APPENDIX I

EcoEdge Targeted Orchid Survey 2022

Memorandum

Client:	LUNDSTROM ENVIRONMENTAL CONSULTANTS Pty Ltd for Carbone Bros
Attention:	Vanessa Pez Senior Environmental Consultant vanessa@lundstrom-environmental.com.au
From:	Ecoedge Environmental Services Debbie Brace enquiries@ecoedge.com.au 0484 771 825
Date:	29 November 2022
Subject:	S149 Targeted threatened flora survey Lot 5 Wellesley Road, Wellesley, WA.

1 Introduction

Lundstrom Environmental engaged Ecoedge Environmental Services (Ecoedge) to undertake a targeted flora survey of an area of approximately 4 ha of Lot 5 Wellesley Road, Wellesley, Western Australia. The area was surveyed in 2019 however there is a requirement from the Federal Department of Climate Change, Energy, Environment and Water (DCCEEW) to undertake an additional targeted orchid survey.

The DCCEEW believes the application area is likely to comprise of suitable habitat for *Diuris* species, *Drakaea* species and *Caladenia* species.

1.1 Methods

The survey was undertaken by R. Smith (over 20 years' experience, licence number FT61000473) and D. Brace (3 years' experience, licence FT61000764), on the 16 September and the 27 October 2022. Both botanists have undertaken targeted *Drakaea* surveys in the current survey season. The targeted survey consisted of transects approximately 10-30m wide with potential habitat searched more thoroughly.

A known population of *Drakaea micrantha* was visited on the day of the survey. This location is approximately 1.5km from the Carbone site. These plants were still visible and flowering. Ecoedge can therefore confirm this survey was conducted at the optimal time in the season to see these Drakaea plants in flower.

Drakaea elastica is found in a similar habitat to *D. glyptodon*, and *D. micrantha* and both botanists

are familiar with the differences in species, including the microhabitat the *Drakaea elastica* prefer.

The species targeted during the first survey on the 16 September include (but not limited to) as this is the ideal timing for when the species are flowering and therefore can be best identified.

- *Drakaea elastica*. Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid and
- *Drakaea micrantha*. Dwarf Hammer-orchid.

The survey area was re-visited again on the 27 October 2022, by D. Brace, to search for later flowering significant flora.

The following orchids were all targeted

- Carbunup King Spider Orchid (*Caladenia procera)*
- Tall Donkey Orchid (*Diuris drummondii*)
- Dwarf Bee-orchid (*Diuris micrantha*)

The survey was consistent with the *Draft survey guidelines for Australia's threatened orchids*. Guidelines for detecting orchids listed as 'Threatened' under the *Environment Protection and Biodiversity Conservation Act 1999.*

2 Results

Trackfiles of the survey are shown in **Figure 1.**

2.1 Vegetation condition

The vegetation condition within the survey area is in 'Degraded' condition.

According to the Keighery 1994 scale the vegetation condition is Degraded "Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing".

2.2 Vegetation type

As previously described by Plant Ecology Consulting (2020) the entire vegetation unit type is *Agonis flexuosa* Woodlands.

> Woodland of *Agonis flexuosa* with *Eucalyptus marginata* over shrubland of *Zanthorrhoea gracilis*, *Macrozamia riedlei* and *Hibberita hypericoides* over a Herbland of *Dasypogon bromeliifolius* in grey sands.

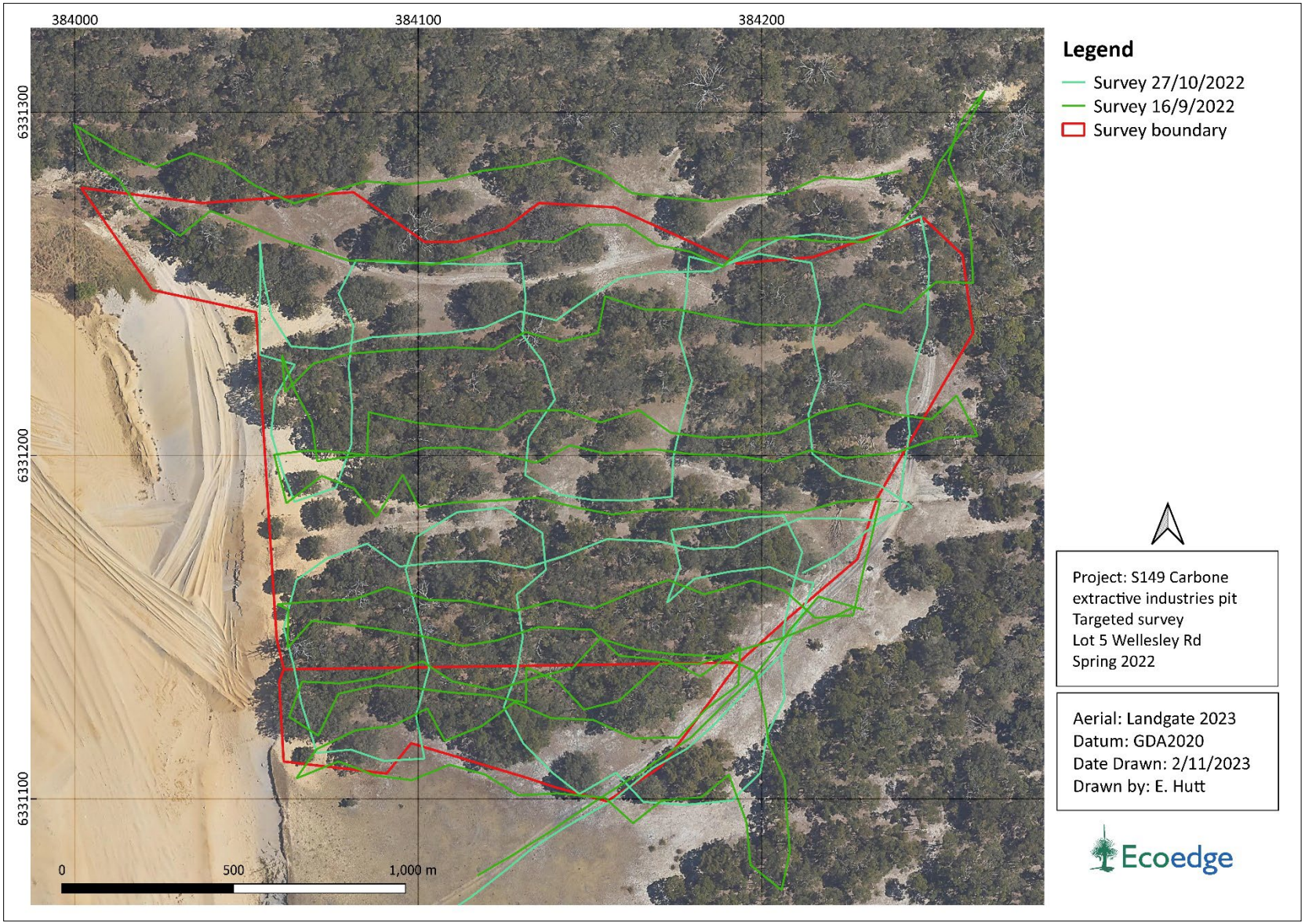

Figure 1. Trackfiles for targeted survey.

2.3 Significant flora

No significant flora was found on site.

Likelihood of occurrence post survey is shown in the table below (**Table 1**). The post survey rationale is presented in **Appendix 1**.

Table 1. Post survey likelihood of occurrence.

Species	Likelihood	Reason
Caladenia procera	Not found and unlikely to occur	No suitable habitat (U1)
Drakaea elastica	Not found and unlikely to occur	No suitable habitat (U3)
Drakaea micrantha	Not found and unlikely to occur	No suitable habitat (U3)
Diuris micrantha	Not found and unlikely to occur	No suitable habitat (U1)
Diuris drummondii	Not found and unlikely to occur	No suitable habitat, too dry ie no wetlands areas (U1)

Unlikely: Known or predicted to occur within ten km, but no suitable habitat was found or predicted to occur within the survey area.

The taxon was not found and is unlikely to be present for one or more of the following reasons:

U1. No suitable habitat was observed, and the taxon is known to be restricted to a narrow and clearly defined habitat type.

U2. Suitable or potential habitat was present and appropriately searched, but the taxon was not observed.

U3. Suitable habitat present, but these areas were too degraded for the taxon to occur, for example, due to weed invasion and/or clearing.

The following orchid species were found during the survey, neither of which are Threatened or Priority flora. *Caladenia flava* subsp. *flava* and *C. latifolia* (see below, **Figure 2**).

Figure 2. No Threatened or Priority orchids found on site, only common forms of *Caladenia* species.

3 References

Plant Ecology Consulting (2022). Lot 5 Wellesley Road, Wellesley Flora and Vegetation Survey. Unpublished report for Lundstrom Environmental Consultant.

Appendix 1. Threatened and Priority flora Likelihood of occurrence assessment methodology.

Rating	Presurvey rationale	Post survey rationale
Recorded		Taxon was or has been recorded in the survey area.
Likely	Known to occur within one kilometre (km) of the survey area with suitable habitat known or predicted to occur within the survey area.	The taxon is known to occur within one km of the survey area and very suitable habitat was present, but the taxon was not observed for one of the following reasons. **L1.** The taxon was dormant at the time of survey and could therefore not be located. **L2.** The habitat was compromised, for example due to a recent fire. **L3.** The survey area is challenging to survey. The taxon is non- descript and difficult to find because, for example, it occurs in large areas of rocky granite outcrops, or within an expanse of open water.
Possible	Known to occur within a five-ten km of the survey area with suitable habitat known or predicted to occur within the survey area.	The taxon is known from within a five to ten km radius of the survey area, and suitable habitat for the species was present, but despite a thorough search being carried out, the species was not observed. The taxon may however be present for any of the following reasons. **P1.** The taxon was dormant at the time of survey and could therefore not be located. **P2.** The habitat was compromised, for example, due to a recent fire. **P3.** The survey area is challenging to survey. The taxon is non- descript and difficult to find because, for example, it occurs in large areas of rocky granite outcrops, or within an expanse of open water.
Unlikely	Known or predicted to occur within ten km, but no suitable habitat is known or predicted to occur within the survey area.	The taxon was not found and is unlikely to be present for one or more of the following reasons: **U1.** No suitable habitat was observed, and the taxon is known to be restricted to a narrow and clearly defined habitat type. **U2.** Suitable or potential habitat was present and appropriately searched, but the taxon was not observed. **U3.** Suitable habitat present, but these areas were too degraded for the taxon to occur, for example, due to weed invasion and/or clearing.