

Ben Anderson
Ulan Coal Mines Limited
Glencore Coal Assets Australia
4505 Ulan Road,
ULAN NSW 2850

17 December 2015

Dear Mr Anderson,

Ulan Coal Mines Ltd – Offset Area Calculations

Eco Logical Australia (ELA) was engaged by Ulan Coal Mines Limited (UCML) to undertake a detailed analysis of previously mapped vegetation communities within the UCML Biodiversity Offset Areas (BOAs) and to identify any changes in the area of *White Box – Yellow Box – Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands* (Box Gum Woodland) present within the Biodiversity Offset Areas (BOAs). This vegetation community is listed as an Endangered Ecological Community (EEC) under the *Threatened Species Conservation Act 1995* (TSC Act).

Mapping originally undertaken for the Ulan Coal Continued Operations Project (UCCO) Environmental Assessment (Umwelt, 2009), mapped a total of 465 hectares (ha) required for approval. Mapping undertaken for the Environmental Assessment was originally undertaken at a broad scale within some areas of the BOAs. The EEC was originally mapped using a number of different communities, all of which meet the definition of the EEC under the TSC Act. These variants included:

- Blakely's Red Gum Open Forest
- Blakely's Red Gum Open Forest (regenerating)
- Blakely's Red Gum Open Forest Grassland
- Grey Box Woodland
- Grey Box Woodland (regenerating)
- Grey Box Woodland Grassland
- White Box Woodland
- White Box Woodland Grassland
- Modified White Box Woodland
- Yellow Box – Red Gum Woodland
- Derived Native Grassland

Further work has been undertaken within the BOAs and as a result, detailed mapping is now available for some areas. Refinement of the mapping has resulted in a change to the total area of Box Gum Woodland present within the BOAs (**Table 1**).

Table 1: UCML Biodiversity Offset Area Vegetation Mapping Changes Summary

	Bobadeen (ha)	Bobadeen East (ha)	Bobadeen Corridor (ha)	Total (ha)
PA 08_184 Table 15 (shown with Bobadeen corridor & Bobadeen combined)	239	169	57	465
2009 Mapping	239	166.98	57.05	463
Discrepancy – approval & 2009	0	- 2	0	- 2
2011 Mapping	234	159	57.05	450.05
Discrepancy – 2009 & 2011	5	- 8	0	- 13
2012 Mapping	226.01	159.51	56.97	442.49
Discrepancy – 2011 & 2012	- 8	0	0	- 8
TOTAL Discrepancy				- 23

Attachment 1 below shows the additional areas of White Box Woodland present within the Bobadeen East Offset Area Extension. This area will provide an additional 11 ha of White Box Woodland to the total area protected under the BOAs.

The table above shows that through refinement of vegetation community mapping, there has been a reduction of 23 ha of Box Gum Woodland present within the UCML BOAs. The figures within **Attachment 2** of this letter outline the area of change of vegetation mapping within the BOAs, and reflect the areas shown in **Table 1** above.

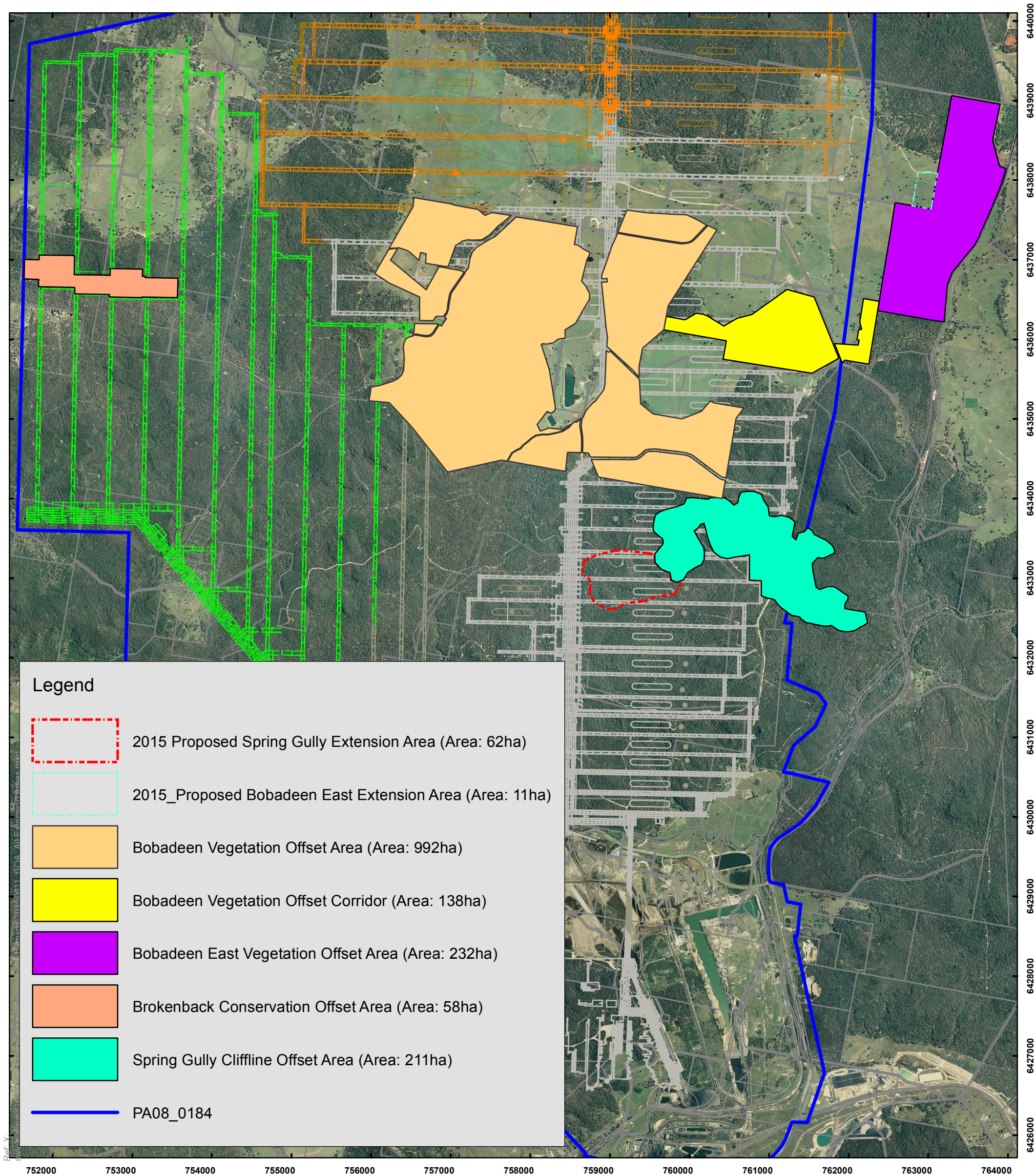
Should you have any further queries regarding this matter, please do not hesitate to contact me on 02 4302 1231 or rachelm@ecoaus.com.au

Kind Regards,



Rachel Murray
Senior Environmental Consultant

ATTACHMENT 1 – 2015 BOA Extension Areas

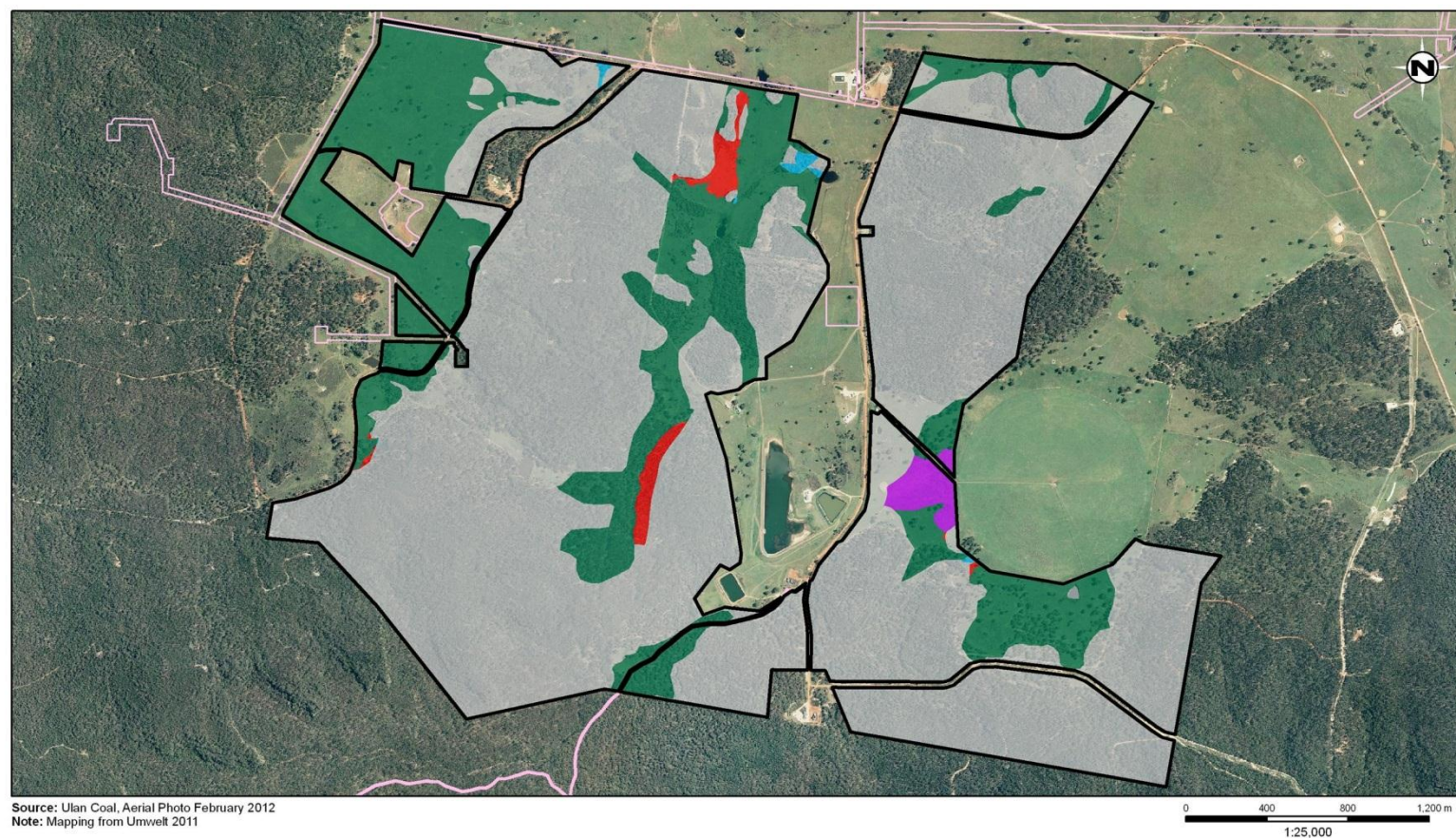


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DATA SOURCE
Ulan Coal Mines Limited

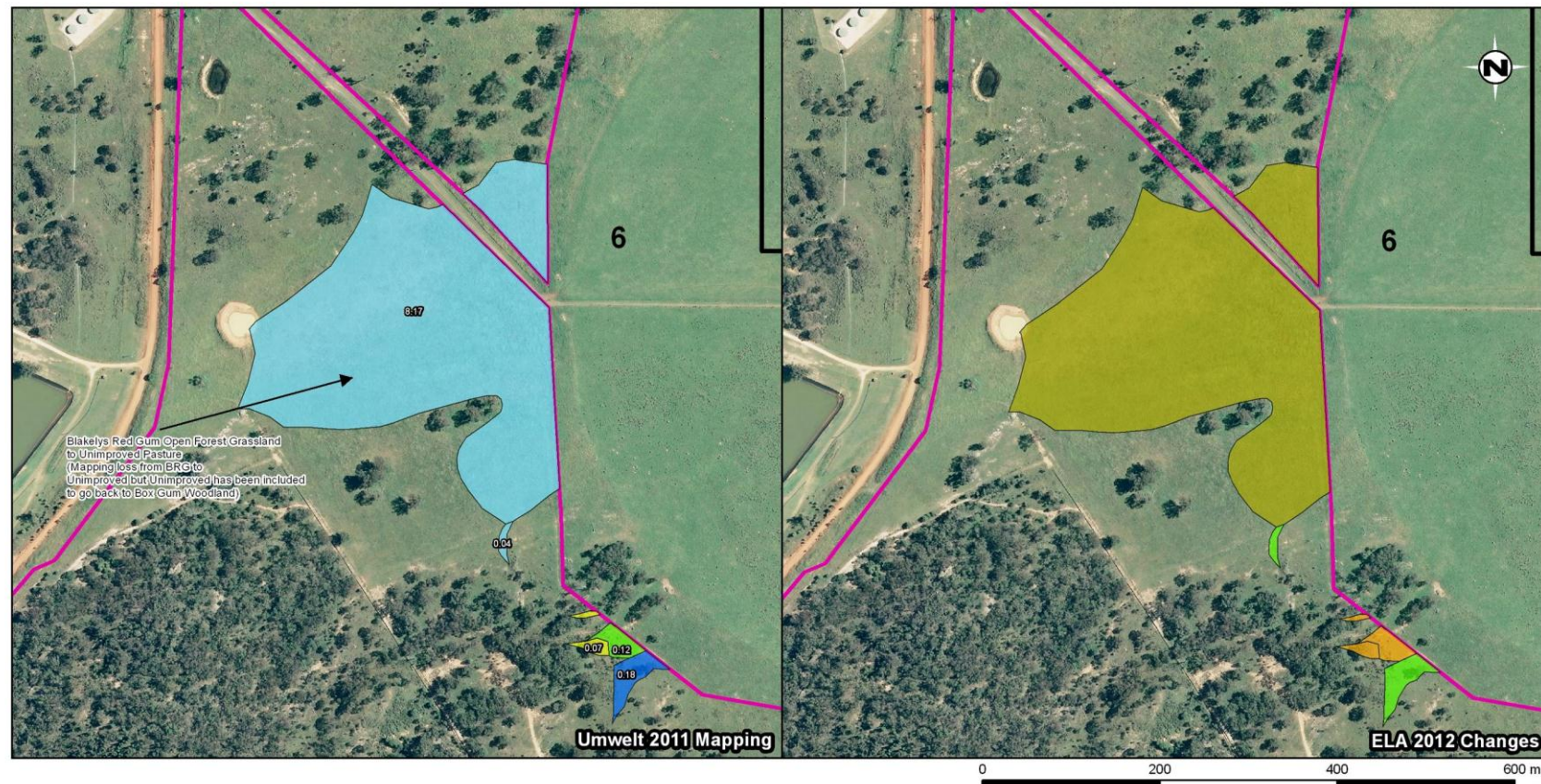
ATTACHMENT 2 – Figures



Legend

- | | |
|-----------------------------------|--|
| Bobadeen Vegetation Offset Domain | Box Gum Woodland Gain |
| Surface Infrastructure | Box Gum Woodland Loss |
| | Box Gum Woodland (Mapping loss from BRG to Unimproved but Unimproved has been included to go back to Box Gum Woodland) |
| | Box Gum Woodland Static |
| | Not related community |

**Vegetation Mapping Change
from Umwelt 2011 to ELA 2012**

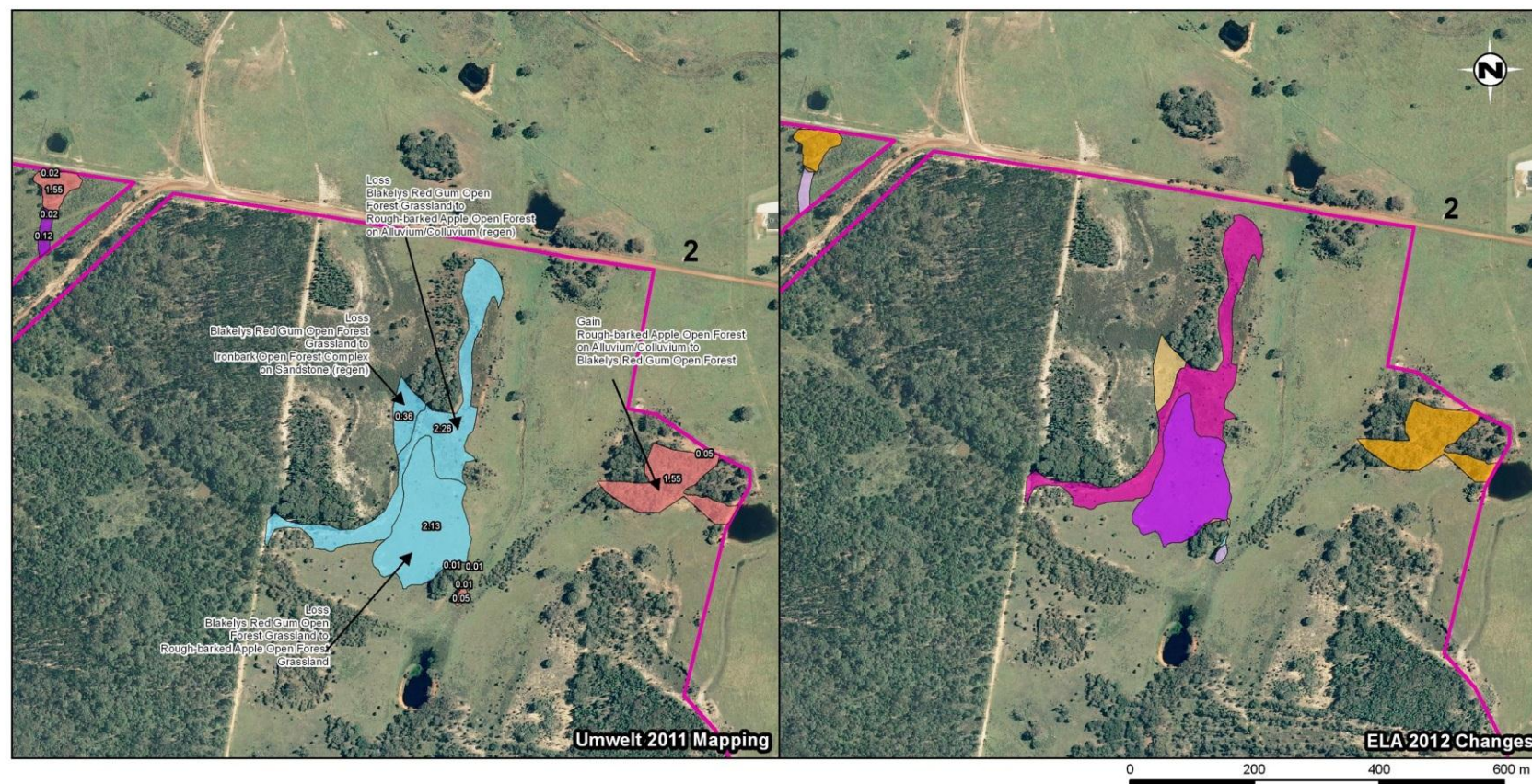


Legend

	Bobadeen Vegetation Offset Domain		Ironbark Open Forest Complex on Sandstone (regenerating)
	Blakelys Red Gum Open Forest		Rough-barked Apple Open Forest Grassland
	Blakelys Red Gum Open Forest (regenerating)		Rough-barked Apple Open Forest on Alluvium/Colluvium
	Blakelys Red Gum Open Forest Grassland		Rough-barked Apple Open Forest on Alluvium/Colluvium (regenerating)
	Grey Box Woodland Grassland		Unimproved Pasture
	Ironbark Open Forest Complex Grassland		White Box Woodland
	Ironbark Open Forest Complex on Sandstone		White Box Woodland Grassland

8.17 ha Polygon of Box Gum Woodland Change

Overview of ELA changes to Umwelt 2011 Vegetation Mapping

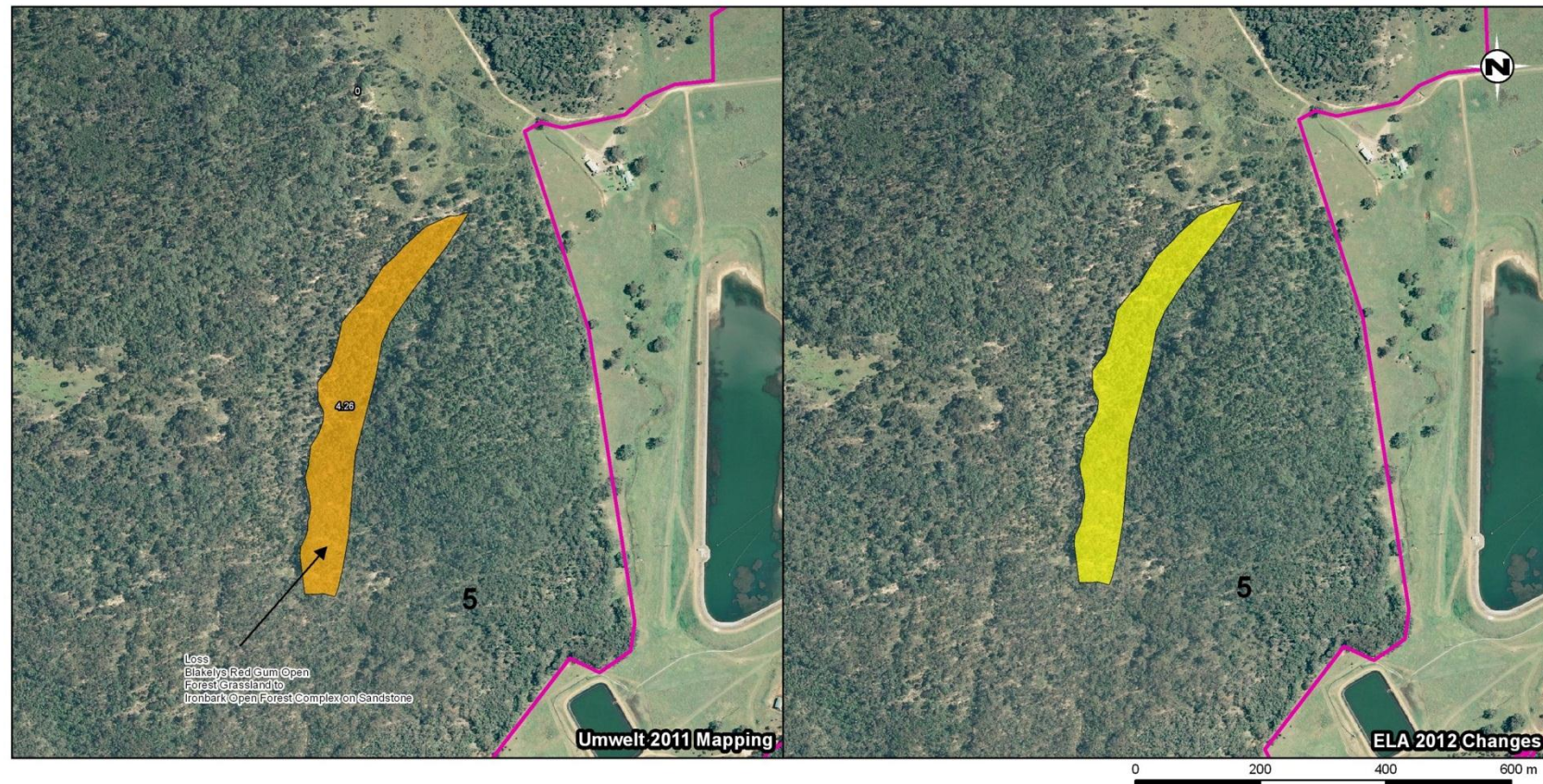


Legend

 Bobadeen Vegetation Offset Domain	 Ironbark Open Forest Complex on Sandstone (regenerating)
 Blakelys Red Gum Open Forest	 Rough-barked Apple Open Forest Grassland
 Blakelys Red Gum Open Forest (regenerating)	 Rough-barked Apple Open Forest on Alluvium/Colluvium
 Blakelys Red Gum Open Forest Grassland	 Rough-barked Apple Open Forest on Alluvium/Colluvium (regenerating)
 Grey Box Woodland Grassland	 Unimproved Pasture
 Ironbark Open Forest Complex Grassland	 White Box Woodland
 Ironbark Open Forest Complex on Sandstone	 White Box Woodland Grassland

Main area 1 of Box Gum Woodland Loss

Overview of ELA changes to
Umwelt 2011 Vegetation Mapping



Legend

 Bobadeen Vegetation Offset Domain	 Ironbark Open Forest Complex on Sandstone (regenerating)
 Blakelys Red Gum Open Forest	 Rough-barked Apple Open Forest Grassland
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 Ironbark Open Forest Complex Grassland	 White Box Woodland
 Ironbark Open Forest Complex on Sandstone	 White Box Woodland Grassland

Main area 2 of Box Gum Woodland Loss

Overview of ELA changes to
Umwelt 2011 Vegetation Mapping