

September 20, 2022

Roberta Magoba
Senior Project Consultant
JBS&G Pty Ltd
100 Hutt Street Adelaide
South Australia

RE: Targeted *Caladenia argocalla* (White Beauty Spider-Orchid) Survey

Dear Roberta,

EBS Ecology were engaged by JBS&G Pty Ltd to undertake a targeted survey for the nationally Endangered *Caladenia argocalla* (White Beauty Spider-Orchid) at 299 Collins Road, Tungkillo in South Australia (Figure 1). This letter will help support the ongoing planning for a Development Application (DA) for a commercial Battery Energy Storage System (BESS) (the Project). The Project is a single stage 270MW battery to be constructed over 18 months. The proposed Project includes the construction of a series of battery units stored within containers and a BESS Substation which will connect to the adjacent ElectraNet operated Tungkillo Substation.

Caladenia argocalla was assessed as possibly occurring within the Project Area with a total of fifteen historical records within 20 kilometres (km) of the Project Area (EBS 2022a) (Figure 2). The previous ecological assessment was undertaken in November 2021 (EBS 2022a), which was outside of the flowering period for this species. Therefore, it was recommended that additional surveys were undertaken to ensure the flowering period of this species was not missed, and that *C. argocalla* will not be significantly impacted by the Project.

DESCRIPTION

Caladenia argocalla (White Beauty Spider-orchid) is nationally listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999*. *C. argocalla* is a terrestrial herb that grows to 60 centimeters (cm) in height with one or two striking white flowers (TSSC 2021) (Figure 3). This species usually, but not always, produces a leaf in April or May with the onset of cool, wet weather, followed by bud production from mid-August to mid-September before finally flowering in late September to October (Quarmby 2010). *C. argocalla* is endemic to the Mount Lofty Ranges in South Australia and is known from thirteen populations of which the majority occur on road reserves or unreserved private land (Jones 1991; Quarmby 2010; Robertson & Bickerton 2000; TSSC 2021).

SURVEY METHODOLOGY

EBS staff, E. West and P. Drummond undertook the first field survey on the 26 of August 2022, with a follow up survey undertaken by E. West and G. Wilson on the 15 of September 2022. Each survey followed the draft survey guidelines for Australia's threatened orchids protocol (DCCEEW 2013). The timing of the survey aligned

with the leaf and bud production timeline for this species (Quarmby 2010). Areas that were targeted for the survey included revegetated native vegetation, which were traversed systematically on foot in search for the presence of *C. argocalla*. Areas that were surveyed include the following (Figure 1):

- *Eucalyptus cladocalyx* and *E. sideroxylon* Woodlot;
- *E. camaldulensis* and *E. leucoxylon* Woodland over *Acacia paradoxa* and *Allocasuarina verticillata*;
- *E. leucoxylon* and *A. verticillata*;
- *E. leucoxylon* Woodland over *A. paradoxa* and *A. argyrophylla*; and
- *E. leucoxylon* and *A. verticillata* Woodland.

SURVEY FINDINGS

No *C. argocalla* individuals were recorded within the Project Area during the time of the 2022 field survey. A majority of the site was largely impacted by exotic flora species such as *Echium plantagineum* (Salvation Jane), *Avena barbata* (Bearded Oat), *Romulea rosea* (Guildford Grass), *Oxalis pes-caprae* (Soursobs) and various other exotic herbs and grasses. Furthermore, the area is heavily grazed by Sheep, Kangaroos and Rabbits. Competition with invasive flora species such as Salvation Jane and Bearded Oat pose the greatest threat to *C. argocalla* with grazing also considered to be a threatening process (TSSC 2021). The only native spring flowering herbaceous species that were observed included, *Arthropodium sp.*, (Vanilla Lilies) *Oxalis perennans* (Native Sorrel), *Geranium sp.* and *Hypoxis glabella* (Tiny Star) (Figures 4 and 5).

Please do not hesitate to contact us here at EBS Ecology if you have any further questions.

Kind regards,



Ella West

Ecologist

EBS Ecology

P: 08 7127 5607

E: ella.west@ebsecology.com.au

REFERENCES

- Department of Climate Change, Environment, Energy, the Environment and Water (DCCEEW) (2013). Draft survey guidelines for Australia's threatened orchids.
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- Quarmby, JP (2010). Recovery Plan for Twelve Threatened Orchids in the Lofty Block Region of South Australia 2010. Department of Environment and Natural Resources, South Australia.
- Robertson MA & Bickerton D (2000). White Beauty Spider Orchid (*Caladenia argocalla*) recovery plan. Department for Environment and Heritage, South Australia.
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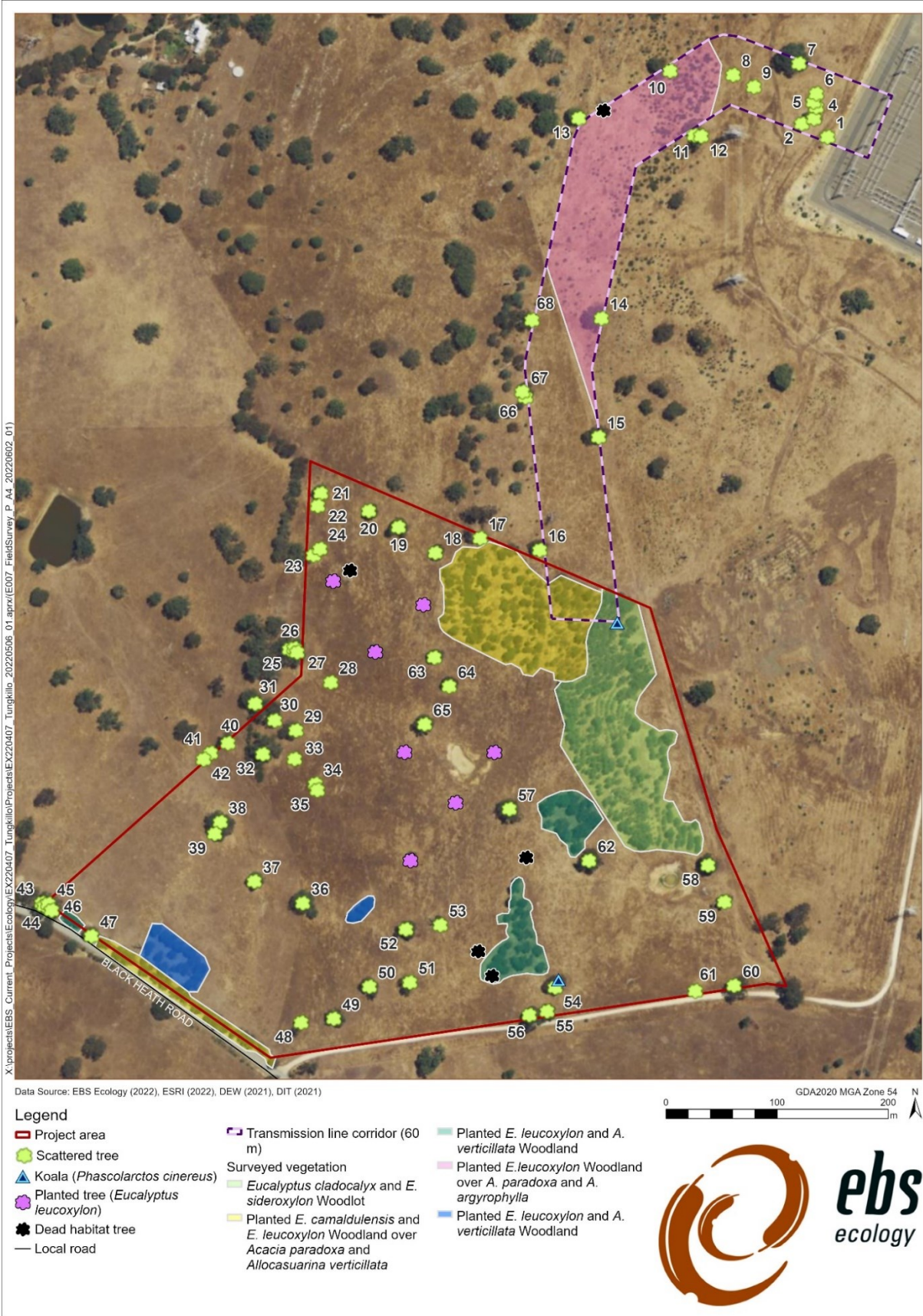


Figure 1. Project Area and previously surveyed vegetation, includes scattered remnant trees, planted trees, planted vegetation, fauna, and dead habitat trees (Source of map: EBS 2022a).

Figure 2. The Biological Database of South Australia (BDBSA) records of *Caladenia argocalla* (source of map: EBS 2022b).



Figure 3. A group of *Caladenia argocalla* (top) and inflorescence (bottom) (Seeds of South Australia 2018).



Figure 4: *Arthropodium* sp. (Vanillia Lilies) individual located within the Project Area.



Figure 5: *Geranium* sp. located within the Project Area.