



#### Newcastle Office

Ground Floor, 241 Denison Street, Broadmeadow, NSW Australia 2292  
PO Box 428, Hamilton, NSW Australia 2303

**Our Ref:** NW26414AS:IM:MD

**Date:** 7 August 2013

Attn: Mr Michael Pring  
Urban Growth NSW  
Wharf Street  
Forster NSW 2428

**Via:** Email ([mpring@urbangrowth.nsw.gov.au](mailto:mpring@urbangrowth.nsw.gov.au))

Dear Michael

#### **RE: 2013 TUNCURRY MIDGE ORCHID SURVEY RESULTS**

RPS Australia East (RPS) was requested by Urban Growth NSW to conduct a targeted survey for the Tuncurry Midge Orchid (TMO) (*Genoplesium littorale* syn. *Corunastylis littoralis*) during the orchid's 2013 flowering season. This survey was part of ongoing TMO seasonal survey works and to respond to population considerations raised by Dr Lachlan Copeland (Senior Botanist, Eco Logical Australia).

A scope for works for the 2013 surveys was prepared that included searches over areas that have been subject to recent bushfire (both controlled and uncontrolled) on the North Tuncurry Development Project site and in the South Forster and Minimbah localities. Given that the species appears to be a post disturbance coloniser, it is thought that the recently burnt habitats may yield additional TMO occurrences in these areas.

This information should be read in conjunction with detailed reporting prepared following TMO surveys in 2012.

#### **Methods**

The targeted surveys were conducted during 18–22 March 2013 and 23–24 April 2013 by two RPS Ecologists, namely Isaac Mamott and Andrew Smith. Surveys were conducted at all known *Genoplesium* ssp. locations as outlined within the RPS Scope of works provided in Attachment 1.

Each *Genoplesium* flowering stem observed were closely inspected with a 10x hand lens for identification to species level (and to help distinguish between other co-occurring *Genoplesium* taxa in the locality – See RPS 2012). Each *Genoplesium* flowering stem or group of stems were recorded with a hand held D-GPS and manual counts of each species undertaken. Macro photographs and voucher specimens were collected for verification by Dr Lachlan Copeland, Eco Logical Australia, for taxonomic confirmation.

#### **Results**

In total, 23 *Genoplesium* specimens were found at the Green Point Road Reserve/Powerline Easement. All of these specimens were determined to be *G. filiforme* by inspection from a hand lens. The *G. filiforme* is distinguished from *G. littorale* by the presence a dark marking and

numerous short hairs along the margin of the labellum, as well as other flower structural differences (see RPS 2012). No Samples were taken from this location.

Adjacent to the Green Point Road Reserve/Powerline Easement, was a recently (<6 months) burnt Heath area. Within this area, three *Genoplesium* specimens were found. All of these samples appeared not to be *G. filiforme*. They were also thought not to be *G. rufum* due to the absence of lateral sepal apical glads (often appearing as conspicuous white or semi translucent balloons) (see RPS 2012). Of these, one sample was taken as a voucher sample (Sample 1: Plate 1). This sample was confirmed to be *G. littorale* by Dr Lachlan Copeland.



**Plate 1: *Genoplesium littorale* within recently burnt Heath at the Green Point Road Reserve / Powerline Easement (Sample 1)**

In total, seven *Genoplesium* specimens were found within the Powerline Easement, Booti Booti National Park. All of these samples appeared to be *G. filiforme*.

Adjacent to the Powerline Easement, Booti Booti National Park is several NPWS Fire Trails (4WD tracks). In total, six *Genoplesium* specimens were found. Of these specimens, one sample that was fully in flower was taken as a voucher sample (Sample 2: Plate 2). This sample was confirmed to be *G. littorale* by Dr Lachlan Copeland.



**Plate 2. *Genoplesium littorale* within a NPWS Fire Trails (4WD tracks), Booti Booti National Park (Sample 2)**

No *Genoplesium* specimens were detected across the Crown Land at Minimbah, despite every known *Genoplesium* ssp. location being visited twice. Also, no *Genoplesium* specimens were detected within the recently burnt area on the Crown Land at Minimbah. However, three *Genoplesium* specimens were detected within the Powerline Easement, Midcoast Water Lands, Minimbah. Of these, a voucher sample from an individual in flower was taken (Sample 3: Plate 3). This sample was confirmed to be *G. littorale* by Dr Lachlan Copeland.



**Plate 3. *Genoplesium littorale* within Powerline Easement, Midcoast Water Lands, Minimbah (Sample 3)**

### **Conclusion**

In conclusion, at least two populations of *G. littorale* occur outside the known North Tuncurry population, namely the Midcoast Water Lands, Minimbah, and at Booti Booti National Park. These populations occur approximately 6 km north-west and 11 km south-east of the North Tuncurry *G. littorale* population, respectively. Therefore, additional population of *G. littorale* possible also occur in the locality.

*G. littorale* appears to be co-occurring with *G. filiforme* and *G. rufum*. These three species require specialised knowledge and equipment to distinguish between due to their high level of similarity. There is also anecdotal evidence that *G. littorale* X *rufum* hybrid may be occurring, further making *G. littorale* identification difficult. Therefore, there is the potential that some *G. filiforme* and/or *G. rufum* specimens may have been misidentified within the locality.

We trust this information is sufficient for your purposes, however should you require any further details or clarification, please do not hesitate to contact the writer.

Yours sincerely

RPS



Matt Doherty  
Technical Director (Ecology)

**Reference**

RPS (2012). Review of Tuncurry Midge Orchid (*Genoplesium littorale* syn. *Corunastylis littoralis*) for a proposed Rezoning. Crown Lands, North Tuncurry, NSW. Report to Landcom.



## Appendix 1

### SCOPE 2013 Targeted Tuncurry Midge Orchid (TMO) Survey Program

**Newcastle Office**

Ground Floor, 241 Denison Street, Broadmeadow, NSW Australia 2292  
PO Box 428, Hamilton, NSW Australia 2303

**Our Ref** NW26414  
**Date:** 14 February 2013

Attn: Mr Michael Pring  
Urban Growth NSW  
PO Box 718  
Forster NSW 2428

**Via:** email ([mpring@urbangrowth.nsw.gov.au](mailto:mpring@urbangrowth.nsw.gov.au))

Dear Michael

**RE: SCOPE 2013 TARGETED TUNCURRY MIDGE ORCHID (TMO) SURVEY PROGRAM****Introduction**

RPS was requested by Urban Growth NSW to provide a fee proposal to undertake a targeted survey for the Tuncurry Midge Orchid (TMO) (*Genoplesium littorale* syn. *Corunastylis littoralis*) during the orchid's 2013 flowering season. It is understood that the proposal request was in response to advice received by Landcom during 2012 from an independent orchid expert, Dr Lachlan Copeland, who suggested that further survey work on this species be undertaken to confirm the population size and extent of the species in areas outside the North Tuncurry TMO core population. The TMO has been previously recorded by RPS outside the North Tuncurry core population on Crown and Midcoast Water Lands, Minimbah, and at Green Point/Tiona.

Urban Growth NSW has also requested that the 2013 surveys target areas that have been subject to recent bushfire (both controlled and uncontrolled) in the South Forster and Minimbah localities. Given that the species appears to be a post disturbance coloniser, it is thought that the recently burnt habitats may yield additional TMO populations in these areas.

It is understood that the results from the 2013 surveys would be used to assist Urban Growth NSW in its discussions with Great Lakes Council and the NSW Department of Planning and Infrastructure in relation to a proposed rezoning of the North Tuncurry Crown Lands.

**Scope of Works**

We propose the following scope of works for the 2013 TMO surveys, in priority order:

- (1) Crown Lands, Minimbah – The 2013 surveys will comprise a search for (and validation of) previous RPS TMO records in areas subject to historical mineral sands mining. Wet heathlands, sedgeland and relatively undisturbed dune forests

will not be subject to the 2013 surveys as they represent low habitat potential for the TMO;

- (2) Midcoast Water lands, Minimbah - The 2013 surveys will comprise a search for (and validation of) previous RPS TMO records in areas subject to historical mineral sands mining along the north-western Midcoast Water site boundary in regenerating open Banksia Heathland;
- (3) Aerodrome Road reserve, immediately north of the Aerodrome Rd, Minimbah Fire Map Area - The 2013 surveys will comprise a search for (and validation of) previous RPS TMO records along the Aerodrome Road Reserve;
- (4) Powerline easement, Booti Booti National Park – The 2013 surveys will comprise a search for (and validation of) previous RPS TMO records within a powerline easement that runs parallel with The Lakesway between Tiona and Green Point (on the western side of The Lakesway);
- (5) Green Point Road Reserve/Powerline Easement - The 2013 surveys will comprise a search for (and validation of) previous RPS TMO records along a 250 metre length section of road reserve and powerline easement on the northern side of Green Point Road (just west of The Lakesway);
- (6) NPWS Fire Trails (4WD tracks), Booti Booti National Park – The 2013 surveys will comprise a search for (and validation of) previous RPS TMO records along two fire trails in Booti Booti National Park between Green Point and Camp Elim;
- (7) Burnt areas of Booti Booti National Park, Green Point/South Forster – Surveys will focus on areas of potential habitat within the area subject to the December 2012/ January 2013 bushfires (generally between Green Point Road north to ‘Berts Farm’ and east across The Lakesway to an 4WD access track); and
- (8) North Tuncurry Core Population – The 2013 surveys will comprise a search for (and validation of) previous RPS TMO records within a recently burnt area in the NDF. This area is generally located on the western side of the Golf Course access road and north of the existing RMS stockpile.

Pending success of the above surveys (Points 1-7) coupled with timing, the following additional surveys would be conducted.

- (9) Powerline easement, Booti Booti National Park –Should the presence of TMO be validated, the full 1.8 km length of easement will be searched;
- (10) NPWS Fire Trails (4WD tracks), Booti Booti National Park –Should the presence of TMO be validated, the full 1.7 km length of trails will be searched;
- (11) North Tuncurry Core Population – The 2013 surveys will comprise a search for (and validation of) previous RPS TMO records in the NDF. In addition, where time permits, a series of 10x10m plots will be carried out within the core population outside the NDF. All *Genoplesium* taxa observed with each plot will be identified to species level and counted. Basic extrapolation of the plot results can be used to provide an indicative occurrence of co-occurring *Genoplesium* taxa across within the North Tuncurry site; and
- (12) Burnt areas of the Minimbah Sandbeds between the Wallamba River and the Car Club – This area is noted to offer limited accessibility both vehicular and on foot. In areas of potential habitat that occurs on lands where access agreements are in



place coupled with physical access, a search for TMO will occur. Should TMO stems be identified in the survey areas each stem will be located with D-GPS and surveys will radiate from each occurrence;

Each *Genoplesium* flowering stem observed would be closely inspected with a 10x hand lens for identification to species level (and to help distinguish between other co-occurring *Genoplesium* taxa in the locality). Each *Genoplesium* flowering stem or group of stems would be referenced with a hand held D-GPS and manual counts of each species undertaken. Macro photographs and voucher specimens would be collected from each survey location for submission to Dr Peter Weston or Dr Mark Clements for taxonomic confirmation (particularly for areas outside the core population). A Threatened Plants Proforma would also be completed for each *Genoplesium* (sub) population recorded, including data on soils, aspect, elevation, floristics and breeding structure (% vegetative, bud, flower, fruit).

The study area proposed for the 2013 TMO surveys is shown in **Attachments A-G**.

#### Survey Timing

A 2 week survey period is proposed from 18 March 2013 to coincide with the optimal flowering period of the species in 2013.

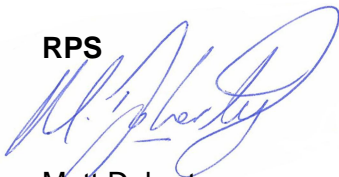
#### **Timing**

RPS are well placed to undertake the TMO 2013 survey program with anticipated commencement 18<sup>th</sup> March 2013 pending the species flowering status.

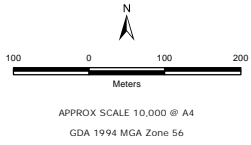
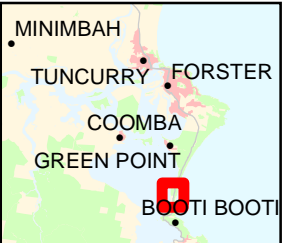
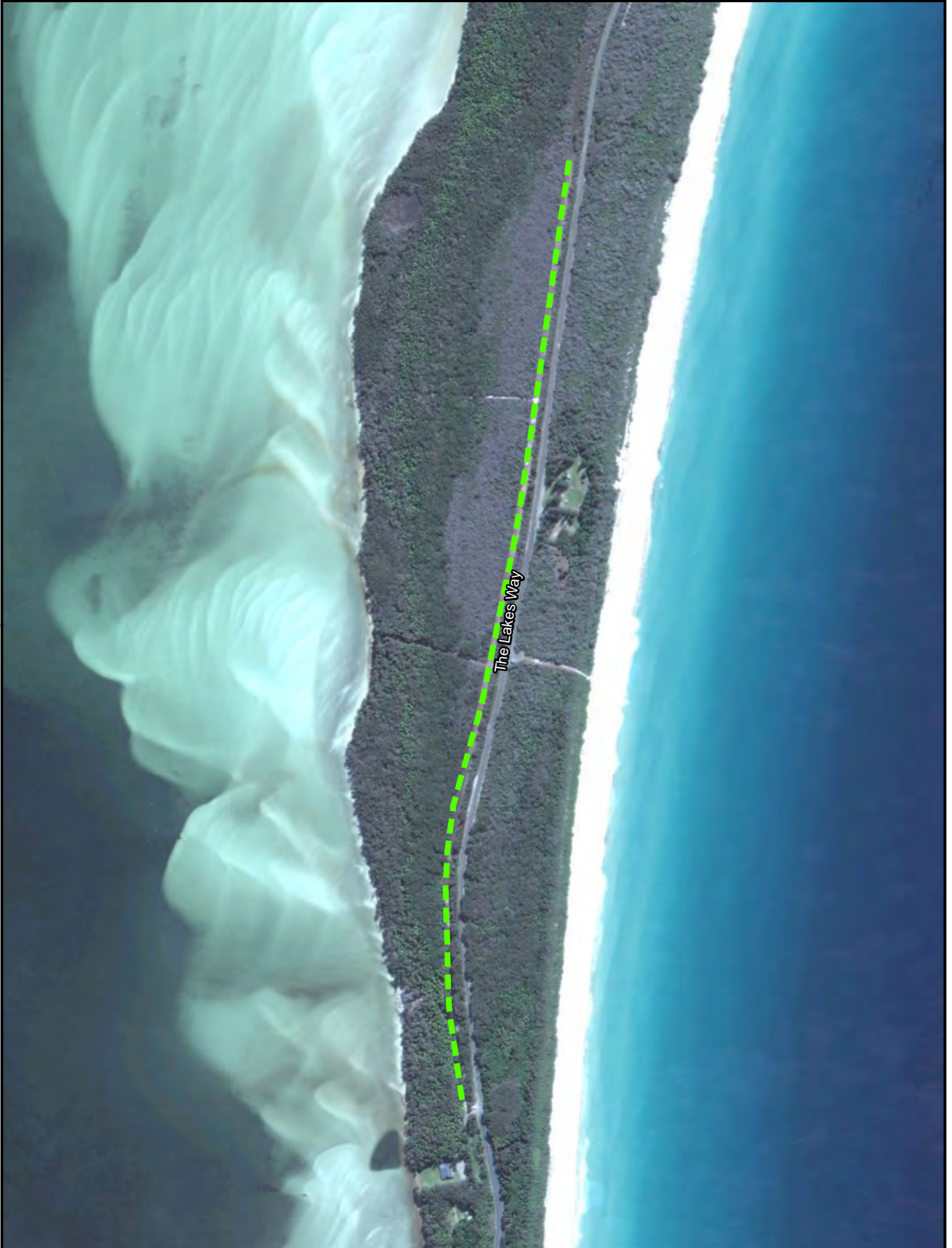
We look forward to the 2013 TMO season. Please contact Isaac Mamott or the writer should you have any queries regarding this proposal.

Yours sincerely

**RPS**



Matt Doherty  
Technical Director (Ecology)

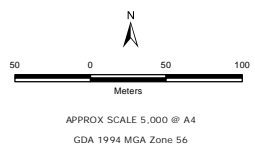
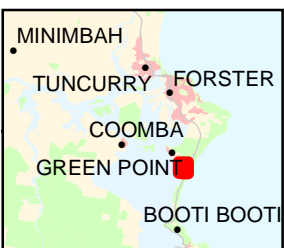


LEGEND  
— Powerline Easement

Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.  
 DATA SOURCES  
 RPS 2012.



ATTACHMENT A  
 Booti Booti National Park  
 Powerline Easement

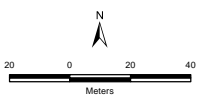


LEGEND  
--- 4WD Track

Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.  
 DATA SOURCES  
 RPS 2012.



ATTACHMENT B  
 Booti Booti National Park  
 Four Wheel Drive Track



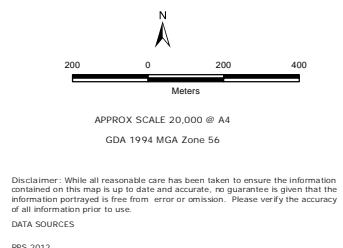
APPROX SCALE 2,500 @ A4  
GDA 1994 MGA Zone 56

LEGEND  
█ Powerline Easement

Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.  
 DATA SOURCES  
 RPS 2012.

Tracking ID: 26414-001b Compiled: 01 February 2013

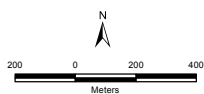
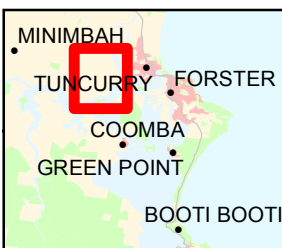
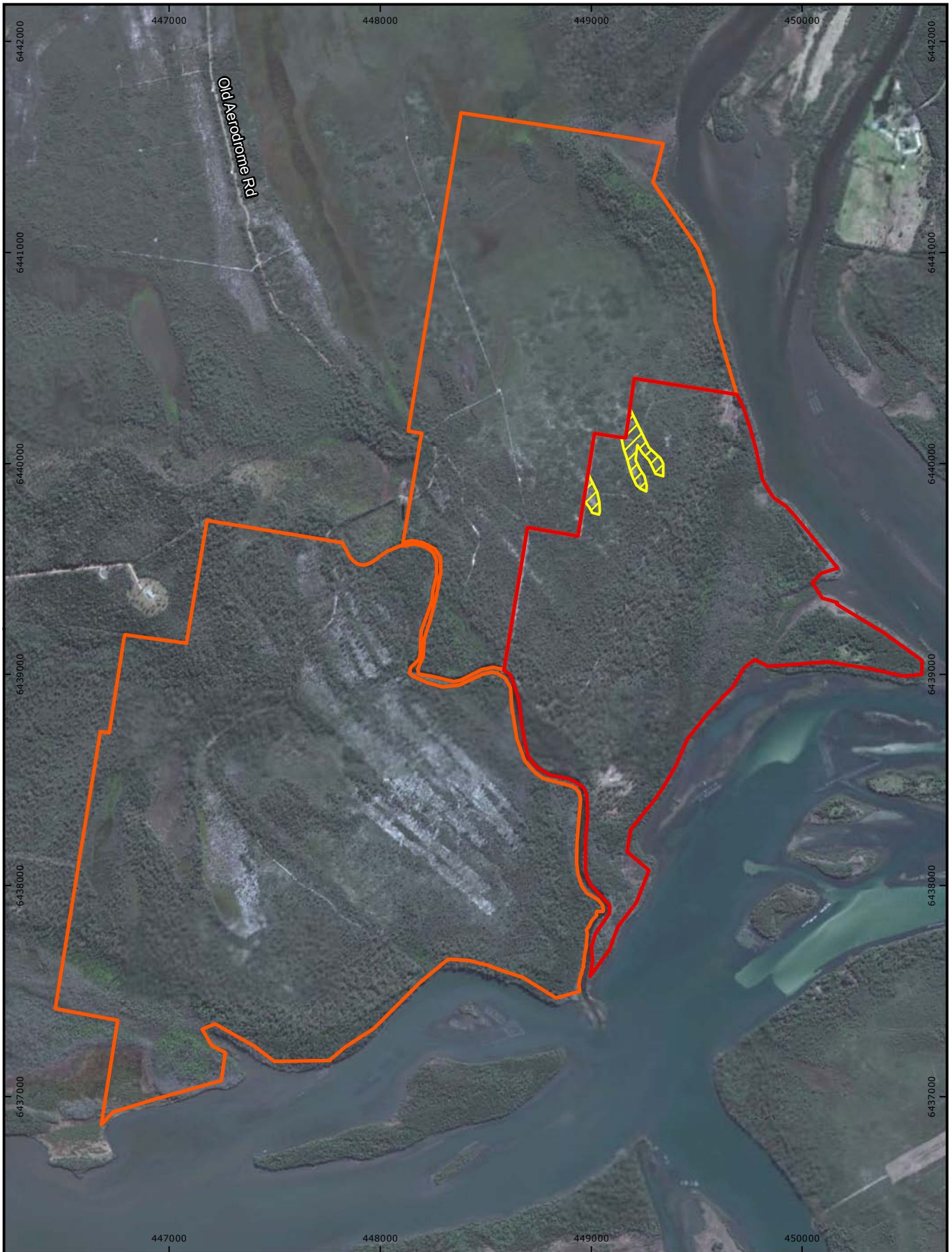
**RPS**  
 ATTACHMENT C  
 Green Point  
 Road Easement



LEGEND  
 Fire Zone



ATTACHMENT D  
 Booti Booti  
 National Park  
 Fire Zone






APPROX SCALE 25,000 @ A4  
GDA 1994 MGA Zone 56

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DATA SOURCES  
RPS 2012.

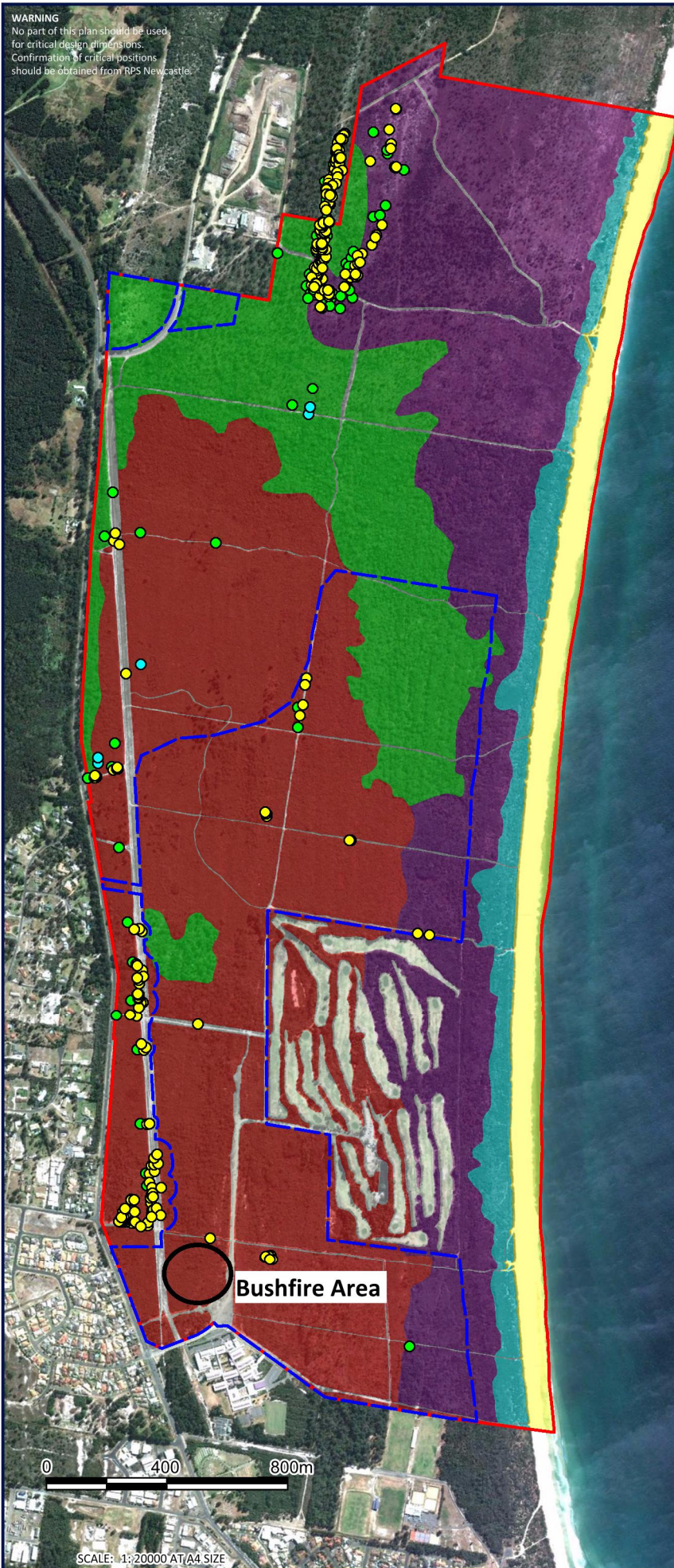
**LEGEND**

-  Crown Lands Minimbah
-  Mid Coast Water Lands, Minimbah
-  Regenerating *Banksia aenula* open woodland (Suitable TMO Habitat)



ATTACHMENT E  
**Crown Lands  
Minimbah**

**WARNING**  
 No part of this plan should be used for critical design dimensions. Confirmation of critical positions should be obtained from RPS Newcastle.



**Legend**

- Site Boundary (630ha)
- Revised - Notional Development Footprint

Vegetation Communities

- Cleared
- MU1 - Eucalyptus pilularis Dry Sclerophyll Forest (dunal)
- MU2 - Banksia aemula Dry Heathland
- MU3 - Leptospermum laevigatum Dry Sclerophyll Shrubland
- MU4 - Foredune Complex (comprising Spinifex sericeus Tussock Grassland and Acacia sophorae-\*Chrysanthemoides monolifera subsp rotunda Dry Sclerophyll Shrub
- MU5 - Beach

- RPS TMO Records (2010 - 2012)
- Paget TMO Records (2008)
- ERM TMO Records (2010)

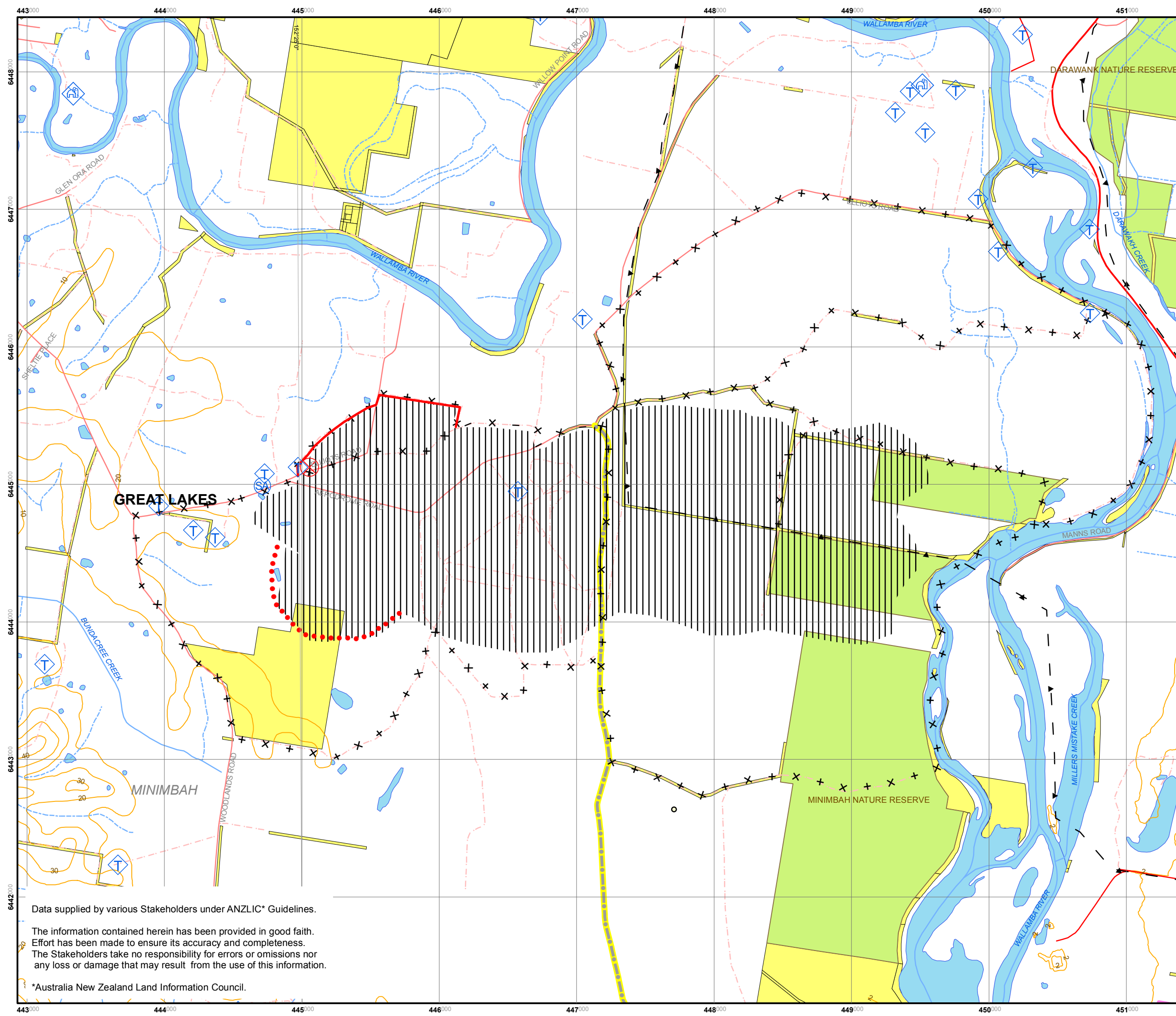


**Bushfire Area**

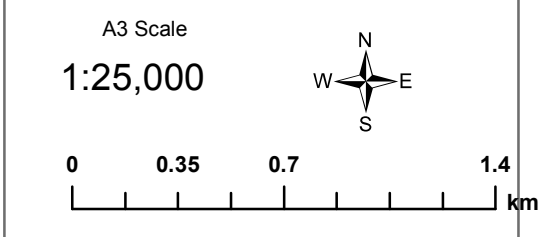


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**Minimbah**  
Great Lakes

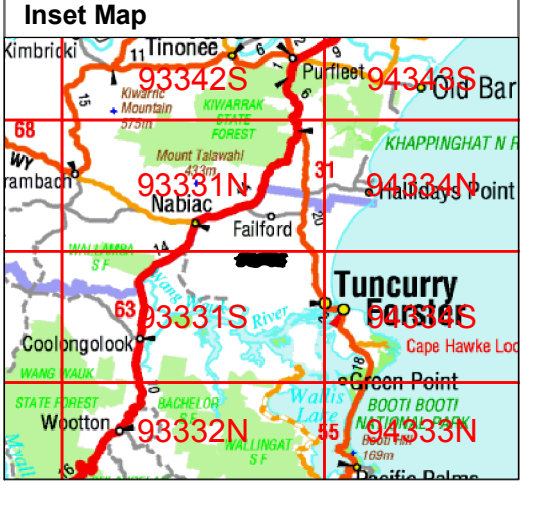


<b>AIR</b>	Airbase	<b>A</b>	Aboriginal Site	<b>AI</b>	Aerial Ignition
<b>AMB</b>	Ambulance Location	<b>FA</b>	Endangered Fauna	<b>BL</b>	Proposed Backburn Line
<b>WH</b>	Water Point Helicopter	<b>FL</b>	Endangered Flora	<b>BL</b>	Burning Backburn Line
<b>WV</b>	Water Point Vehicle	<b>HS</b>	Historic Site	<b>BL</b>	Completed Backburn Line
<b>H</b>	Helipad	<b>T</b>	Threatened Property	<b>CL</b>	Proposed Control Line
<b>AA</b>	Assemble Area	<b>E</b>	Escape Route	<b>CL</b>	Completed Control Line
<b>BC</b>	Base Camp	<b>R</b>	Refuge Area	<b>+</b>	Predicted Fire Edge
<b>CC</b>	Control Centre	<b>O</b>	Fire Origin	<b>+</b>	Going Fire Edge
<b>DC</b>	Divisional Command	<b>*</b>	Spot Fire	<b>+</b>	Contained Fire Edge
<b>DB</b>	Divisional Boundary	<b>F</b>	Fire Direction	<b>+</b>	Proposed Burn Area
<b>SC</b>	Sector Command	<b>W</b>	Wind Direction	<b>+</b>	Backburn Area
<b>SB</b>	Sector Boundary			<b>+</b>	Burnt Area
<b>SA</b>	Staging Area			<b>+</b>	

**Plot Information**  
Date: 19 Sep 2011 1621

**Fire Statistics**  
Burnt Area: 708.50 ha  
Burnt Perimeter: 13,234.14 m  
Map Version: 4

**Map Details:**  
Base Data: LPI Cadastre & Topo Database  
Map Projection: MGA94 Zone 56  
Print Date/Time: 19 Sep 2011 1622  
Authorised By: Ian Pilgrim



Data supplied by various Stakeholders under ANZLIC\* Guidelines.

The information contained herein has been provided in good faith. Effort has been made to ensure its accuracy and completeness. The Stakeholders take no responsibility for errors or omissions nor any loss or damage that may result from the use of this information.

\*Australia New Zealand Land Information Council.