

Appendix B Targeted Threatened Flora Survey

NOVEMBER 2018



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to industry and government.*



**STRIKE ENERGY LIMITED
TARGETED THREATENED FLORA SURVEY
WEST ERRAGULLA 2018**

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TABLE OF CONTENTS

| | | |
|----------|---|-----------|
| 1 | INTRODUCTION..... | 1 |
| 1.1 | PROJECT BACKGROUND..... | 1 |
| 1.2 | SURVEY OBJECTIVES..... | 1 |
| 1.3 | LEGISLATIVE FRAMEWORK | 3 |
| 2 | METHODOLOGY | 5 |
| 2.1 | SURVEY TIMING | 5 |
| 2.2 | PERSONNEL AND LICENSING..... | 5 |
| 2.3 | FIELD METHODOLOGY | 5 |
| 2.4 | PLANT COLLECTION AND IDENTIFICATION | 5 |
| 3 | LIMITATIONS OF SURVEY..... | 7 |
| 4 | FIELD SURVEY RESULTS..... | 7 |
| 5 | DISCUSSION | 8 |
| 6 | REFERENCES..... | 10 |

TABLES

| | | |
|---------|---|---|
| Table 1 | Definition codes for Threatened and Priority Flora (DBCA) | 3 |
| Table 2 | Personnel and Licencing Information | 5 |

FIGURES

| | | |
|----------|---|---|
| Figure 1 | Location of proposed Strike Energy Exploration Well | 2 |
| Figure 2 | Track logs from targeted survey. | 6 |
| Figure 3 | Substrate in Exploration Well Survey Area | 8 |

ACRONYMS AND GLOSSARY

| | |
|-----------------|---|
| ARRP Act | <i>Agriculture and Related Resources Protection Act 1976</i> |
| BAM Act | <i>Biosecurity and Agriculture Management Act 2007</i> |
| BOM | Bureau of Meteorology |
| DAFWA | Department of Agriculture and Food Western Australia |
| DBCA | Department of Biodiversity, Conservation and Attractions (Formerly DPaW) |
| DBH | Diameter at breast height |
| DEC | Department of Environment and Conservation (now DPaW) |
| DEFL | The DPaW's Threatened (Declared Rare) Flora Database |
| DMP | Department of Mines and Petroleum |
| DoEE | Department of Environment and Energy (formerly DSEWPaC) |
| DPaW | Department of Parks and Wildlife (formerly DEC) |
| DSEWPaC | Department of the Sustainability, Environment, Water, Population and Communities (now DoEE) |
| ESA | Environmentally Sensitive Area |
| EPA | Environmental Protection Authority |
| EP Act | <i>Environmental Protection Act 1986</i> |
| EPBC Act | <i>Environment Protection and Biodiversity Conservation Act 1999</i> |
| IBRA | Interim Biogeographic Regionalisation for Australia |
| NVIS | National Vegetation Information System |
| WAHERB | Western Australian Herbarium |
| WAOL | Western Australian Organism List |
| WC Act | <i>Wildlife Conservation Act 1950</i> |
| WONS | Weeds of National Significance |

EXECUTIVE SUMMARY

Strike Energy Limited is undertaking exploration activities, including the proposed construction of an exploration well, on EP 469 in the West Erragulla Field within the North Perth Basin, which is located approximately 230 km north of Perth. Drilling of the proposed exploration well will require the clearing of native vegetation and potential impacts to Threatened flora species. A desktop assessment indicated that proposed well is in close proximity to previously recorded Threatened flora species. In order to avoid potential impacts to Threatened flora Ecologia Environmental (*ecologia*) were engaged by Strike Energy to conduct a targeted Threatened flora survey of the proposed well site and the immediately surrounding area. The field survey was conducted between 30th-31st October 2018. The results of the survey are addressed within this report.

The survey specifically targeted the Threatened taxa *Thelymitra stellata*, *Paracaleana dixonii* and *Eucalyptus crispata*. No individuals were found of any of the targeted species in the 9.3ha survey area surrounding the proposed exploration well. No other conservation significant flora, including DBCA-listed Priority taxa, were recorded from the survey area.

1 INTRODUCTION

1.1 PROJECT BACKGROUND

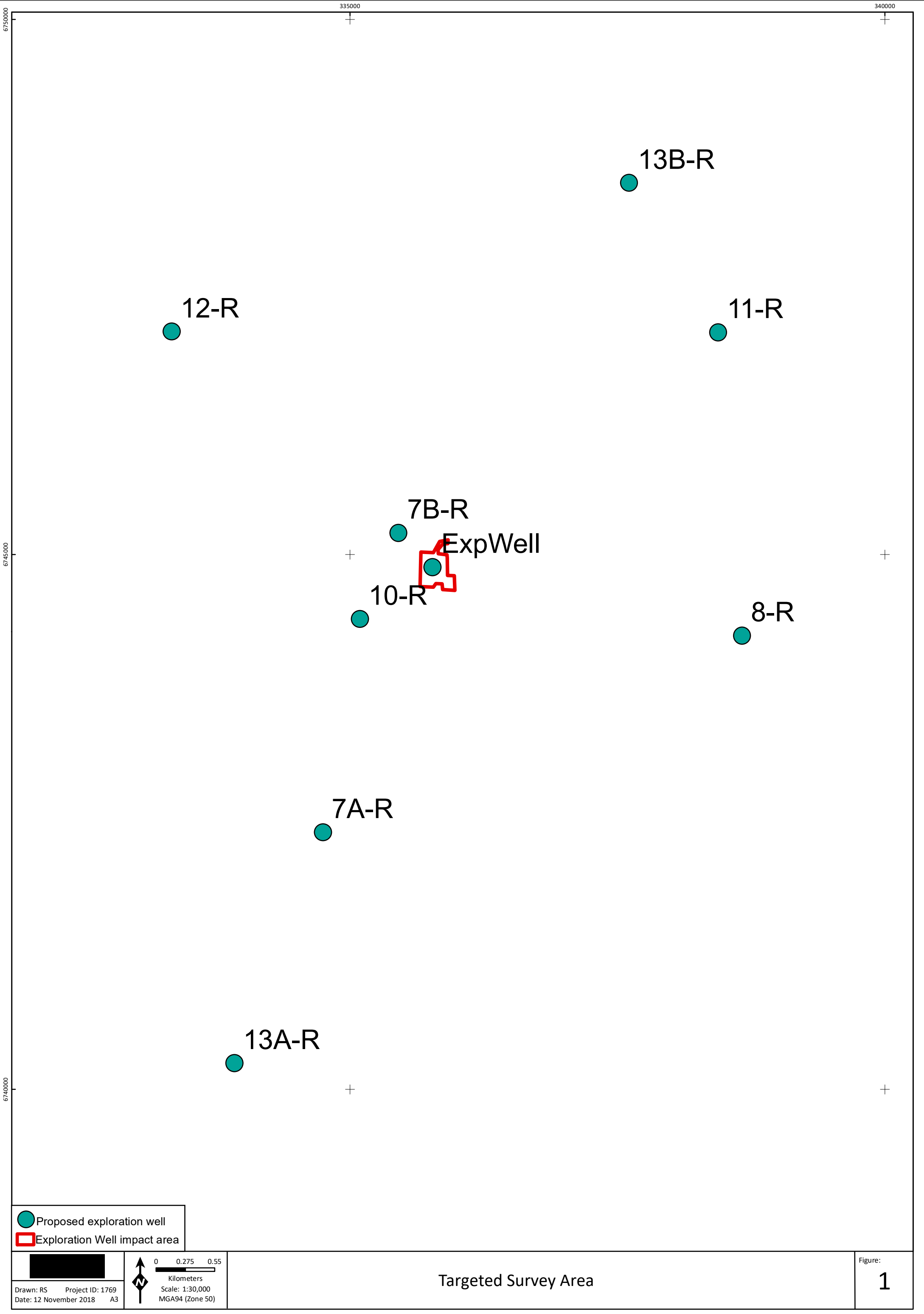
Strike Energy Limited is undertaking exploration activities on EP 469 in the West Erragulla Field, which is located approximately 230 km northeast of Perth within the North Perth Basin and in Northern Sandplains region of Western Australia. The West Erragulla Exploration Program includes the proposed construction of an exploration well, requiring the clearing of native vegetation and potential impact to Threatened flora. A desktop environmental assessment indicated that the proposed location of the exploration well is in close proximity to previously recorded Threatened flora. Schedule 5 of the *Environmental Protection Act 1986* states: 'Native vegetation should not be cleared if it includes, or is necessary for, the continues existence of Rare (Threatened) Flora (Department of Environment and Conservation 1986)'. In order avoid potential impacts to Threatened Ecologia Environmental (*ecologia*) were engaged to conduct a targeted Threatened survey of the area surrounding the proposed exploration well.


1.2 SURVEY OBJECTIVES


The scope of this report is to provide the results a targeted Threatened flora survey conducted by *ecologia* of the native vegetation surrounding a proposed exploration well (Figure 1). The overall objectives of the assessment were to:

- Identify and record the locations of flora taxa that occur within the survey area that are one of the following (hereafter referred to as significant flora taxa):
 - Listed Threatened Species under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) (EPBC Act); and
 - Threatened Flora under the *Wildlife Conservation Act 1950* (WA) (WC Act).


The survey specifically targeted the Threatened taxa *Thelymitra stellata*, *Paracaleana dixonii* and *Eucalyptus crispata*.



Proposed exploration well

Exploration Well impact area

Drawn: RS Project ID: 1769
Date: 12 November 2018 A3



0 0.275 0.55
Kilometers
Scale: 1:30,000
MGA94 (Zone 50)

Targeted Survey Area

Figure:
1

1.3 LEGISLATIVE FRAMEWORK

Legislation relevant to the protection of biodiversity in Western Australia includes, but is not limited to, the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), the State *Wildlife Conservation Act 1950* (WC Act) and *Environment Protection Act 1986* (EP Act).

At a Commonwealth level, Threatened Flora are protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999), which lists species that are considered Critically Endangered, Endangered, Vulnerable, Conservation Dependant, Extinct, or Extinct in the Wild.

At State level, Threatened Flora species are protected under the *Wildlife Conservation Act 1950* (WC Act). These are taxa which have been adequately surveyed and are deemed to be either rare, in danger of extinction, or otherwise in need of special protection in the wild and are gazetted as Threatened (Declared Rare) Flora. Threatened Flora are further categorised by DBCA according to their level of threat using the International Union for Conservation of Nature (IUCN) red list criteria (IUCN 2001). These taxa are legally protected and their removal or impact to their surroundings cannot be conducted without Ministerial approval, obtained specifically on each occasion for each population.

The State EP Act was developed to ensure that impacts on native flora and fauna are considered in the assessment of development proposals. While the assessment of specific proposals is not within the scope of this report, the surveys undertaken conform to the requirements of the Environment Protection Authority's (EPA's) *Position Statement No. 3: Terrestrial Biological Surveys as an Element of Biodiversity Protection* (EPA 2002) and *Technical Guide - Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA (2016)). Under the relevant legislation, certain species of flora, fauna and ecological communities are awarded protection in the interest of their conservation (Table 1).

Table 1 Definition codes for Threatened and Priority Flora (DBCA)

| Code | Definition |
|------|---|
| T | Threatened Flora – (Declared Rare Flora – Extant) Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection and have been gazetted as such (Schedule 1 under the <i>Wildlife Conservation Act 1950</i>). |
| X | Presumed Extinct Flora (Declared Rare Flora - Extinct) Taxa which have been adequately searched for and there is no reasonable doubt that the last individual has died, and have been gazetted as such Schedule 2 under the <i>Wildlife Conservation Act 1950</i> . |
| P1 | Priority One – Poorly Known Species Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, Westrail and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. |
| P2 | Priority Two – Poorly Known Species Species that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. |
| P3 | Priority Three – Poorly Known Species Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. |

| Code | Definition |
|------|--|
| P4 | <p>Priority Four – Rare, Near Threatened and other species in need of monitoring</p> <p>(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.</p> <p>(b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.</p> <p>(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.</p> |
| P5 | <p>Priority Five - Conservation Dependent species</p> <p>Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.</p> |

2 METHODOLOGY

2.1 SURVEY TIMING

The targeted survey was conducted between 30th and 31st of October by two *ecologia* botanists, Martin Hensen and Rob Sellers. The timing of the survey coincided with the flowering of the two orchid *Thelymitra stellata* and *Paracaleana dixonii*, maximising the potential for their field identification.

2.2 PERSONNEL AND LICENSING

Table 2 lists the personnel involved in both fieldwork and plant identifications for the survey. The Senior Botanist (involved in fieldwork and plant identifications) has had extensive previous experience in conducting flora surveys in the vicinity of the Survey Area. All plant material was collected under the scientific licences pursuant to the WC Act Section 23C and Section 23F as listed in Table 2.

Table 2 Personnel and Licensing Information

| Personnel | Role | Flora Collecting Permit |
|---------------|--|-------------------------|
| Martin Henson | Senior Botanist/ Plant Identification | SL012387 |
| Rob Sellers | Level 2 Botanist | |

2.3 FIELD METHODOLOGY

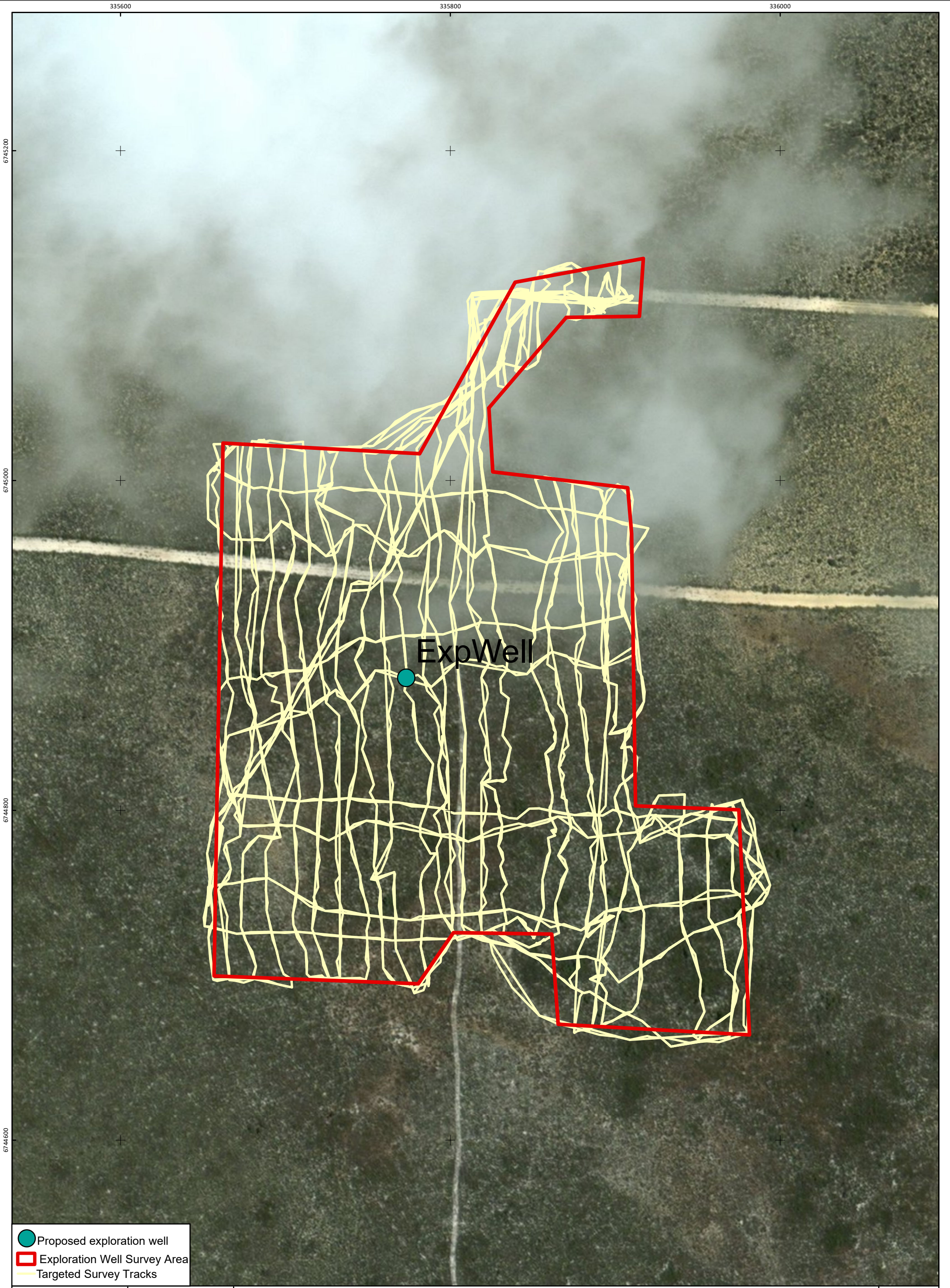
The targeted survey was conducted between the 30th and 31st October 2018. A 4ha survey area surrounding the proposed exploration well was initially provided by Strike Energy for the targeted survey. To provide Strike with greater flexibility in relation to locating the exploration well, *ecologia* increased the extent of the survey area to 9.3ha. The survey area was then surveyed via a series of transects between 10m and 50m in width in a north-south and east-west grid and presented as track logs (Figure 2).

If and when located, any Threatened taxa (using GPS) and number of individuals of significant flora at each location were recorded. Although not specifically targeted during this survey, any Priority listed taxa that were opportunistically observed were also recorded including their location and the number of individuals.

2.4 PLANT COLLECTION AND IDENTIFICATION

Specimens of any unknown taxa that were collected were pressed for later identification at the WA Herbarium. Identifications were undertaken by experienced *ecologia* Principal Botanist Dr Andrew Craigie.

Taxon nomenclature generally follows FloraBase (Western Australian Herbarium 1998-) with all names checked against the current DPaW Max database to ensure their validity. However, in cases where names of plant taxa have been published recently in scientific literature but have not been adopted on FloraBase (Western Australian Herbarium 1998-), nomenclature in the published literature is followed. The conservation status of each taxon was checked against FloraBase, which provides the most up-to-date information regarding the conservation status of flora taxa in Western Australia.



- Proposed exploration well
- Exploration Well Survey Area
- Targeted Survey Tracks

Drawn: RS Project ID: 1769
Date: 12 November 2018 A3

0 0.0175 0.035
Kilometers
Scale: 1:2,000
MGA94 (Zone 50)

Track Logs from Targeted Survey

3 LIMITATIONS OF SURVEY

The Senior Botanist leading the targeted survey has extensive experience in conducting significant flora assessments within the vicinity of the survey area. Both field personnel familiarised themselves with Threatened taxa known from the vicinity of the survey area prior to the survey. Additionally, historical locations of Threatened taxa previously recorded from adjacent to the survey area were visited in the field to determine the presence and flowering status of these populations. An individual of *Thelymitra stellata* from adjacent to the current rehabilitation monitoring area, was observed to be in flower at the time of the targeted survey. Although the rainfall received in the month prior to the survey was below average, it did not prevent the identification of any of the targeted Threatened flora which would be identifiable during the period of time during which the survey was conducted, and is not considered to be a constraint to this survey.

4 FIELD SURVEY RESULTS

No individuals of any of the targeted Threatened species (*Thelymitra stellata*, *Paracaleana dixonii* and *Eucalyptus crispata*) were recorded from the 9.3ha survey area. Additionally no Priority listed flora were observed during the survey.

5 DISCUSSION

In 2003 Woodman Environmental Consulting conducted an extensive survey of the West Erragulla area covering 9500ha (DoE 2018b, DoE 2018a, DoE 2018c). Woodmans' investigation reported the primary habitat for the three Threatened flora that are the subject of this targeted survey. Each of the three species' primary habitat was reported as being associated with shallow sands or loams with laterite on or near the surface (DoEE 2018b, DoEE 2018a, DoEE 2018c). By contrast the area around proposed exploration well was dominated by deep grey sand (Figure 3). This may have contributed to the absence the targeted species in the survey area.



Figure 3 Substrate in Exploration Well Survey Area

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6 REFERENCES

- Department of Environment and Conservation. 1986. Environmental Protection Act 1986 as amended on 1 November 2012. State Law Publisher, Government of Western Australia.
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