



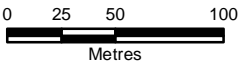


Figure 7

Overlay of the proposal on the vegetation types at Mundamia



- LEGEND**
- Drainage Swale
  - Incised Watercourse
  - Subject Land
  - Residential Footprint
  - APZ
  - Grey Gum - Blue-leaved Stringybark Open Forest
  - Highly disturbed Grey Gum - Stringybark Woodland
  - Kunzea Heathland
  - Paperbark Closed Forest
  - Pasture
  - Regrowth Woodland with Kunzea Heath
  - Mixed woodland strip
  - Scribbly Gum - Bloodwood Forest
  - Spotted Gum Blackbutt Forest



- NOTES**
- All features are approximate only and subject to detailed survey
  - Proposed zoning courtesy of MALBEC Properties

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Project Name: **Mundamia**

Prepared for: **Twynam Property Group**

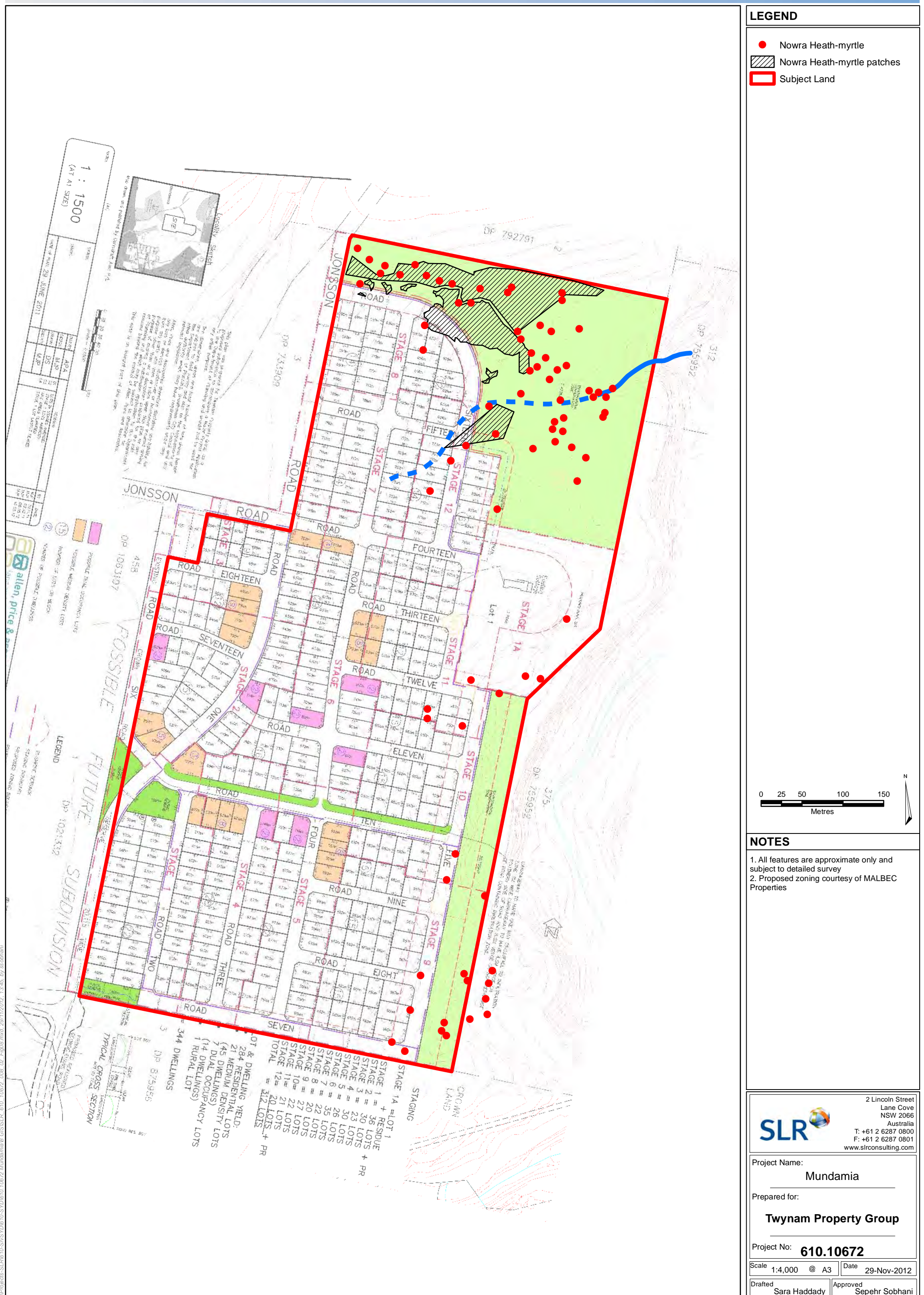
Project No: **610.10672**

Scale 1:3,500 @ A3 Date 29-Nov-2012

Drafted Sara Haddady Approved Sepehr Sobhani

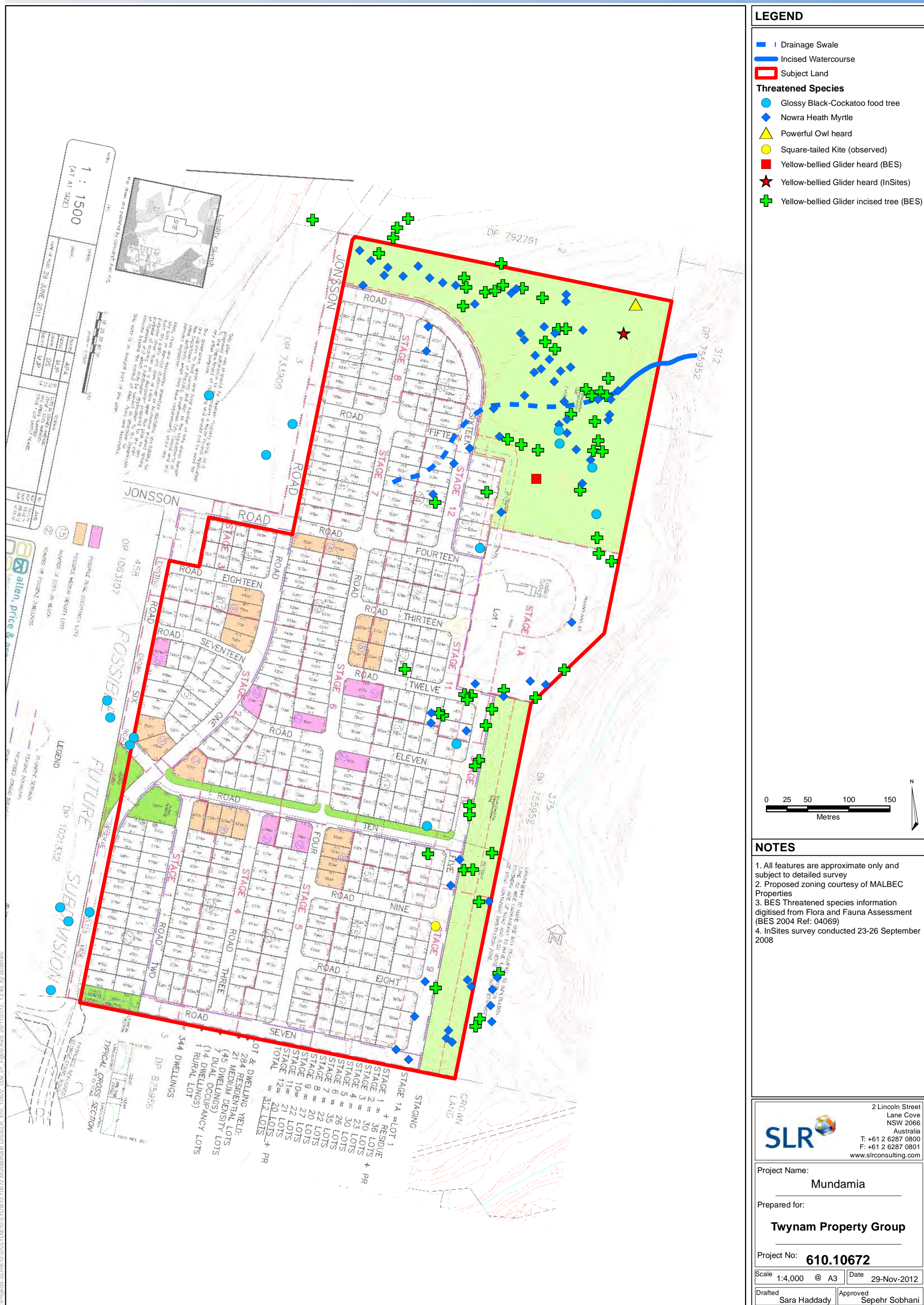


## Distribution of the Nowra Heath-myrtle on the subject land





## Threatened Species recorded on and near the subject land at Mundamia



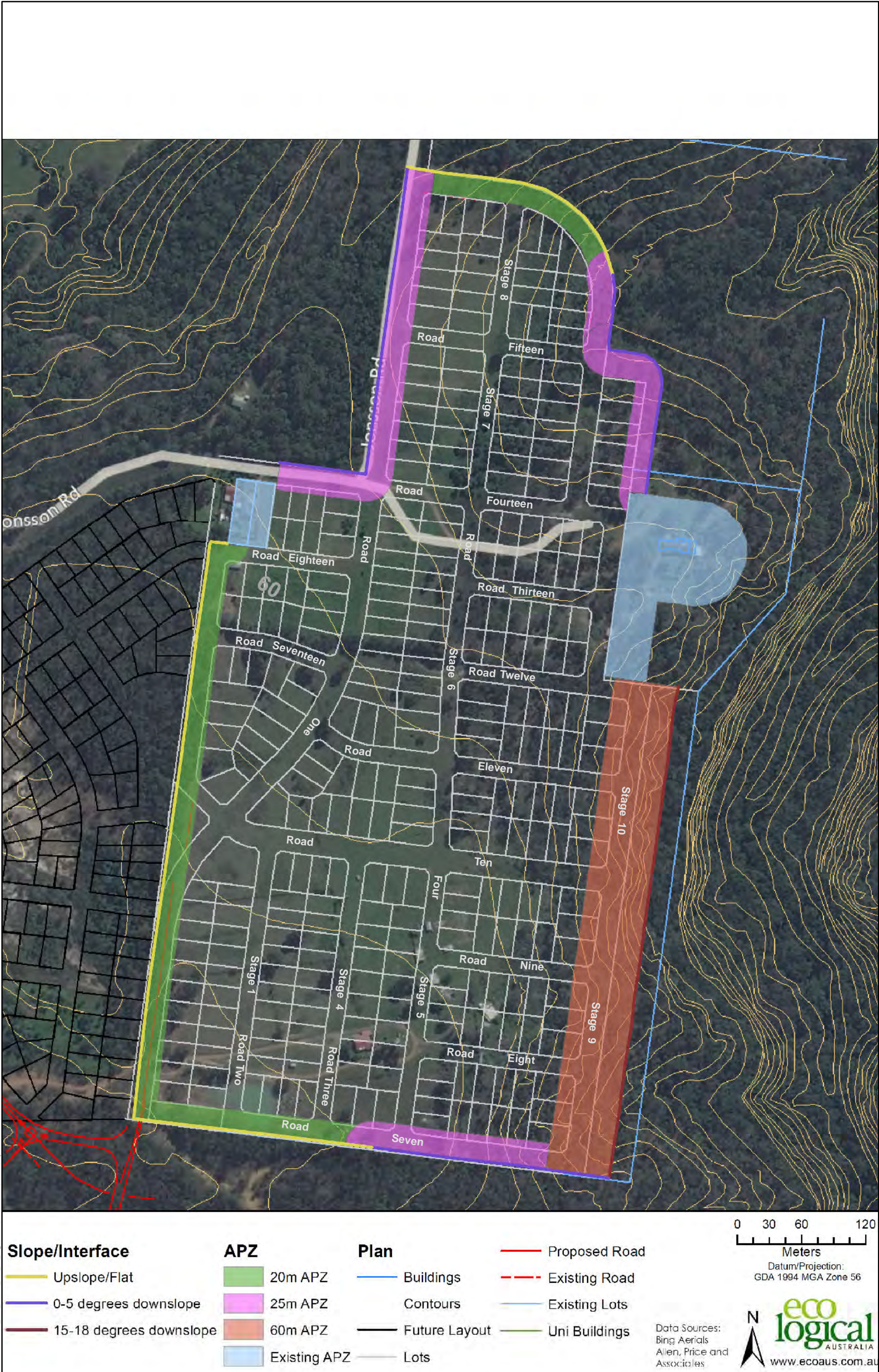


## Stormwater management regime for the subject land at Mundamia





Figure 11 Bushfire Protection Measures around the subject land



LEGEND

NOTES

1. Plan courtesy of Ecological Australia

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Figure 12

Nowra - Bomaderry Structure Plan



**Legend**

- Structure Plan Boundary
- Existing Living Area
- Future Living Area
- Possible Future Living Area
- Future Long Term Living Area
- Existing Rural Residential
- Existing CBD Area
- Existing Neighbourhood Centre
- Future Neighbourhood Centre
- Existing Local Centre
- Future Local Centre
- Existing Other Commercial
- Future Other Commercial
- Existing Industrial Land
- Future Industrial Land
- Existing School/TAFE
- Future School
- Existing University & TAFE Campus
- Existing Active Recreation
- Future Active Recreation
- Conservation & Riparian Area
- Future Active/Passive Open Space or Conservatio
- Future Advanced Screening
- Scenic Protection Areas
- Rural Area
- Future Western Bypass
- Bypass alignment in this location subject to further investigation as part of LEP
- Main Roads
- Local Road Network
- North Nowra Link Road Options
- South Coast Correctional Centre Site

Adopted by Council on 24th October 2006 and 25th September 2007.  
Endorsed by the Department of Planning 28th February 2008.

**Structure Plan**

February 2008

Not To Scale

Nowra Bomaderry Structure Plan

**LEGEND**

**NOTES**

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global environmental solutions

Lot 3 in DP 568613 and Lot 384 in DP 755952  
George Evans Road, Mundamia

Proposed Residential Estate

Flora & Fauna Issues & Assessment Report

Appendix A  
Details of Investigations in 2004 (BES) and 2008 (Environmental InSites)

November 2012



## 1 INTRODUCTION

Field surveys for flora and fauna were conducted within the subject site and study area at Mundamia during the following survey periods:

- 26<sup>th</sup> of February 2004 to 22<sup>nd</sup> of June 2004 by BES (Table 1); and
- 24<sup>th</sup> to the 26<sup>th</sup> of September 2008 by Environmental InSites (Table 2).

**Table 1** Field survey summary (BES 2004)

Year	Dates	Technique	Location	Effort	Reference
2004	26 <sup>th</sup> February; 2 <sup>nd</sup> , 18 <sup>th</sup> March.	General vegetation surveys	Area 5	30.5 hours	BES 2004
	19 <sup>th</sup> March; 27 <sup>th</sup> April	Targeted grid searches for threatened and regionally significant flora species.	Area 5	67 hours	BES 2004
	22 <sup>nd</sup> June	Targeted transects for <i>Genoplesium baueri</i>	Area 5	4 hours	BES 2004
	26 <sup>th</sup> February	Diurnal habitat search	Area 5		BES 2004
	26 <sup>th</sup> February	Nocturnal surveys including spotlighting, call playback and Ultrasonic detection	Area 5	10.25 hours	BES 2004
	26 <sup>th</sup> – 29 <sup>th</sup> February	Terrestrial Elliott Trapping	Area 5	250 trap nights	BES 2004
	26 <sup>th</sup> – 29 <sup>th</sup> February	Terrestrial cage trapping (small)	Area 5	100 trap nights	BES 2004
	26 <sup>th</sup> – 29 <sup>th</sup> February	Terrestrial cage trapping (large)	Area 5	16 trap nights	BES 2004
	26 <sup>th</sup> February to 18 <sup>th</sup> March	Arboreal hair funnels	Area 5	550 trap nights	BES 2004
	2 <sup>nd</sup> March	Diurnal habitat search	Area 5	23.5 hours	BES 2004
	2 <sup>nd</sup> March	Nocturnal surveys including spotlighting, call playback and Ultrasonic detection	Area 5	6.25 hours	BES 2004
	18 <sup>th</sup> March	Diurnal habitat search	Area 5	4 hours	BES 2004
	18 <sup>th</sup> March	Nocturnal surveys including spotlighting, call playback and Ultrasonic detection	Area 5	6.2 hours	BES 2004
	19 <sup>th</sup> March	Diurnal habitat search	Area 5	52 hours	BES 2004
	10 <sup>th</sup> & 22 <sup>nd</sup> June	Nesting assessments	Area 5	11.5 hours	BES 2004



**Table 2 Field surveys undertaken by Environmental InSites for this Report**

Year	Dates	Technique	Location	Effort	Reference
2008	24 <sup>th</sup> -26 <sup>th</sup> September	Targeted surveys for the Nowra Heath Myrtle <i>Triplarina nowraensis</i>	Subject Site	8 hours	Environmental InSites 2008
	24 <sup>th</sup> -26 <sup>th</sup> September	Flora surveys	Subject Site	8 hours	Environmental InSites 2008
	24 <sup>th</sup> -26 <sup>th</sup> September	Diurnal Bird Surveys	Subject Site	4 hours (dedicated) plus whole survey period	Environmental InSites 2008
	24 <sup>th</sup> -25 <sup>th</sup> September	Spotlighting	Subject Site	4 hours	Environmental InSites 2008
	24 <sup>th</sup> -25 <sup>th</sup> September	Call Playback	Subject Site	2 hours	Environmental InSites 2008
	24 <sup>th</sup> -25 <sup>th</sup> September	Ultrasonic Bat detection - Mobile	Subject Site	4 hours	Environmental InSites 2008
	24 <sup>th</sup> -25 <sup>th</sup> September	Ultrasonic Bat detection – fixed	Subject Site	20 hours	Environmental InSites 2008
	24 <sup>th</sup> -25 <sup>th</sup> September	Nocturnal Amphibian surveys	Creekline and dams within subject site	3 hours	Environmental InSites 2008
	24 <sup>th</sup> -26 <sup>th</sup> September	Hollow tree surveys	Subject Site	8 hours	Environmental InSites 2008
	24 <sup>th</sup> -26 <sup>th</sup> September	Habitat search	Subject Site	6 hours	Environmental InSites 2008

### Supplementary Investigations

In November and December 2009 and February 2010, BES (now Eco Logical Australia – ELA) conducted further flora and fauna surveys on Council land to the immediate west of the subject site at Mundamia. Those investigations included:

- dedicated transect surveys for threatened orchids known to occur in the locality;
- nesting assessments for the Gang Gang Cockatoo;
- stag watch surveys for nocturnal mammals and birds;
- nocturnal spotlighting, call playback and Anabat recording;
- 200 trap-nights for the Eastern Pygmy Possum and the White-footed Dunnart; and
- the use of remote cameras to survey for Rosenberg's Goanna and the Tiger Quoll.

Additional surveys and inspections of the subject site and nearby land have also been conducted in 2010 and 2011 by Environmental InSites and by Shoalhaven City Council (SCC) including:

- a supplementary inspection of the proposed road alignment for access into the Mundamia residential area, on the 4<sup>th</sup> of May 2010 (Environmental InSites);
- dedicated surveys for the Spring Tiny Greenhood orchid, both on the subject site and in the immediate vicinity, by SCC and Environmental InSites (dates); and
- two supplementary dedicated surveys of the subject site (dates) by Environmental InSites to refine vegetation mapping and to provide added information and detail regarding the distribution and densities of patches of the Nowra Heath Myrtle.