

**BELLCHAMBERS PROPERTY,
SHELFORD**

GOLDEN SUN MOTH TARGETED SURVEY

Cromwell Property Group



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1. INTRODUCTION

The Bellchambers property comprises 150 hectares of private land located in Shelford, approximately 36 kilometres south of Ballarat in western Victoria. It is bordered by Gundies Road to the north and Shelford – Mount Mercer Road to the west. The Leigh River forms the eastern border of the site. It lies within the Victorian Volcanic Plain bioregion and within the Corangamite catchment.

A portion of the property is to be used as an offset site, for which a detailed offset management plan has been prepared and submitted as part of a planning application to the Commonwealth Department of Environment and Energy (DoEE) for an industrial subdivision at 33 Jordan Close, Altona. The offset plan (BL&A 2016) provides the full detail of the proposed offset and should be read in conjunction with this report.

As detailed in the offset plan (BL&A 2016), a 54.16 hectare area of the Bellchambers property (herein referred to as the ‘Bellchambers offset site’ and shown in Figure 1), is being used to achieve relevant offsets for the following values:

- State offsets:
 - *Heavier-soils* Plains Grassland (132_61) – 32.14 hectares
- Commonwealth (EPBC Act) offsets:
 - Natural Temperate Grassland of the Victorian Volcanic Plain – 54.16 hectares; and
 - Golden Sun Moth habitat – 54.16 hectares.

Prior to this assessment, the most recent observations of Golden Sun Moth were made at the Bellchambers offset site during a visit by Libby Woodward from Trust for Nature (Woodward 2009) on 18th November 2009. As such, the aim of the current assessment was to re-survey for Golden Sun Moth to confirm the sustained presence of the species in the Bellchambers offset site.

2. METHODS

To re-confirm the presence of Golden Sun Moth within the Bellchambers offset site, a transect survey was conducted by an experienced ecologist from BL&A on the 19th December 2016. The survey was conducted with reference to state and Commonwealth survey guidelines, specifically including the following.

- The survey was timed to coincide with the Golden Sun Moth activity season, i.e. November to January.
- The survey was undertaken during suitable weather conditions, including the following:
 - Warm to hot weather (above 20 °C by 10 am);
 - During the warmest part of the day;
 - Clear to mostly cloudless sky;
 - At least two days since rain.
- The survey was undertaken when male moths were flying elsewhere in the broader region. This was determined by visiting a reference site known to support a population of the species on the day of the survey of the study area.
- The survey was undertaken in the warmest part of the day.

The aim of the survey was to re-confirm the presence of Golden Sun Moth as previously recorded in 2009. The area which was covered by the survey is shown in Figure 1. The survey was undertaken by undertaking visual searches for Golden Sun Moth along transects spaced 50 metres apart. Initial Golden Sun Moths observed were captured to confirm identification and their approximate locations noted.

Limitations

Where practicable, all efforts are made to schedule GSM field surveys in optimal weather conditions. The survey undertaken at the Bellchambers offset site on 19th December 2016 was undertaken in suitably hot conditions, when males were recorded flying at known reference sites closer to Melbourne.

Wind strength was noted as strong during the survey, which is known to be unfavourable conditions to the Golden Sun Moth. Though given the hot conditions combined with Golden Sun Moth having been recorded at reference sites on the same day, it is considered that the survey was undertaken at a suitable time to detect the species.

3. RESULTS

Golden Sun Moth was detected in the study area during the survey, for which the weather conditions are provided in Table 1. Golden Sun Moth survey results are provided in Table 2.

Table 1: Weather conditions

Date	Study area						Reference Site
	Cloud cover (%)	Wind strength	Wind direction	Survey Start time	Survey End time	Temp range (°C)	GSM Recorded at reference sites
19/12/2016	10	Strong	W	11:50	13:40	26 to 30	260 O'Herns Rd, Epping Barry Road, Broadmeadows William Angliss Grassland Reserve, Laverton North

Table 2: Golden Sun Moth survey results

Date	Transect separation distance (m)	Survey Start time	Survey End time	Number of Golden Sun Moths recorded	Notes
19/12/2016	50m	11:50	13:40	150 *	Male Golden Sun Moths recorded flying over vegetation.

* approximation








Approximately 150 Golden Sun Moth were recorded during the survey. An approximation was provided only due to the large number of Golden Sun Moths seen flying at the one time, and the strong wind conditions that made precise counts difficult. Golden Sun Moths were mostly recorded in the north western portion of Habitat Zone Bell D, with one Golden Sun Moth also being recorded in the small section of Habitat Zone Bell B that falls within the offset site area.

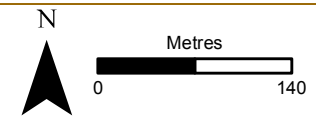
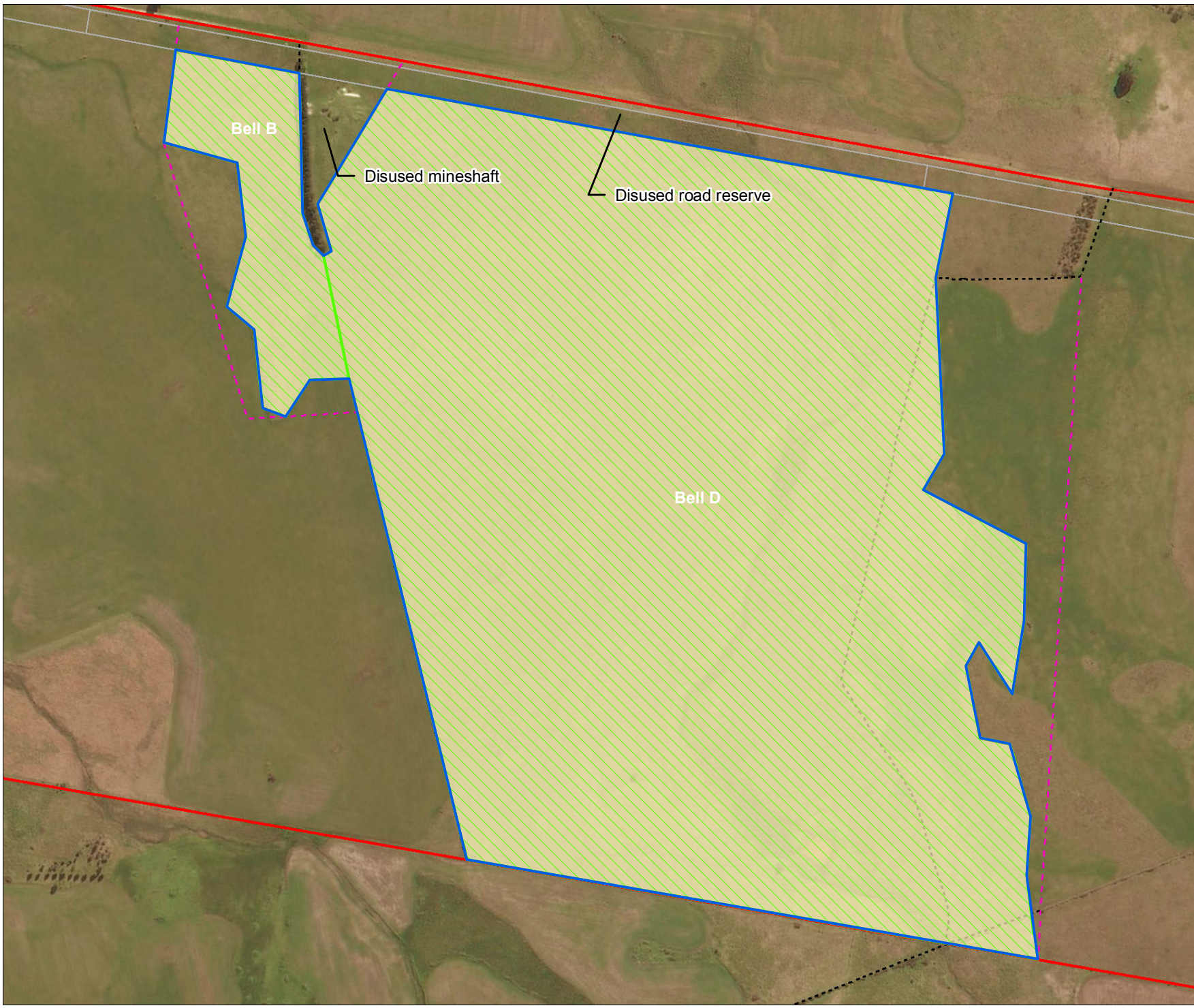
Based on the contiguous nature of the habitat throughout the Bellchambers offset site, it is considered that the entire area (54.16 hectares) supports habitat for the Golden Sun Moth.

Figure 1: Bellchambers offset site - EPBC 2009/5255

Project: 33 Jordan Close, Altona
Client: Cromwell Property Group

Legend

-  Area surveyed
-  Bellchambers offset site
-  Heavier-soils Plains Grassland (EVC 132_61)
-  NTGVVP (EPBC Act Offset Guide Start Condition Value 6) and Golden Sun Moth habitat (EPBC Act Offset Guide Start Condition Value 8)
-  Cadastre
- Fences**
-  Existing fences
-  Proposed fences



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4. REFERENCES

Brett Lane and Associates (BL&A) 2016, 33 Jordan Close, Altona – Offset Plan, BL&A Report 9049 (12.8), Consultant Report prepared for Cromwell Property Group, Brett Lane and Associates, Hawthorn East, Victoria.

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