Test Equivalence). Cobaki Lakes - Preferred Project Report. A Report to Leda Manorstead Pty Ltd





## ANNEXURE 1: WEED CONTROL METHODOLOGY

Weed Species	Control Method	Chemical if required
<i>Abelia x grandiflora</i>	CS	GLY
<i>Ageratum houstonianum</i>	SS HP	GLY
<i>Alternanthera ficoidea</i>	CH HP SS	GLY
<i>Amaranthus retroflexus</i>	SS HP	GLY
<i>Andropogon virginicus</i>	CH HP SS	GLY
<i>Avena sp.</i>	SS HP	GLY
<i>Axonopus fissifolius</i>	SS	GLY
<i>Baccharis halimifolia</i>	SSJ A CSA SIA CHJ	GLY
<i>Bidens pilosa</i>	SS	MCPA
<i>Celtis sinensis</i>	HPJ CHJ CSA SSA	GLY
<i>Centella asiatica</i>	SS	MCPA
<i>Chloris gayana</i>	SS	GLY
<i>Cinnamomum camphora</i>	HPJ CHJ BBA CSA	TRI
<i>Conzya bonariensis</i>	SS	GLY
<i>Crassocephalum crepidioides</i>	HP SS	MCPA
<i>Crotalaria lanceolata</i>	SSJ HPA CHA	MCPA
<i>Crotalaria pallida</i>	SSJ HPA CHA	MCPA
<i>Desmodium uncinatum</i>	HP CS	GLY
<i>Emilia sonchifolia</i>	HP CH SS	GLY
<i>Erechtites valerianifolia</i>	HP	
<i>Eriobotrya japonica</i>	HPJ SSJ CSA SIA	GLY
<i>Euphorbia drummondii</i>	SS	GLY
<i>Gomphocarpus physocarpus</i>	HP SSJ	AMINE
<i>Harrisia martinii</i>	CH SS	TRI
<i>Jacaranda mimosifolia</i>	HPJ SSJ CSA SIA	GLY
<i>Lantana camara</i>	CSA BBA SSJ HPJ	TRI
<i>Macrotyloma axillare</i>	HP	
<i>Mangifera indica</i>	HPJ SSJ CSA SIA	GLY
<i>Melinis minutiflora</i>	SS	GLY
<i>Melinis repens</i>	SS	GLY
<i>Oxalis corniculata</i>	HP SS	GLY
<i>Panicum maximum</i>	SS CH	GLY
<i>Paspalum dilatatum</i>	HP CH SS	GLY
<i>Passiflora foetida</i>	SS HP	GLY
<i>Passiflora suberosa</i>	SS HP	GLY
<i>Phytolacca octandra</i>	CH HP SS	GLY
<i>Pinus elliotii</i>	CSA RBA SIA HPJ	GLY
<i>Schefflera actinophylla</i>	HPJ SSJ CSA SIA	GLY
<i>Senna floribunda</i>	HPJ SSJ CSA SIA	GLY





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<i>Senna pendula</i> var. <i>glabrata</i>	CHJ HPJ SSJ CSA SIA BBA	TRIA GLYJ
<i>Setaria pumila</i>	HP SS	GLY
<i>Sida cordifolia</i>	SSJ CHA HPA	FLU
<i>Sida rhombifolia</i>	SSJ CHA HPA	FLU
<i>Solanum mauritianum</i>	HPJ SSJ CSA SIA	GLY
<i>Solanum nigrum</i>	HP SS	GLY
<i>Solanum seaforthianum</i>	HPJ CSA SSA	GLY
<i>Solanum torvum</i>	BBA CSA SSJ	TRIA GLYJ
<i>Sporobolus pyramidalis</i>	SS HP CH	GLY
<i>Stellaria media</i>	HP SS	MCPA
<i>Thunbergia alata</i>	CS SS	GLY
<i>Urena lobata</i>	HP CS SSJ	GLY

SYMBOL	CONTROL METHOD
BB	Basal Bark
CH	Chipping
CS	Cut Stump
HP	Hand Pull
RB	Ring Bark
SI	Stem Injection
SS	Spot Spray

SYMBOL	CHEM
Amine	2,4D-Amine
Flu	Fluroxypyr
Gly	Glyphosate
MCPA	MCPA + dicamba
Tri	Triclopyr
J	Juvenile plants
A	Adult plants