

Memorandum Targeted Rare Flora Survey for *Diuris drummondii* (Ecoedge, 2019c)

Memorandum

Client:	Bunbury Outer Ring Road (BORR) Team (GHD)
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Project:	Target survey for <i>Diuris drummondii</i> within and adjacent to the BORR South Referral Area

Introduction

The Bunbury Outer Ring Road (BORR) Team required a targeted survey for the State and Federally Protected *Diuris drummondii* (Tall Donkey Orchid), in potential suitable habitat in and adjacent to the BORR South Referral Area. The results of the survey will be used to inform State and Federal environmental approval processes for this project.

Diuris drummondii is listed as Vulnerable under both the State *Biodiversity Conservation Act 2016* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. *D. drummondii* is found in low-lying depressions in peaty and sandy clay swamps (DEWHA, 2008). The optimum survey time for the orchid is from November to January when the tall (up to 1 m high) yellow-flowering orchid is in bloom **Figure 1**.



Figure 1. *Diuris drummondii* photographed during an Ecoedge survey in Capel, 2018.

Potential *D. drummondii* habitat in proximity to the BORR South Referral Corridor was identified by the BORR Team and Ecoedge botanists based on:

- Stated habitat requirements and preferences (DEWHA, 2008)
- Direct observations of the habitat of local *D. drummondii* populations, and from previous *D. drummondii* targeted surveys, for example, Ecoedge, 2019.

These potential habitats and therefore the survey locations are shown in **Figure 2**, namely:

- Centenary Road reserve to the west of Bussell Highway
- Centenary Road reserve – eastern end (constructed road near prison)
- Lot 160 on Plan 300292
- Lot 5 on Plan 43322.

Results

The targeted survey for *D. drummondii* was conducted by Ecoedge's senior botanist Russell Smith (License number SL 011843) on 30 November 2019. The potential habitat areas, and adjacent areas, were searched for an eight (8) hour period (**Figure 2**).

The timing of the survey was determined following advice from the Department of Biodiversity Conservation and Attractions (DBCA) South West Region Offices that local populations of the orchid were in flower.

There were no *D. drummondii* orchids observed despite extensive surveillance over the potential habitat areas.

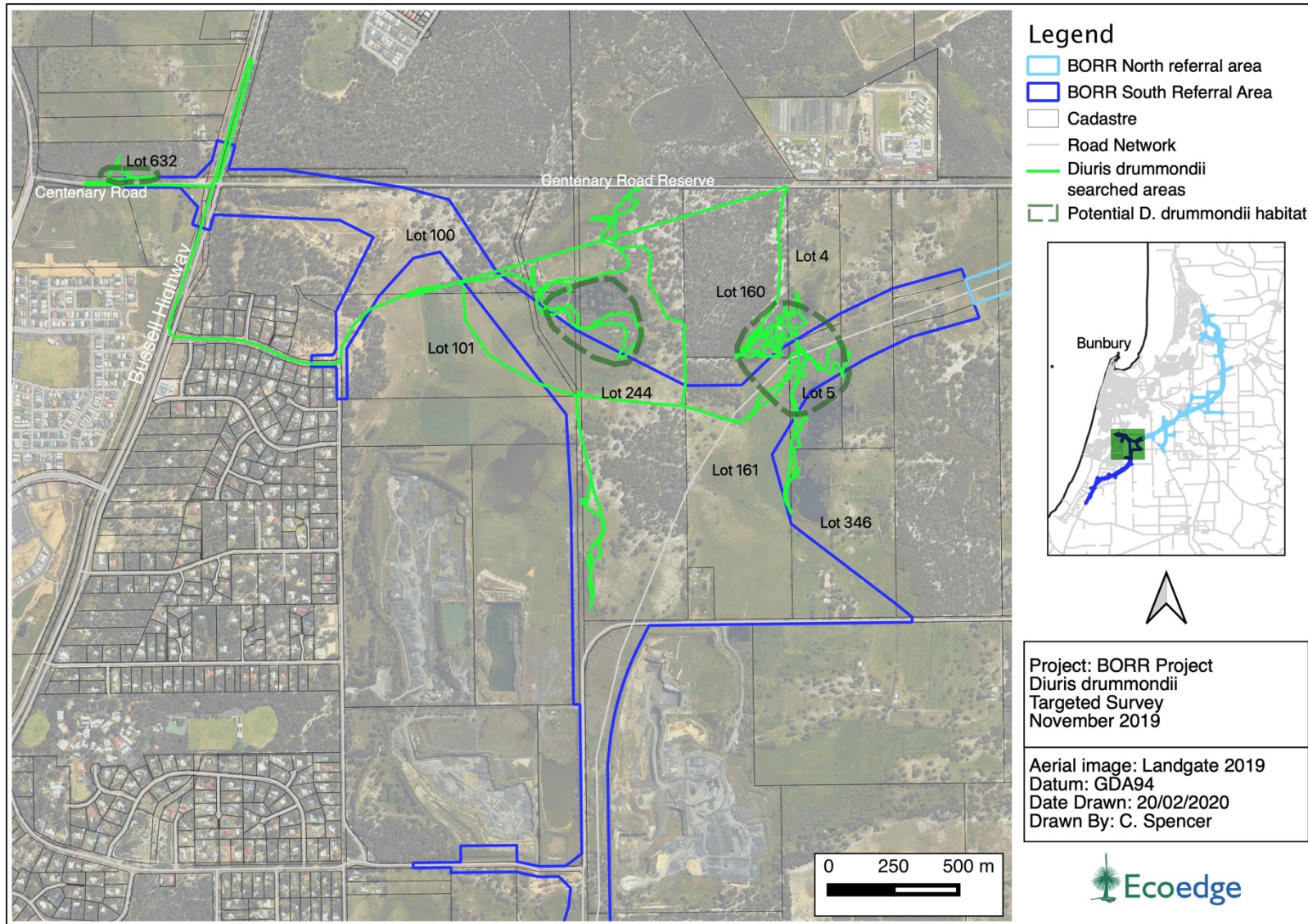


Figure 2. Potential *Diuris drummondii* habitat, showing targeted search of the Survey Area.

Discussion

Low lying, ephemerally inundated areas on clay and peaty sand substrates within the potential habitat areas were surveyed for the vulnerable *D. drummondii* better known as the Tall Donkey Orchid. Despite an extensive 8-hour, search during the optimal survey time, no orchids were found. The wetland areas surveyed were identified as being suitable habitat for the species.

The winter and spring of 2019 were significantly drier than average, which may have influenced the emergence and growth of *D. drummondii*. Total rainfall at Bunbury from May to October 2019, inclusive, was 486 mm compared to the average for this period of 605 mm. The start of the winter period was particularly dry, with only 35 mm falling in May compared to the average of 96 mm.

The potential habitat on Lots 4 and 5 had been searched twice previously in a wetter year (Ecoedge, 2017) without any plants being found, and together with the result of the 2019 survey, it can be concluded that it is very unlikely that *D. drummondii* occurs within these Lots (which are subject to livestock grazing). There were parts of Lot 5 which could not be accessed because of the depth of water. These areas are unlikely to be support the growth of *D. drummondii* because the area is mostly grazed pasture.

The wetland in the south-east corner of Lot 160 has likely habitat for *D. drummondii* (**Figure 3**), it has very good to excellent condition vegetation, but despite an intensive search for the species here, it was not located. The large wetland at the boundaries of Lots 100, 101 and 244 also contains suitable habitat (in places) for *D. drummondii* though most of this is outside the Referral area. No orchids were found here either.

The wetland edge that extends from Lot 346 into the eastern part of Lot 161 is probably too disturbed by livestock grazing to be suitable habitat for *D. drummondii*. The small wetlands on the western boundary of Lot 244 (which are inside the Referral area) were also probably too disturbed by livestock grazing to be suitable habitat for the species, resulting in no orchids found.



Figure 3 Potential habitat searched on Lot 160



Figure 4 Potential habitat searched on Lot 101

References

- Department of the Environment, Water, Heritage and the Arts (2008). Approved Conservation Advice for *Diuris drummondii* (Tall Donkey Orchid). Canberra: Department of the Environment, Water, Heritage and the Arts. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/4365-conservation-advice.pdf> .
- Ecoedge (2017). Report of a Targeted Rare Flora Survey for *Diuris drummondii* along four sections of the Bunbury Outer Ring Road proposed alignment. Unpublished report to Main Roads WA.
- Ecoedge (2019). Detailed and Targeted Flora and Vegetation Survey at Stratham. Unpublished report for Doral Mineral Sands Pty Ltd.