

Attachment J

Ecological Assessment and
Revised Brickworks Project Area



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Briefing Note

To: Irena Sharp (Land Development Agency)
From: Umwelt (Australia) Pty Limited
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Date: 09 November 2015
Subject: Ecological Assessment at Revised Brickworks Project Area

Purpose

To communicate the outcomes of the additional ecological survey completed for the Canberra Brickworks and Environs Project in November 2015.

Findings

Up to 1.2 hectares of exotic pasture dominated by Chilean needlegrass (*Nassella neesiana*) was identified, which may provide suitable habitat for the critically endangered golden sun moth (GSM; *Synemon plana*). No other matters of ecological significance were neither identified, nor were any substantial areas of native vegetation.

Recommendations

It is recommended that surveys are completed in the coming weeks to identify whether any GSM occurs within these areas of potential habitat.

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1.0 Introduction

Umwelt was engaged to undertake a basic ecological assessment of Blocks 1, 7 and 20 Section 102, Yarralumla (the Project Area) (**Figure 1**). This area forms part of the Canberra Brickworks and Environs site.

These areas were not surveyed in detail in the initial ecological assessment completed by Umwelt in 2014, as the aim of these surveys was the validation of previously mapped threatened species habitat restricted to the native grassland areas to the south of Denman Street.

The objective of the current assessment was to identify whether any ecological triggers for Impact Track Assessment under Schedule 4 of the *Planning and Development Act 2007* (PD Act) were applicable, or whether any matters of national environmental significance (MNES) protected by the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were likely to be impacted. These triggers include the clearing of native vegetation, and impact to listed threatened species.

2.0 Methodology

A Senior Ecologist from Umwelt undertook a meandering survey of the Project Area on 6 November 2015. To address the project objectives, the survey focussed on delineating vegetation types, and identifying potential threatened species habitat.

Descriptions of each vegetation type were made, and the following map (**Figure 2**) developed based on observations. No quantitative surveys were undertaken as a component of the assessment.

3.0 Results

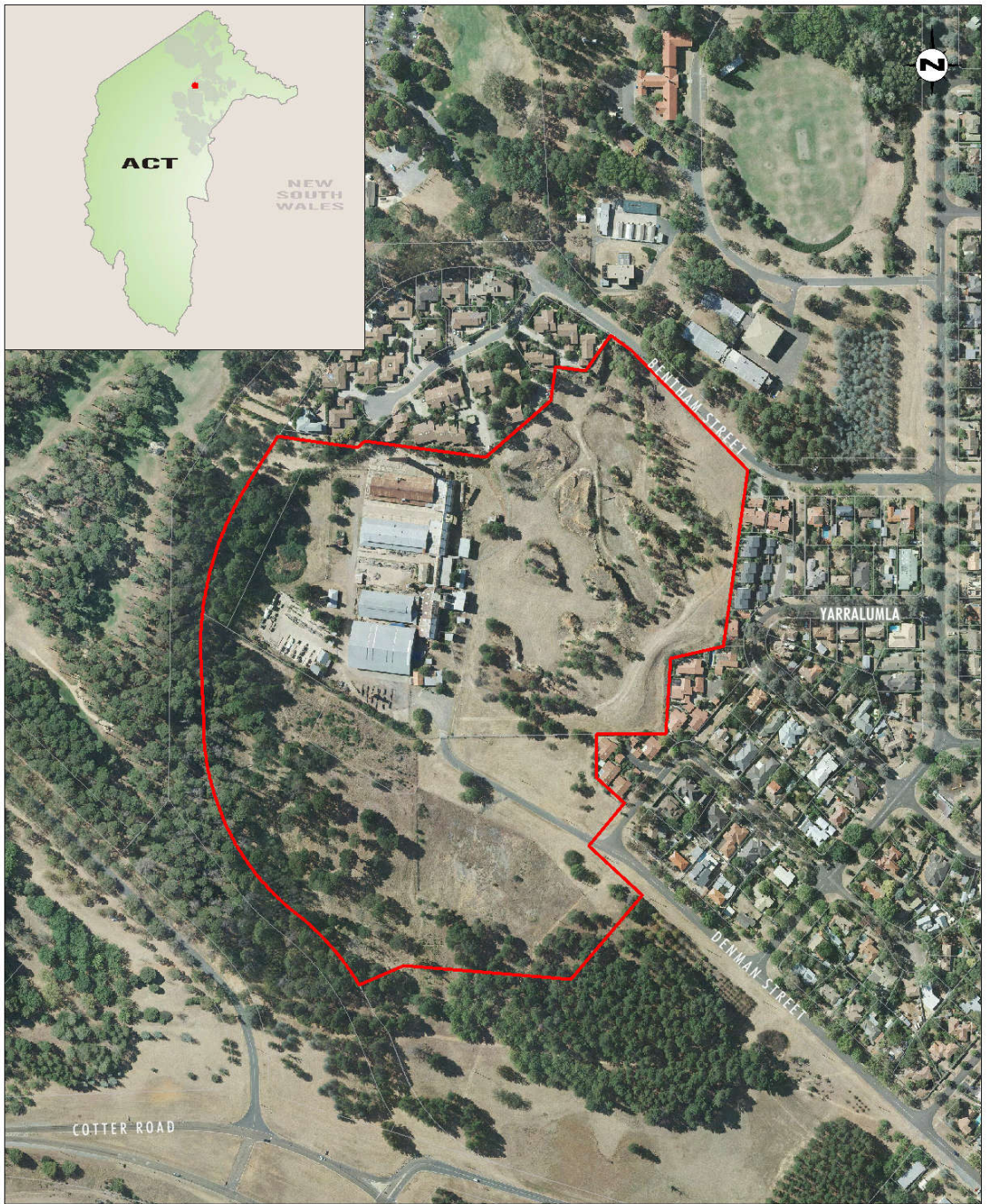
The survey identified a range of vegetation types which were in general, highly modified and dominated by exotic species.

The areas of the quarry and historic landfill were highly modified from cut and fill, and did not contain any natural features, support native vegetation or threatened species habitat.

The areas containing landscape tree plantings contained an exotic understorey. While the trees may provide potential opportunistic shelter for wide ranging species such as birds, they do not represent habitat for threatened species. The exotic composition of the plantings provides limited opportunities for most native species and is unlikely to represent an area of any importance to any listed species.

The areas of exotic pasture surrounding the entrance road to the site are dominated by Chilean needlegrass, a noxious weed. Recent studies have shown that GSM, which was previously understood to be a native grassland specialist, also occurs within Chilean needlegrass, due to a lifecycle dependence on C3 grasses (cool season or yearlong growing grasses) (Richter *et al.*, 2010¹).

¹ Richter A, Osbourne W & Tragoult M (2010) *Dietary specialisation in the Golden Sun Moth *Synemon plana* – the key to understanding habitat requirements and site rehabilitation for this critically endangered species*, final report to Biodiversity and Programs Branch, Department of Sustainability and Environment (Victoria).



Legend

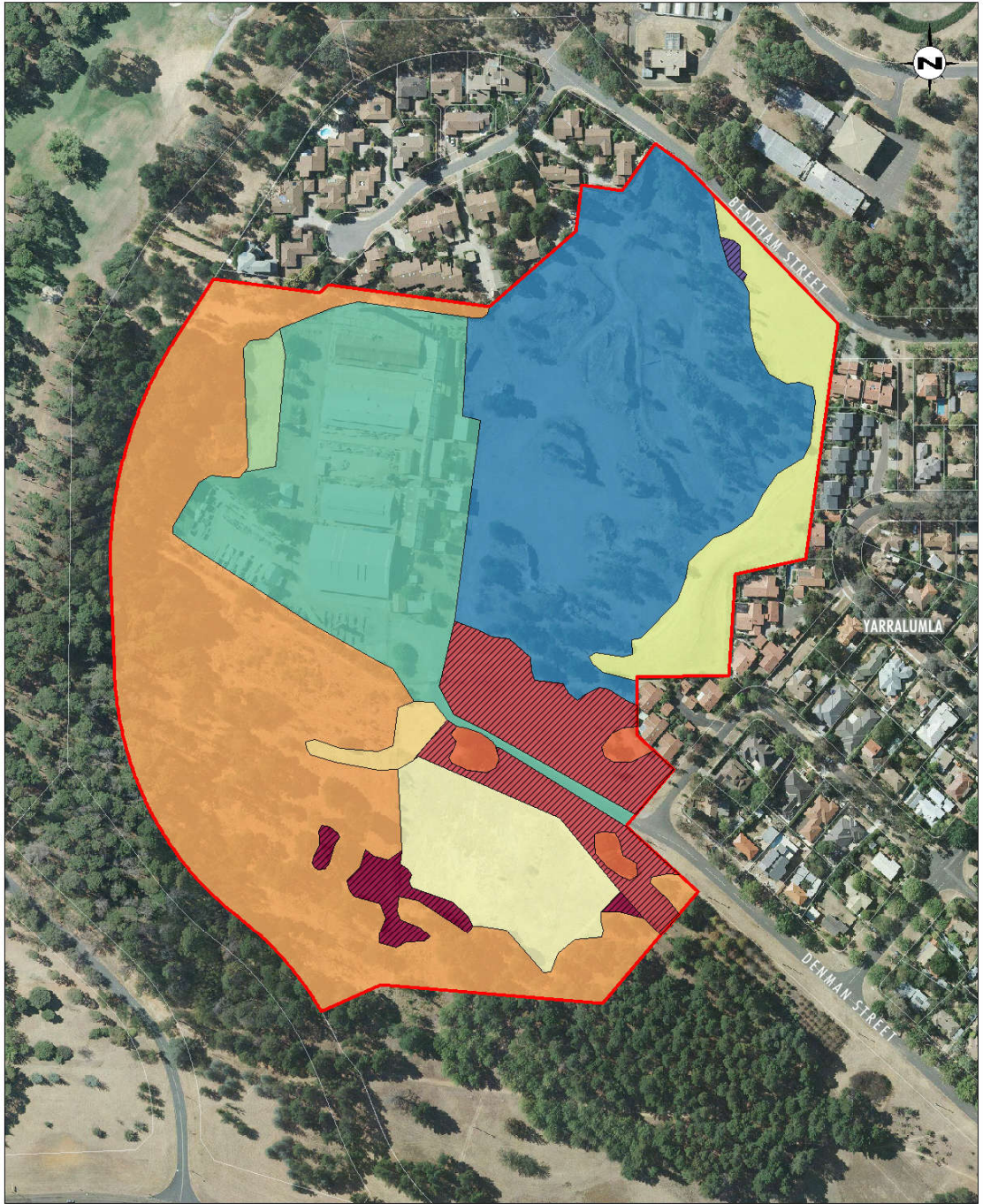
- Project Area
- ACT Cadastre

Figure 1 – Project Area

Table 1 provides a description of each vegetation type observed on site. This table should be read in conjunction with **Figure 2** which illustrates the distribution of vegetation, identified by the 'Code' field below.

Table 1 – Results of Vegetation Survey

Code	Definition	Potential GSM Habitat?	Description	Approximate Area (ha)
A	Exotic pasture	✓	Dominated by Chilean needlegrass (<i>Nassella neesiana</i>) with patches of African lovegrass (<i>Eragrostis curvula</i>). Dense regrowth has reduced inter-tussock spaces, rendering this area low quality potential GSM habitat.	0.2
As	Exotic pasture, slashed	✓	Dominated by Chilean needlegrass (<i>Nassella neesiana</i>) with patches of African lovegrass (<i>Eragrostis curvula</i>). This area is frequently slashed, with inter-tussock spaces suitable for GSM larval hatchings. Potential to be low-moderate quality GSM habitat.	1.0
B	Planted deciduous exotic trees, exotic understorey	✗	Primarily Algerian Oak (<i>Quercus canariensis</i>), with an exotic understorey. Some Chilean needlegrass beneath, but summer shading renders this area not suitable for GSM.	0.15
C	Planted <i>Pinus radiata</i> , exotic understorey	✗	Planted <i>Pinus radiata</i> , with numerous deciduous exotic trees, blackberry (<i>Rubus fruticosus</i> agg.), Cotoneaster (<i>Cotoneaster</i> spp.) and an exotic understorey dominated by phalaris (<i>Phalaris aquatica</i>), prairie grass (<i>Bromus catharticus</i>), and wild oats (<i>Avena</i> spp.). Infrequent occurrences of Chilean needlegrass and serrated tussock (<i>Nassella trichotoma</i>).	5.0
CLR	Cleared	✗	Cleared.	0.1
D	Exotic pasture, former asphalt area	✗	Former asphalt area. Fractured surface is dominated by numerous exotic forbs including small burnet (<i>Sanguisorba minor</i>) and narrow-leaf clover (<i>Trifolium angustifolium</i>), with exotic grasses including African lovegrass and wild oats. Minor native component of red-leg grass (<i>Bothriochloa macra</i>).	1.0
Ex	Exotic pasture	✗	Exotic pasture dominated by perennial ryegrass (<i>Lolium perenne</i>), ribwort plantain (<i>Plantago lanceolata</i>), prairie grass, African lovegrass, red-flowered mallow (<i>Modiola caroliniana</i>), clustered clover (<i>Trifolium glomeratum</i>), haresfoot clover (<i>Trifolium arvense</i>), barley grass (<i>Hordeum leporinum</i>), fescue (<i>Festuca</i> spp.), rats-tail fescue (<i>Vulpia myuros</i>), buchan weed (<i>Hirschfeldia incana</i>), wild sage (<i>salvia verbenaca</i>), paspalum (<i>Paspalum dilatatum</i>) and wild oats. Occasional native elements including red-leg grass.	1.0
F	Landfill	✗	Filled area. Not accessible through locked gate, visual assessment considers area to be dominated by annual exotic grasses. Not GSM habitat due to lack of structured soil profile.	0.2
I	Infrastructure	✗	Brickworks site and associated infrastructure including roads and buildings.	3.0
Q	Quarry site	✗	Dominated by planted radiata pine, and quarry pits regenerated with exotic pastures in line with area 'D'.	4.5
R	<i>Rytidosperma</i> spp. native grassland	✓	Small patch dominated by wallaby grass (<i>Rytidosperma</i> spp.), low likelihood of GSM occurrence.	0.01



Legend

- Project Area
- Potential Golden Sun Moth Habitat

Vegetation Codes

- | | | | |
|--|---|--|--|
| <ul style="list-style-type: none"> A As B | <ul style="list-style-type: none"> C CLR D | <ul style="list-style-type: none"> Ex F I | <ul style="list-style-type: none"> Q R |
|--|---|--|--|

Figure 2 – Vegetation Map

4.0 Discussion

The aim of the project was to identify whether any ecological triggers under the PD Act or EPBC Act would apply to development of the Project Area. The following **Table 2** provides a summary of the applicable legislation.

Table 2 – Legislative Triggers

Legislation	Trigger	Applicable?	Discussion
EPBC Act	Impact to a matter of national environmental significance	Potential habitat for golden sun moth, a critically endangered invertebrate.	The identified potential habitat is a disturbed grassland, dominated by the noxious weed Chilean needlegrass. If the area is found to support golden sun moth, it would be considered an isolated small patch. Quality is likely to be moderate at best, however this would need to be assessed as a function of GSM abundance and noxious weed abundance.
PD Act	Impact on threatened species or ecological communities.	Potential habitat for golden sun moth, a critically endangered invertebrate.	The presence or absence of the species should be verified in order to determine applicability of the Acts.
PD Act	The clearing of more than 0.5ha of native vegetation in a native vegetation area	No.	There is not >0.5 hectares of native vegetation on the site.

5.0 Recommendations

It is recommended that a targeted golden sun moth survey is completed in the late 2015 GSM flying season (any time from late spring to early summer depending on seasonal conditions) to establish whether the species is present within the site. This would be a relatively simple exercise, as the area of habitat is small.

The methodology for golden sun moth surveys is as follows:

As per the EPBC Act Golden Sun Moth survey guidelines (DEWHA 2009²), survey is required to be undertaken over a period of four (4) non-consecutive days, with survey days targeted based on suitable climatic conditions (as follows):

- a warm to hot day (above 20°C by 10:00 am);
- the warmest part the day (i.e. between 10:00 am and 2:00 pm);
- clear or mostly cloudless sky;
- still or relatively still wind conditions during the survey period;
- ≥ 2 days since rain; and
- staggered to increase the likelihood of detection given the short adult life span (1-4 days between surveys).

The results of this survey will confirm species presence or absence, which will inform the requirement for further assessment or approvals.

References

DEWHA (2009) *Significant impact guidelines for the critically endangered golden sun moth (Synemon plana)*, Department of Environment, Water, Heritage and the Arts (Canberra).

Richter A, Osbourne W & Tragoult M (2010) *Dietary specialisation in the Golden Sun Moth Synemon plana – the key to understanding habitat requirements and site rehabilitation for this critically endangered species*, final report to Biodiversity and

² DEWHA (2009) *Significant impact guidelines for the critically endangered golden sun moth (Synemon plana)*, Department of Environment, Water, Heritage and the Arts (Canberra).