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Our ref: AU213012063.001

Date: 20/12/2023

John Halleen
Environment Manager
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Dear John,

Lennard Road, Gingin - Targeted flora survey

Introduction

Hanson Construction Materials Pty Ltd (Hanson) owns and operates the Lennard Road Quarry near Gingin, located approximately 63 kilometres (km) north of Perth. The Lennard Road Quarry is currently under care and maintenance while the application to amend Purpose Permit CPS 2701/5 under section 51KA(1) of the *Environmental Protection Act 1986* remains under assessment.

Purpose

The Department of Water and Environmental Regulation (DWER) in a letter dated 18th August 2023 requested for Hanson to complete a targeted flora survey for the following specific threatened or vulnerable listed species under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or *Biodiversity Conservation Act 2016* (BC Act):

- *Ptychosema pusillum* (vulnerable)
- *Leucopogon squarrosus subsp. trigynus* (P2).
- *Poranthera moorokatta* (P2).
- *Styphelia filifolia* (P3).
- Any other priority or threatened flora species that may occur within the Clearing Permit application area

Hanson's Lennard Road sand quarry footprint reflects the CPS 2701/6 approval boundary of 17.6 ha within Lot M1899 on Diagram 10521, Lennard Brook. To date Hanson, in accordance with CPS 2701/6 approval has cleared 10.39 ha. The targeted flora survey is focused on the approximately 7.2 ha area of native vegetation, yet to be cleared, that is within the 17.6 ha quarry plan.

Figure 1 shows the location of the Lennard Road Quarry and the 7.2 ha area subject to the targeted flora survey.

Figure 1 Lennard Road quarry location and targeted search area

Targeted survey - methodology

A targeted survey is used to collect comprehensive information on significant flora and/or vegetation and aims firstly to determine the presence or otherwise of known conservation significant flora, and secondly to define the size and extent of all populations recorded. The resultant data allows analysis regarding potential development impacts to conservation significant flora.

A targeted survey requires one or more site visits to systematically search for, locate and record significant flora (individuals or populations) and/or extent of significant vegetation. Surveys should be undertaken when the target taxa are most detectable and identifiable, which is usually in spring when in flower (EPA, 2016).

Accordingly, RPS' qualified botanist completed the target flora survey within the 7.2 ha area on the on 26th September 2023

Desktop assessment

Prior to field work being undertaken, RPS conducted a desktop assessment to define the target taxa potentially present within the survey area inclusive of the Department of Water and Environmental Regulation (DWER) list of conservation significant taxa which were of primary interest to the Department and the focus of the targeted survey.

Table 1 outlines DWER's list of conservation significant taxa which were of primary interest.

Table 1 Taxa of interest provided by DWER

Taxon	State Conservation Ranking
Ptychosema pusillum	T (Threatened, Vulnerable)
Leucopogon squarrosus subsp. *trigynus*	Priority 2
Poranthera moorokatta	Priority 2
Styphelia filifolia	Priority 3

Conservation significant flora

RPS undertook database searches of Department of Biodiversity, Conservation and Attraction's (DBCA) Threatened and Priority Flora List (TPFL) and the WA Herbarium (WAH) databases to compile a list of current conservation significant taxa known within 10 km of the area.

It was noted, one of DWER's conservation significant taxa, Styphelia filifolia (P3), was not recorded in the DBCA database searches.

The DBCA database search results were examined and assessed using habitat occurrence to compile a list of taxa which possibly occur within or near the Lennard Road quarry (Table 2 - not including those flora species defined in Table 1).

Table 2 Conservation significant taxa that may occur in the search area

Taxon	Conservation ranking
Acacia drummondii subsp. *affinis*	Priority 3
Chamaelaucium lullfitzii	T (Vulnerable)
Dillwynia dillwynoides	Priority 3
Grevillea corrugata	T (Endangered)
Grevillea curviloba	T (Critically Endangered)
Isotropis cuneifolia subsp. *glabra*	Priority 3
Meionectes tenuifolia	Priority 3
Millotia tenuifolia var. *laevis*	Priority 2
Myriophyllum echinatum	Priority 3
Persoonia sulcata	Priority 4
Styphelia allittii	Priority 3

Details of the taxa listed in the tables above were searched through Florabase (Western Australian Herbarium 1998-) and various sources on the internet to familiarise the surveyors with the characteristics of the targeted flora.

Field methods

Field work was undertaken in Spring, on 26th September 2023. Starting at the eastern boundary, transects were walked in a NW/SE direction by RPS Lead Botanist Martin Henson and Environmental Scientist Margaret McCormack. Transects were meandering due to terrain but aimed to remain 10-15 m apart. Figure A (attached) shows transects walked by Martin Henson, as only one hand-held GPS unit was available on the day. Both surveyors carried a booklet with information regarding the target taxa, including photographs, as reference.

If an individual or population of an actual or suspected conservation significant taxon was recorded:

- a sample was taken and pressed for later confirmation using the resources of the Western Australian Herbarium
- the site was waypointed with a hand-held GPS
- a count was taken of individuals within a radius of 5 m of the waypoint
- in the event of a population being recorded, the population boundary was identified and waypointed, and an estimate made of the number of individuals contained within.

Results

The search area was systematically searched by two scientists in Spring of 2023. No conservation significant taxa were recorded during the targeted survey.

Declared plants

One individual of **Zantedeschia aethiopica* (Arum Lily) was recorded. Arum lily is a robust, dark green, succulent herb, also known as calla or white arum lily. It was introduced to WA from South Africa as a garden plant and subsequently escaped to become established as a weed. It is generally found in creeks, irrigation ditches and areas of summer-moist land in the higher rainfall south west of WA, often forming large dense clumps.

The plant has been recorded as far north as Northampton in Western Australia, but rarely beyond Muchea (Western Australian Herbarium 1998-).

One individual was recorded in deep shade underneath *Eucalyptus todtiana* at S 31º 23.419', E 115º 58.337'. While it is debatable whether it would survive in the open, if the tuber and any seeds in the soil around the plant were to be removed with the topsoil and stockpiled there is the potential for the weed to be propagated through the Hanson site rehabilitation. It is therefore recommended that the plant be removed prior to any topsoil stripping.

Application of herbicide is recommended, with metsulfuron methyl 0.4g/15 L water + 225mL glyphosate + Pulse (or similar wetting agent) applied July to September. As this timing may not be suitable for Hanson's requirements then removal by shovel may be preferred. One drawback is that as a tuber the plant is dormant during summer and may be difficult to find without leaves showing. The hand-held GPS used to waypoint the location of the plant has an error of around 4 m, which may make precise location of the dormant plant difficult.

Discussion

The search area was covered systematically by two scientists searching for the target species at an appropriate time of year. No conservation significant taxa were recorded during the targeted search.

Yours sincerely,
for RPS AAP Consulting Pty Ltd

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Attachment – Figure A showing the site and targeted survey transects

References

EPA (2016) *Technical Guidance. Flora and vegetation surveys for Environmental Impact Assessment* Environmental Protection Authority, Perth WA

Western Australian Herbarium (1998-) *Florabase – the Western Australian Flora.* Department of Biodiversity, Conservation and Attractions https://florabase.dbca.wa.gov.au/ Accessed November 2023.

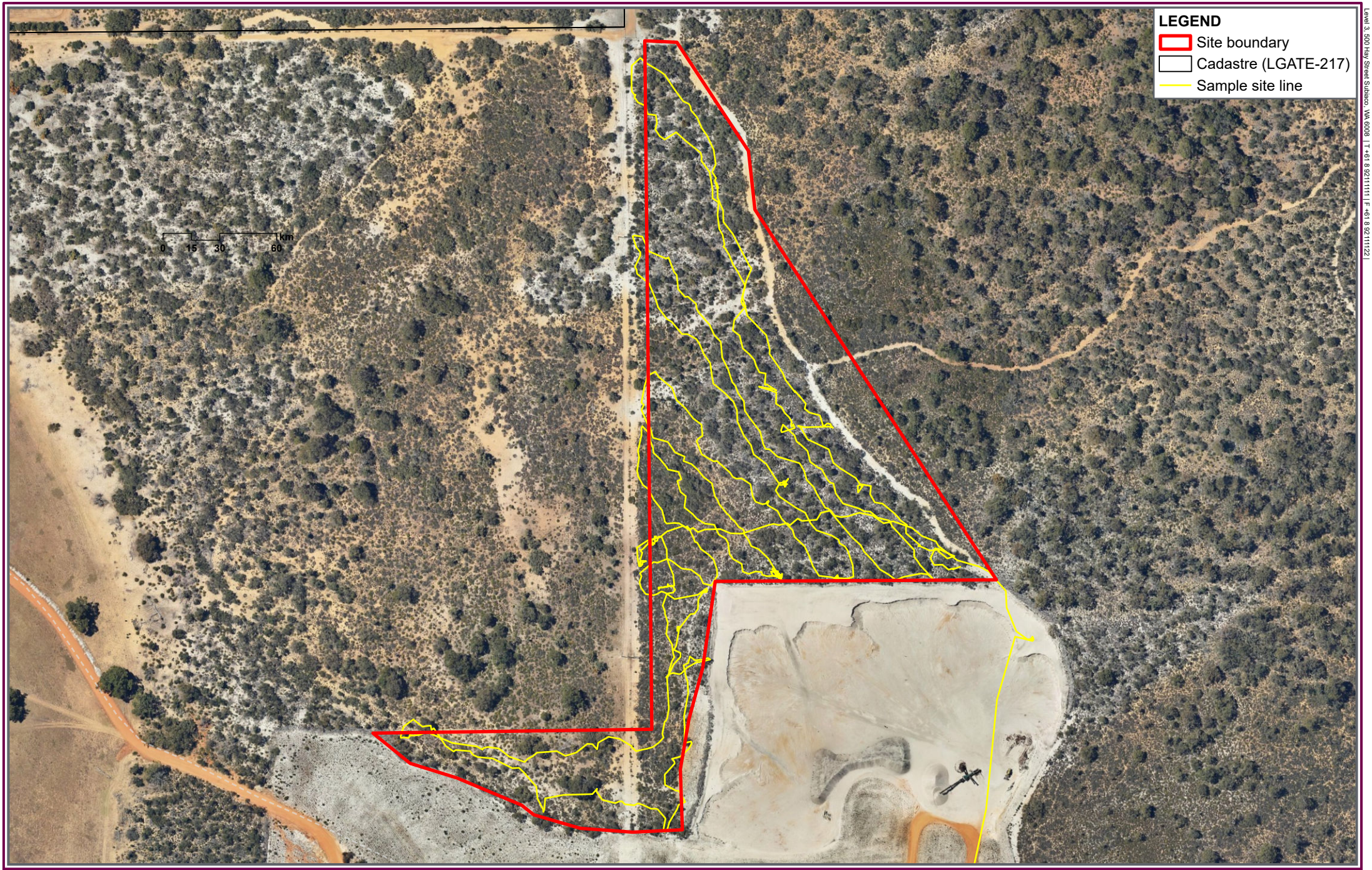

Figure A

Targeted survey tracks

GDA2020 MGA Zone 50

0 50 100 200 m

Job Number: AU213012063
Doc Number: 001
Date: 20/10/2023
Scale: Map 1:3,500 Overview 1:2,500,000 @ A4
Created by: clare.thatcher
Source: Orthophoto - Landgate, 2023

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