

27 October 2023

Paul King
Frenchmans Bay Albany Pty Ltd
PO Box 518
SUBIACO WA 6904
Dear Paul

TARGETED SURVEY FOR *CALADENIA HARRINGTONIAE* AT LOT 1 & 2 FRENCHMAN BAY ROAD, FRENCHMAN BAY

BACKGROUND

Caladenia harringtoniae (Harrington's spider-orchid or pink spider-orchid) is listed as 'Vulnerable' under the *Environmental Protection and Biodiversity Conservation Act 1999* and *Biodiversity Conservation Act 2016 (Western Australia)*. The species is known from 40 populations between Nannup and Albany, in Western Australia (Hickman, 2022¹). It usually inhabits paperbark (*Melaleuca* spp.) and flooded gum (*Eucalyptus rudis*) swamps and flats, which are inundated for several months of the year, but may also be found along creek lines in jarrah (*Eucalyptus marginata*) and karri (*E. diversicolor*) forest and in soil pockets downslope of granite outcrops (Jones, 2006²). There are 79 records included in the Atlas of Living Australia³.

In November 2022, a targeted survey was undertaken by Dr Ellen Hickman for *Caladenia harringtoniae* (Attachment A) at Lots 1 and 2 Frenchman Bay Road, Frenchman Bay as the orchid had been identified at three locations around Albany, including on the corner of Frenchman Bay Road and Whatling Station Road. However, the survey was inconclusive as:

- a. The survey on 7 November 2022 found a senescent leaf of a *Caladenia* sp. but no flower or fruit near the corner of Frenchman Bay Road and Whaling Station Road.
- b. A traverse of Lot 1 and 2 Frenchman Bay was conducted and while no *Caladenia harringtoniae* was identified, several leaves of a *Caladenia* species with immature buds were observed under peppermint saplings in the NE corner of the survey area (S35° 05' 34.7", E 117° 57' 01.3"). On 21 November 2022, a follow up survey was undertaken and the orchid was identified as *Caladenia corynephoroa* (club-lipped spider orchid) which is not a Threatened species.

¹ Hickman (2023) Targeted Survey for *Caladenia harringtoniae* at Lot 1 and 2 Frenchman Bay Road, Frenchman Bay.

² Jones, David L. (2006). *A complete guide to native orchids of Australia including the island territories*. Frenchs Forest, N.S.W.: New Holland. p. 56.

³ Atlas of Living Australia (2023) *Caladenia harringtoniae*
<https://spatial.ala.org.au/?q=lsid:https%3A%2F%2Fid.biodiversity.org.au%2Ftaxon%2Fapni%2F51399061&qualityProfile=ALA>

It was recommended that the survey be repeated earlier in Spring of 2023 as it was considered that the survey was too late to detect *Caladenia harringtoniae*.

Aurora Environmental was engaged to undertake a targeted flora survey in early spring, 2023, for Lots 1 and 2 Frenchman Bay Road and adjacent road reserve (western portion only) (Attachment B). The first visit to the site was on 8 September 2023. Subsequent visits were undertaken when budding orchids were found that may have been a *Caladenia* species (15 and 22 September, 6, 15 and 28 October, 2023). Tracks for several of the surveys are shown in Attachment C.

Orchid species identified include:

- *Drakaea glyptodon* (king in his carriage);
- *Elythranthera brunonis* (purple enamel orchid);
- *Caladenia cairnsiana* (zebra orchid);
- *Caladenia reptans* subsp. *reptans* (little pink fairy orchid);
- *Caladenia flava* (cowslip orchid);
- *Caleana nigrita* (flying duck orchid);
- *Thelymitra graminea* (shy sun orchid); and
- *Thelymitra macrophylla* (scented sun orchid).

None of these species are Threatened or Priority flora.

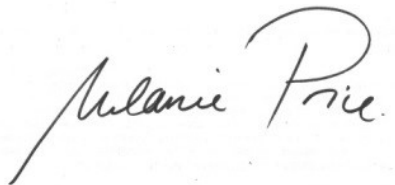
A search was undertaken for the previously identified *Caladenia harringtoniae* population on the eastern side of Frenchman Bay Road on 28 October, 2023. However, no individuals were identified.

Conclusions

The survey effort was sufficient to detect *Caladenia harringtoniae* if the species was flowering in the survey area. It is considered unlikely that the species occurs on Lots 1 and 2 Frenchman Bay Road, or the adjacent Frenchman Bay Road reserve (western portion).

If you have any queries regarding this targeted survey, please contact the undersigned on 0447 446 343 or melanie.price@auroraenvironmental.com.au.

For and on behalf of Aurora Environmental



Melanie Price

Principal Environmental Scientist (Director)

Attachments

- A. Hickman (2023) Targeted Survey for *Caladenia harringtoniae* at Lot 1 and 2 Frenchman Bay Road, Frenchman Bay
- B. Survey Area
- C. Survey Tracks

ATTACHMENT A

**Hickman (2023) Targeted Survey for *Caladenia harringtoniae* at
Lot 1 and 2 Frenchman Bay Road, Frenchman Bay**

Mr Paul King
Frenchman Bay Pty Ltd
Lot 1 and 2 Frenchman Bay Road
Frenchman Bay

Re: Targeted survey for *Caladenia harringtoniae* at Lot 1 & 2 Frenchman Bay Road, Frenchman Bay (old caravan park site).

Dear Mr King,

Background

Caladenia harringtoniae (pink spider orchid) is an orchid plant growing up to 40 cm tall, and has leaves 15 to 25 cm long. Each plant has 1 to 3 flowers, 7 to 10 cm long and 5 to 7 cm across. The flowers are predominantly pink, edged white. The labellum (lip) is also pink and white, with a short fringe of deeply pink calli (glands). *Caladenia harringtoniae* has smaller, paler pink flowers, narrower tapering petals and sepals, and smaller labellum with shorter fringe than its closest relative, the majestic spider orchid (*Caladenia winfieldii*) another pink spider orchid present in the same habitat and range.

Caladenia harringtoniae is a threatened flora species classified as Vulnerable. This species is known from 40 populations between Nannup and Albany, in Western Australia. It usually inhabits paperbark (*Melaleuca* spp.) and flooded gum (*Eucalyptus rudis*) swamps and flats, which are inundated for several months of the year, but may also be found along creeklines in jarrah (*Eucalyptus marginata*) and karri (*E. diversicolor*) forest and in soil pockets downslope of granite outcrops.

Around Albany, the pink spider orchid is known from three sites. One population is growing amongst scrub, in shallow loamy clay, over a granite outcrop. This population is vouchered with the Herbarium of Western Australia. The other two sites are at Big Grove under peppermint (*Agonis flexuosa*) woodland over coastal heath on limestone, and Frenchman Bay also associated with low peppermint woodland over coastal heath. Neither of these populations has been vouchered, but they have been visited and verified by Professor Stephen Hopper. These last two sites do not appear to be characteristically wet enough to support this species. However, the sites may be cryptically wetter microhabitats within the larger habitat type (i.e. the Frenchman Bay site is in the roadside gutter, which could receive extra moisture from drainage off the bitumen road surface).

Following summer fires in areas where the pink spider orchid occurs, flowering plants are often abundant. The Frenchman Bay population has been documented as flowering for three consecutive years by Professor Stephen Hopper and associates (photographic evidence - 16th September 2019, 28th August 2020, 11th September 2021). Also, this species is usually recorded as flowering from October to November from FloraBase records of collections in the Herbarium of Western Australia. However, the anecdotal photographic evidence of the population at Frenchman Bay suggests this population has a flowering time that is at least a month earlier than populations of this species in the western part of its range.

Survey

On 7th November 2022, a site visit was conducted to relocate the known population of *Caladenia harringtoniae* and search for new plants within Lot 1 and 2 Frenchman Bay, the old caravan park site. The *Leucopogon obovatus* subsp. *revolutus* bush in which the plants had previously been photographed on the NW corner of Frenchman Bay Road and Whaling Station Road (photographs listed as above) was located, and the remains of at least one plant was identified inside this bush. The orchid was senescent, consisting of a leaf that was withered and a flowering scape (stalk), with no flower or fruit remains present (see images attached). A traverse of Lot 1 and 2 Frenchman Bay, the old caravan park site, was then conducted, but no further plants of *Caladenia harringtoniae* were observed. Several leaves of a *Caladenia* species with immature buds were observed under peppermint saplings in the NE corner of the survey area (S 35° 05' 34.7", E 117° 57' 01.3"). During this survey one plant of the Priority 4 species *Adenanthos x cunninghamii* was located 55 m NW of the water tank on Lot 2 Frenchman Bay (S 35° 05' 37.4", E 117° 57' 52.6") (see image attached). On 21st November 2022 a follow-up survey was conducted and the orchids in the NE corner of the survey site were identified as *Caladenia corynephora* (club-lipped spider orchid), a late flowering *Caladenia* species known from the Torndirrup Peninsula, and classified as Not Threatened (see images attached).

Conclusions

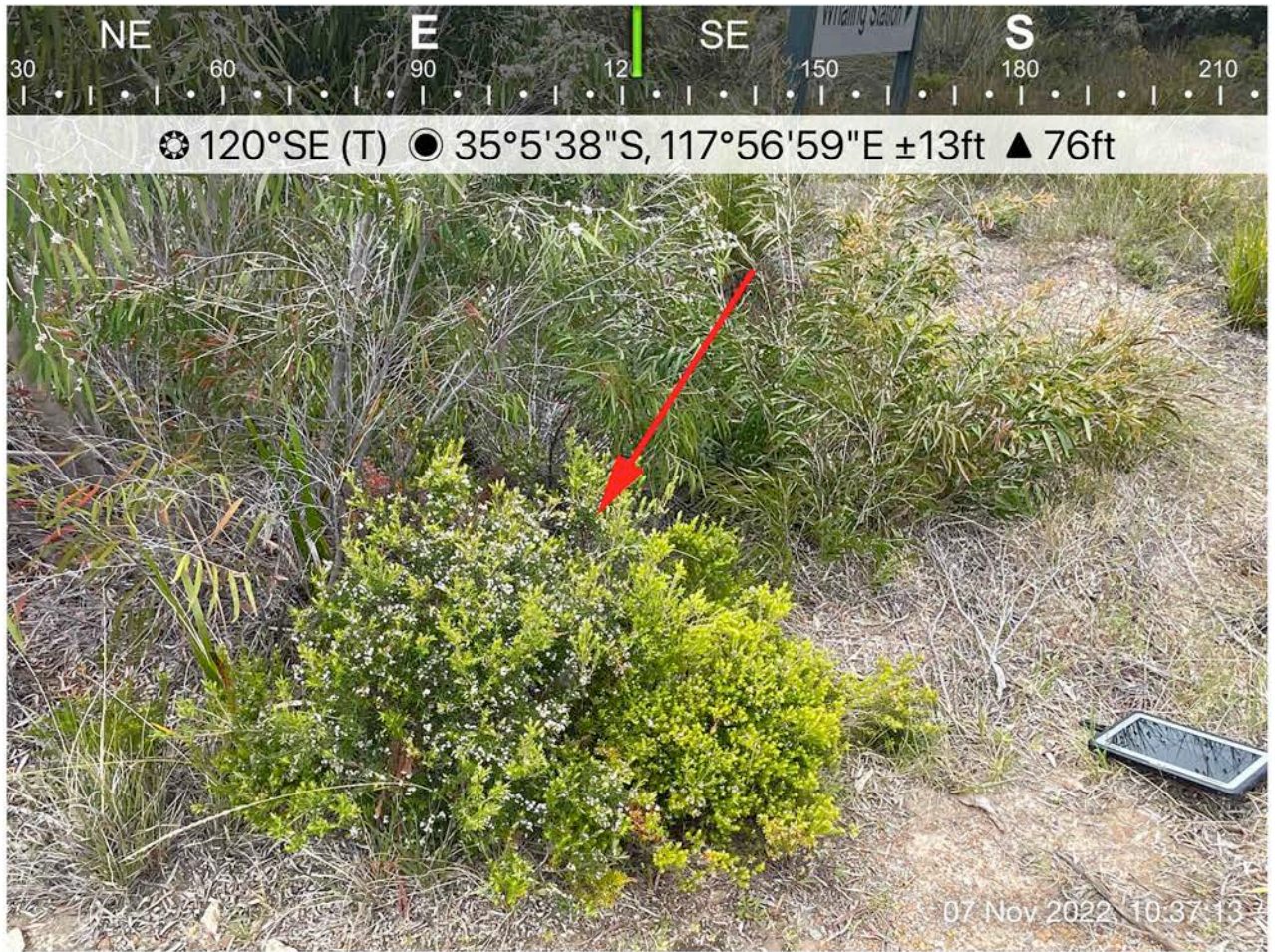
The survey date of November was too late in the flowering season of *Caladenia harringtoniae* at the Frenchman Bay site, to be able to confidently say that this species is not present within the survey site, Lot 1 and 2 Frenchman Bay, the old caravan park site. Although the habitat, including the associated flora species, geology, soils and hydrology, of this survey site do not appear to be consistent with the usual habitat for this species, the habitats of the known population sites of this species around Albany are quite cryptic and as such its occurrence within the survey area cannot be ruled out. A follow-up survey in early Spring 2023 is recommended.

Regards,

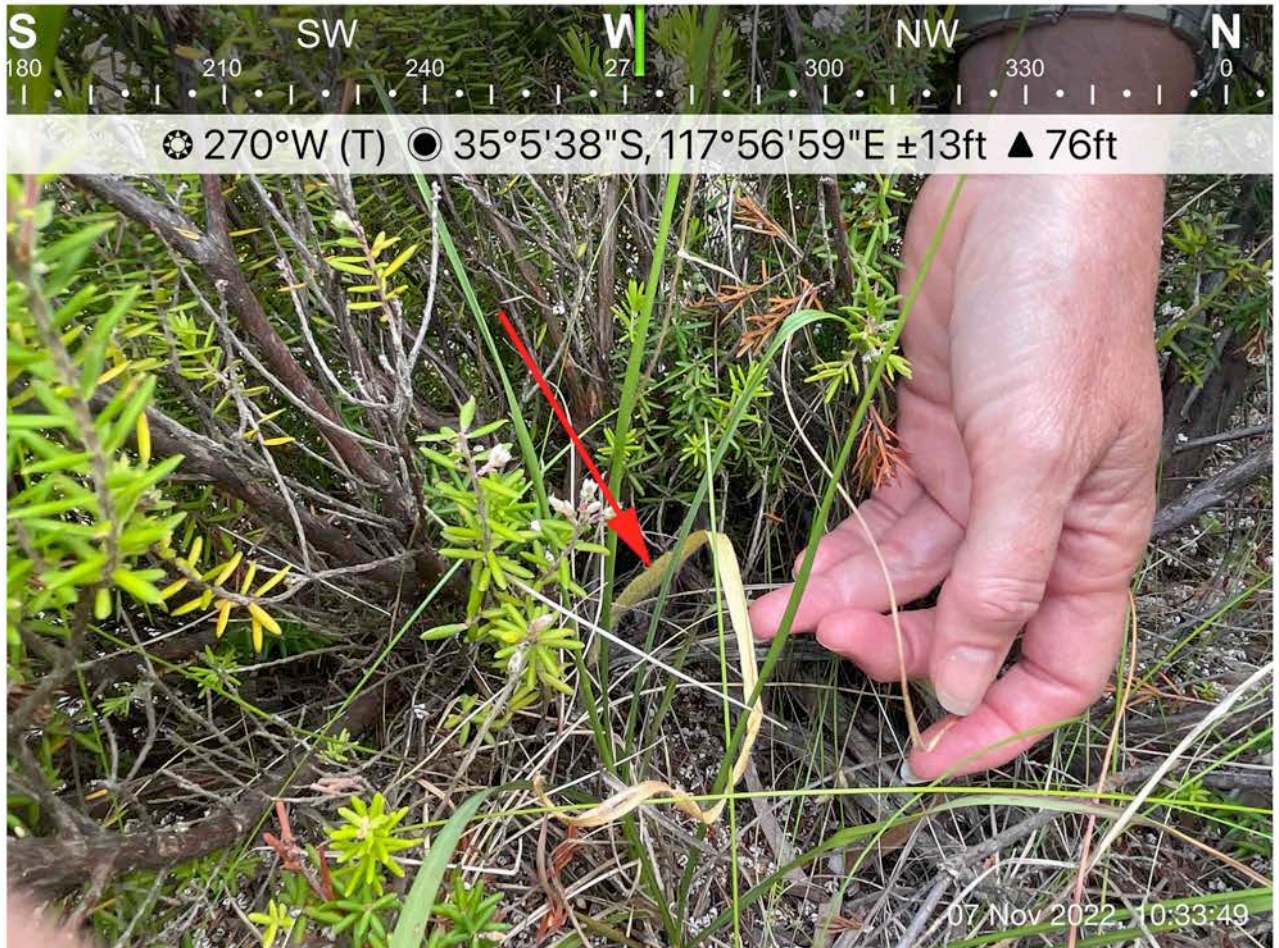


Dr Ellen J. Hickman (Botanist)

21st November 2022



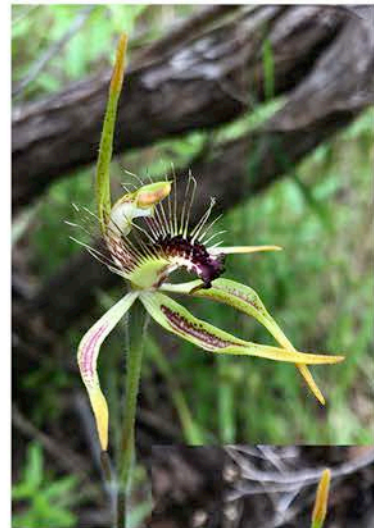
Leucopogon obovatus subsp. *revolutus* bush at intersection of Frenchman Bay Road and Whaling Station Road



Senescent leaf of *Caladenia harringtoniae*



Priority 4 species *Adenanthos x cunninghamii* right of its common related species *Adenanthos sericeus*



Caladenia corynephora (club-lipped spider orchid) under peppermint saplings, Lot 2 Frenchman Bay (Not Threatened)

ATTACHMENT B

Survey Area



Survey area - Lots 1 and 2
and Frenchman Bay Road
reserve

1823

ATTACHMENT C

Survey Tracks

