

# **Attachment AE**

GSM Surveys Briefing Note



## Briefing Note

**To:** Doma Group  
**cc:** David Carey  
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**Date:** 11 February 2020  
**Subject:** Golden Sun Moth Surveys, Canberra Brickworks

### 1.0 Introduction

The purpose of this briefing note is to provide the results of the 2019 golden sun moth (*Synemon plana*) habitat evaluation and the targeted survey at the Canberra Brickworks Precinct (Study Area) undertaken by Umwelt Environmental and Social Consultants (Umwelt).

This investigation was undertaken to confirm the continued presence and determine the current extent of golden sun moth within the Study Area.

### 2.0 Methodology

On 31 October 2019, an Umwelt ecologist evaluated the golden sun moth habitat identified by Biosis (2017) at the Study Area. The Study Area was surveyed on foot to assess the extent and quality of the golden sun moth habitat.

A program of targeted golden sun moth surveys was then undertaken to confirm the extent of golden sun moth within identified habitat. As per the survey guidelines for the species under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), surveys were undertaken in the following conditions:

- warm to hot day (i.e. above 20 degrees Celsius by 10.00 am) with a clear or mostly cloudless sky
- between 10.00am and 2.00pm
- still or relatively still wind conditions during the survey period
- at least two days since rain.

Surveys were undertaken in the previously identified golden sun moth habitat, which has been described as an exotic pasture dominated by Chilean needle grass (*Nassella neesiana*) (Biosis 2017), in addition to potential areas of habitat identified in the habitat assessment (**Section 3**).

The targeted survey involved placing seven 100m (approximate) transects in the golden sun moth habitat. The ecologist walked along the transect and recorded all golden sun moths. Incidental records and female golden sun moth were recorded independently to the transects.

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### 3.0 Habitat Assessment

The vegetation assessment confirmed that golden sun moth habitat occurs in the Study Area (**Figure 1**). There was a small reduction in the extent of the golden sun moth feed species, Chilean needle grass, previously mapped immediately north and south of Denham Street (i.e. Zone 1 and Zone 2) of the Study Area due to the expansion of the non-feed species, African love grass (*Eragrostis curvula*).

Golden sun moth habitat has however expanded in a small isolated patch of Chilean needle grass to the south of Denman Street (Zone 3). The mixed golden sun moth feed species (i.e. native speargrass *Austrostipa* sp. and Chilean needle grass) to the south of Denham Street has also expanded (i.e. Zone 4).

A total area of 1.58 hectares of low-quality golden sun moth habitat was identified within the Study Area (see Figure 1). This is an increase of approximately 0.34 hectares since the initial Biosis (2017) investigation was undertaken (see Figure 2).

Error! Reference source not found. details the golden sun moth habitat extent identified within the Study Area from 2017 and 2019. It is noted that the Umwelt (2018) investigation only covered part of the current Study Area, as its purpose was to assess impacts for the proposed Dudley Street access road project.

**Figure 2** demonstrates the changes in the golden sun moth habitat from 2017 and 2019 within the Study Area.

**Table 3-1 Golden sun moth habitat comparison**

Zone	Description	Biosis (2017) (ha)	Umwelt (2018) (ha)	Umwelt (2019) (ha)
Zone 1	Exotic grassland – Chilean needle grass-dominated	0.70	-	0.69
Zone 2	Exotic grassland – Chilean needle grass-dominated	0.37	-	0.32
Zone 3	Exotic grassland – Chilean needle grass-dominated	0.17	-	0.24
Zone 4	Exotic grassland – mixed GSM feed species (additional areas not mapped by Biosis)	-	0.30	0.33
<b>TOTAL</b>		1.24	0.30	1.58



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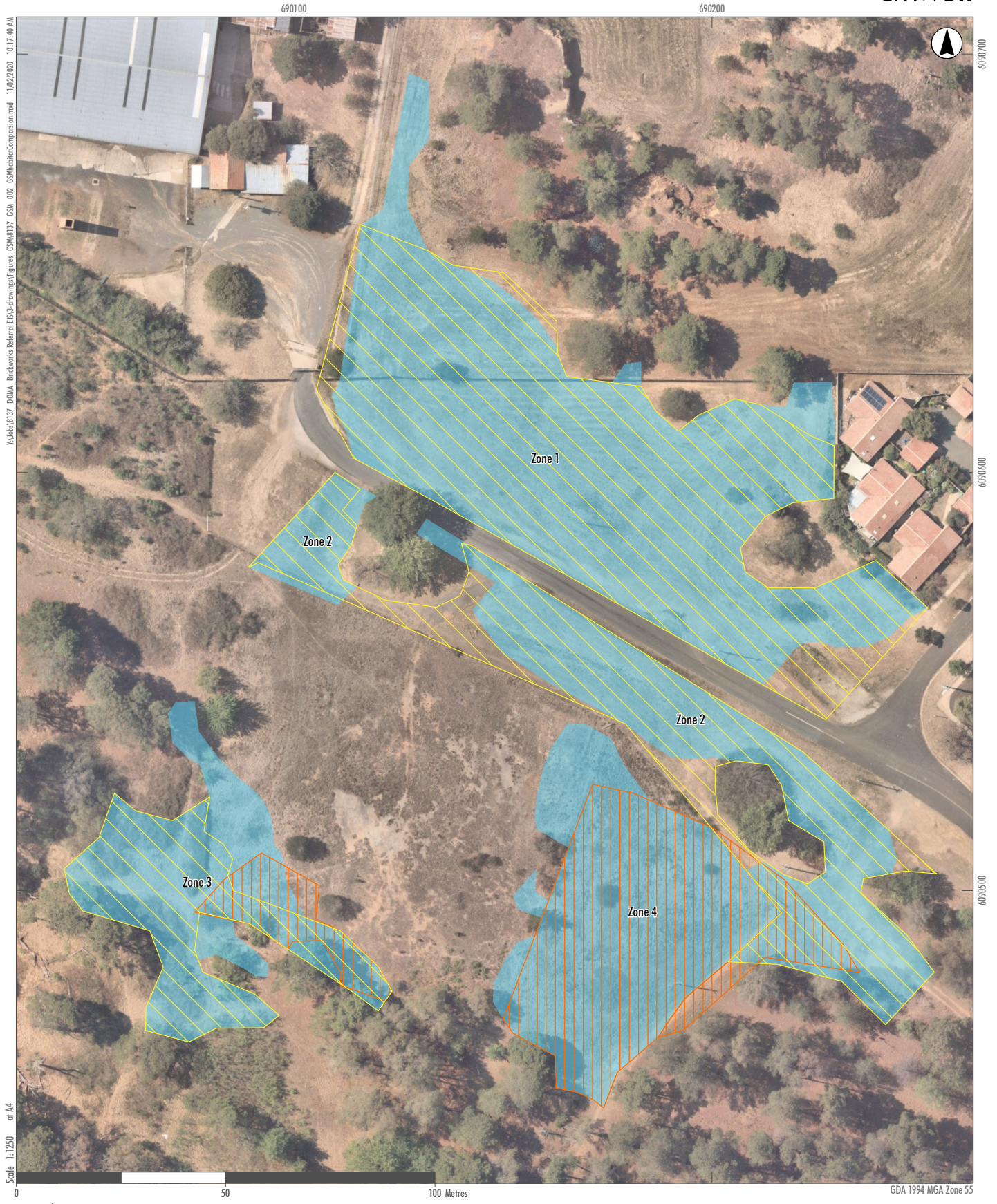
Scale 1:1250 or A4

**Legend**

- GSM Habitat
- One Male GSM
- 2 Male GSM
- 5 Male GSM
- 7 Male GSM
- 10 Male GSM
- 14 Male GSM
- 16 Male GSM
- 30 Male GSM

**FIGURE 1**

**Golden Sun Moth Habitat and Records**



- Legend**
- GSM Habitat (Umwelt 2019)
  - GSM Habitat (Umwelt 2018)
  - GSM Habitat (Biosis 2017)

**FIGURE 2**

**Comparison between 2017 and 2019  
Golden Sun Moth Habitat**

#### 4.0 Survey Results

Golden sun moth surveys were undertaken on three occasions throughout late October and November 2019. All surveys were undertaken under ideal conditions, and are compliant with the EPBC Survey Guidelines.

A total of 86 male golden sun moths were recorded during targeted surveys (**Figure 1**). One male golden sun moth was observed on the 31 October during the habitat assessment before the targeted survey. No female golden sun moths were observed.

A summary of the survey conditions and results is provided in **Table 4-1**.

**Table 4-1 Golden sun moth results and weather conditions**

Survey Timing	Conditions	Golden Sun Moth Observed
31 October 2019 10.21 am – 11.32 am	<b>Cloud cover:</b> fine <b>Wind:</b> Still (less than 11 kilometres per hour) <b>Temperature:</b> 23 – 27 degrees Celsius	4
14 November 2019 1.41pm – 2.06pm	<b>Cloud cover:</b> fine <b>Wind:</b> Gentle - moderate (between 11 – 28 kilometres per hour) <b>Temperature:</b> 25 – 25 degrees Celsius	39
15 November 2019* 1.01pm – 1.03pm	<b>Cloud cover:</b> fine to partly cloudy <b>Wind:</b> Fresh (between 29 – 38 km per hour) <b>Temperature:</b> 24 degrees Celsius	2
29 November 2019 11.30 am – 11.58 am	<b>Cloud cover:</b> fine to partly cloudy <b>Wind:</b> light (less than 11 km per hour) <b>Temperature:</b> 29 degrees Celsius	41
<b>Total GSM</b>		<b>86</b>

\*Due to access, transect 1 could not be surveyed on 14 November and was instead completed on 15 November.

Golden sun moths were observed within all areas identified as potential golden sun moth habitat in **Section 3**.

#### 5.0 Conclusion

The habitat assessment confirms the presence of golden sun moth habitat within the Chilean needle grass pasture previously described by Biosis (2017).

The extent of golden sun moth habitat has:

- Reduced in Zone 1 and 2 because of the encroachment of African love grass
- Increased in Zone 3 and Zone 4 because of increased extent of Chilean needle grass.

The targeted surveys confirm the presence of golden sun moth within the Chilean needle grass exotic grassland, as well as within mixed native and exotic grassland areas within the Study Area. A total of 1.58 hectares of habitat identified. All surveys were undertaken in ideal conditions and are considered as valid surveys.

## 6.0 References

Biosis (2017), Targeted Survey for the Golden Sun Moth at Yarralumla Brickworks (Blocks 1,7 and 20, Section 102, Yarralumla). Letter for Doma Group.

Umwelt (2018), Offset Strategy: Dudley Street Upgrade and Canberra Brickworks Precinct Access Road Construction. Prepared for Chief Minister, Treasury and Economic Development Directorate.