

**LOT 230 ELGIN ROAD, ELGIN
CLEARING PERMIT APPLICATION
SUPPORTING DOCUMENTATION**

PREPARED FOR:

COWARA CONTRACTORS PTY LTD



JUNE 2020

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LOT 230 ELGIN ROAD, ELGIN CLEARING PERMIT APPLICATION

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Document Control for Job Number: CCERCP

Document Status	Prepared By	Authorised By	Date
Draft Report	Kirsi Kauhanen	Freea Itzstein-Davey	24 June 2020
Final Report	Kirsi Kauhanen	Freea Itzstein-Davey	24 June 2020

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TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	BACKGROUND	4
2.1	LOCATION	4
2.2	TENURE	4
2.3	ENVIRONMENTAL SETTING	4
2.3.1	Climate	4
2.3.2	Regional Setting	5
2.3.3	Landform and soil	5
2.3.4	Vegetation	5
2.4	ABORIGINAL HERITAGE	6
3.	PROPOSED CLEARING	7
4.	ASSESSMENT OF CLEARING PRINCIPLES	10
4.1	BIODIVERSITY.....	10
4.2	SIGNIFICANT FAUNA HABITAT	11
4.3	SIGNIFICANT FLORA.....	12
4.4	THREATENED ECOLOGICAL COMMUNITIES	12
4.5	REMNANT VEGETATION	12
4.6	WATERCOURSE OR WETLAND ENVIRONMENTS	13
4.7	LAND DEGRADATION.....	14
4.8	CONSERVATION ESTATE	14
4.9	SURFACE AND GROUNDWATER QUALITY	14
4.10	FLOODING POTENTIAL	14
5.	CONCLUSION	16
6.	REFERENCES	17

TABLES

Table 1: Vegetation Extents (Government of Western Australia 2018a, 2018b).....	13
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FIGURES

Figure 1: Project Location.....	2
Figure 2: Local Setting.....	3
Figure 3: Long-term Rainfall and Temperature Data (1995-2020) for Bunbury Meteorological Station 9965 (Bureau of Meteorology 2020).....	4
Figure 4: Proposed Clearing Area	8
Figure 5: Vegetation and Fauna	9

APPENDICES

Appendix 1: Proposed Project Layout

Appendix 2: Certificate of Title

Appendix 3: Site Inspection Memorandum

Appendix 4: NatureMap Database Search Results (5 km Buffer)

Appendix 5: EPBC Protected Matters Search Tool Results (5 km Buffer)

Appendix 6: Fauna Survey Report (Harewood 2020)

1. INTRODUCTION

Cowara Contractors Pty Ltd is proposing to undertake sand extraction on Lot 230 (on Plan 232802) Elgin Road, in Elgin within Shire of Capel (Figure 1, Figure 2). The project involves clearing of up to 5.6 ha of native vegetation and a Clearing Permit from Department of Water and Environmental Regulation (DWER) is required. A total of 5.6 ha is likely an overestimate given there are extensive areas of cleared land between isolated trees but for the purposes of this application, a conservative maximum clearing area is applied for. This report provides supporting information for the Clearing Permit application. The Clearing Permit applicants are the landowners Warwick Glen Grazing Pty Ltd and Molita Grove Grazing Pty Ltd (these entities are owned by the directors of Cowara Contractors).



352500 m 367500 m 382500 m 397500 m 412500 m

6277500 m 6292500 m 6307500 m

Legend

- Lot 230 Elgin Road, Elgin
- Inland Waters
- WA Towns
- Roads**
- Primary Route Paved
- Secondary Route

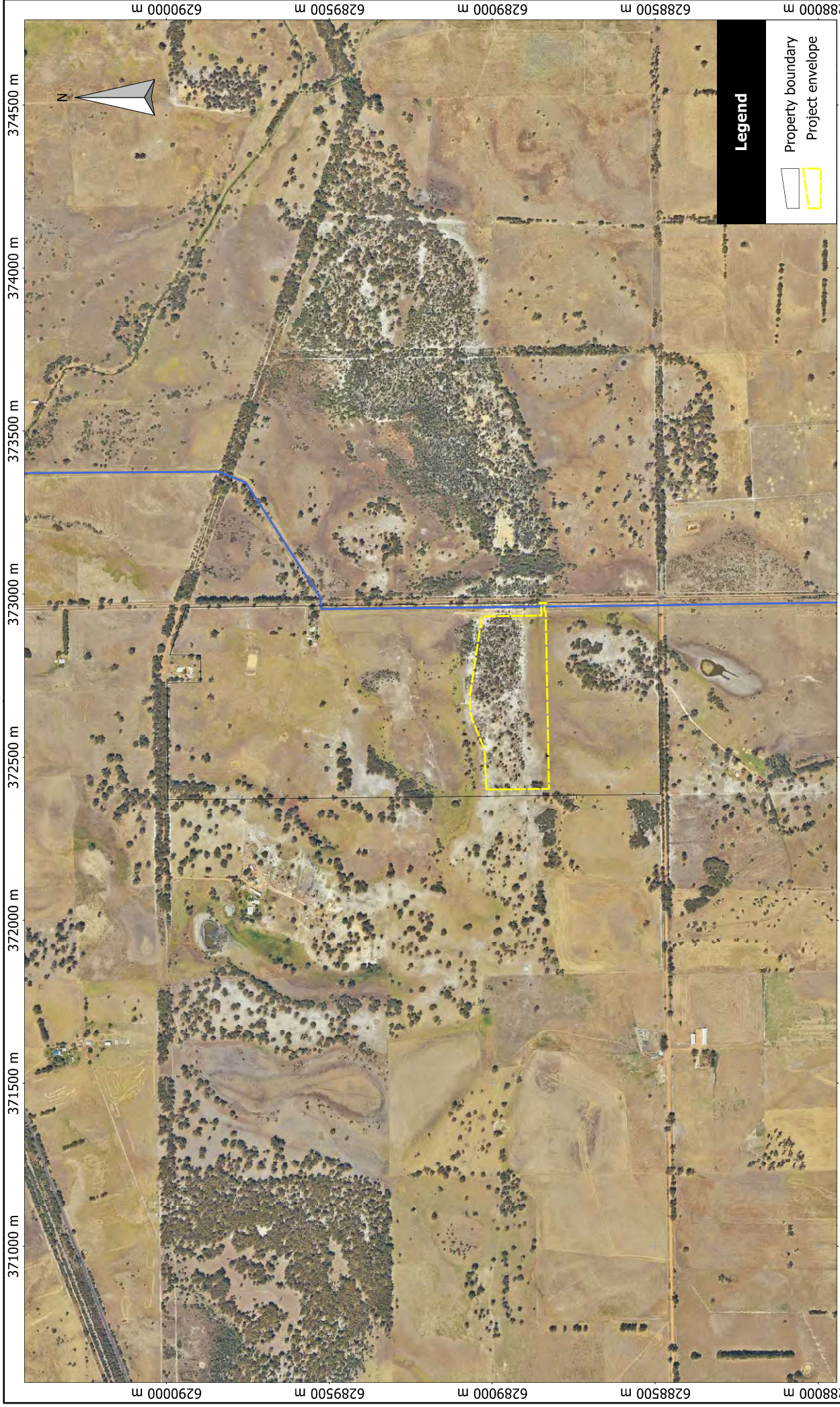
Scale: 1:300000
 Original Size: A4
 Grid: MGA94(50)

Cowara Contractors Pty Ltd
 Lot 230 Elgin Road, Elgin

Figure 1
 Project Location

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Legend

- Property boundary
- Project envelope

Scale: 1:15000
 Original Size: A4
 Air Photo Date: March 2018
 Grid: Australia MGA94 (50)

Figure 2
Local Setting

Cowara Contractors Pty Ltd
 Lot 230 Elgin Road, Elgin
 Clearing Permit Application

F:\Kris\PROJECTS\Cowara\GIS\Clearing Permit\Lot 230 Elgin Rd CP Application Area.map 21/06/2020 F2 Local Setting A4L

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2. BACKGROUND

2.1 LOCATION

The project area is located on Lot 230 (on Plan 232802) Elgin Road, in Elgin, approximately 20 km south of Bunbury, in the Shire of Capel (Figure 1, Figure 2). The property is zoned rural in the Shire of Capel Town Planning Scheme and in the Greater Bunbury Region Scheme. The project envelope (11.4 ha) covers only part of Lot 230 that has total area of 87.76 ha. The majority of Lot 230 has been cleared and is currently grazed by cattle. The property also includes a residential dwelling approximately 480 m to the north. The proposed layout of the extractive project, covering approximately 11.4 ha, is provided in Appendix 1.

2.2 TENURE

Lot 230 is owned by Warwick Glen Grazing Pty Ltd (ACN 061 604 993, Director Stephen Thomas Duggan) and Molita Grove Grazing Pty Ltd (ACN 062 889 598, Director Hilton Oscar Yelverton). These entities are owned by the directors of Cowara Contractors. Certificate of Title is provided as Appendix 2. Applicants of the Clearing Permit are the landowners (Warwick Glen Grazing Pty Ltd and Molita Grove Grazing Pty Ltd).

2.3 ENVIRONMENTAL SETTING

2.3.1 Climate

The climate of the survey area is Mediterranean, with cool wet winters and hot dry summers. Long-term average climate data for the closest meteorological station (Bunbury, 20 km north of project) in Figure 3 show average annual rainfall of 718.4 mm, mean minimum temperatures between 7°C and 16°C and mean maximum temperatures between 17°C and 30°C (Bureau of Meteorology 2020).

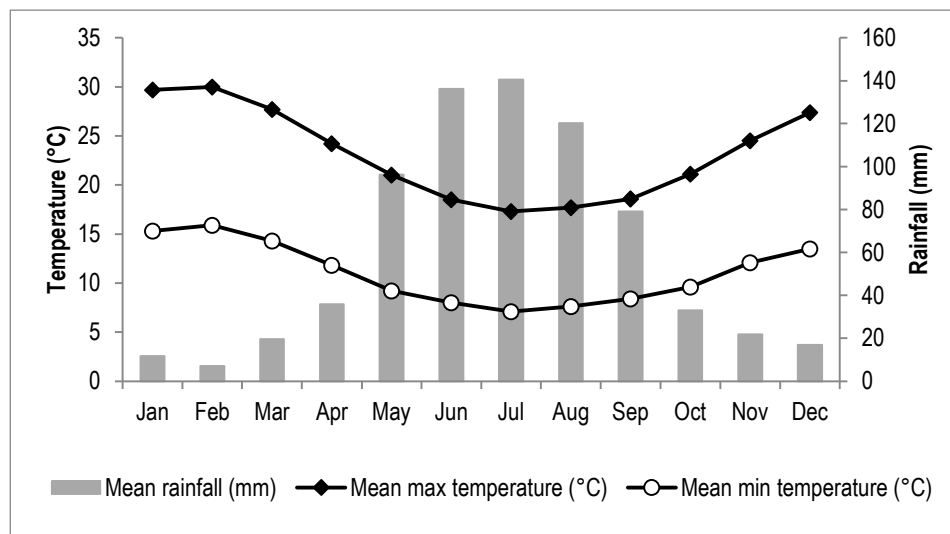


Figure 3: Long-term Rainfall and Temperature Data (1995-2020) for Bunbury Meteorological Station 9965 (Bureau of Meteorology 2020)

2.3.2 Regional Setting

The project area is located on the Swan Coastal Plain IBRA region and Perth (SWA2) sub-region. The sub-region comprises colluvial and aeolian sands, alluvial river flats and coastal limestone. Heath and/or Tuart woodlands occur on limestone, Banksia and Jarrah-Banksia woodlands on Quaternary marine dunes of various ages, and Marri on colluvial and alluvials. The sub-region also contains a complex series of seasonal wetlands (Mitchell et al. 2002).

2.3.3 Landform and soil

In soil landscape mapping, Lot 230 Elgin Road is located in the Pinjarra System (213Pj) (DPIRD-064) and in Pinjarra B1a Phase (DPIRD-027) that has been described as: extremely low to very low relief dunes, undulating sandplain and discrete sand rises with deep bleached grey sands with an intensely coloured yellow B horizon occurring within 1 m of the surface; marri and jarrah dominant (Government of Western Australia 2020).

The project area within Lot 230 is located on a low, east-west aligned sand hill. Ground surface level peaks at approximately 29 mAHD at the top of the hill and slopes down to approximately 25 mAHD along the southern and northern boundaries of the extraction area and 24 mAHD in the southern stockpiling areas.

2.3.4 Vegetation

The clearing application area is mapped as Bassendean vegetation system association (Bassendean_1000) (DPIRD-006), which is broadly described as a mosaic of Medium forest; jarrah-marri / Low woodland; banksia / Low forest; a Melaleuca species (DPIRD-006, Government of Western Australia 2020).

The clearing application area is also mapped as Southern River Complex (DBCA-046) described as Open woodland of *Corymbia calophylla* (Marri) – *Eucalyptus marginata* (Jarrah) - *Banksia* species with fringing woodland of *Eucalyptus rudis* (Flooded Gum) - *Melaleuca raphiophylla* (Swamp Paperbark) along creek beds (Government of Western Australia 2020).

Site inspections by MBS Environmental in May-June 2020 (Appendix 3) indicated that:

- The majority of the vegetation proposed to be cleared comprises open woodland of *Eucalyptus marginata*, *Banksia attenuata*, *Banksia ilicifolia*, *Xylomelum occidentale* and *Nuytsia floribunda* over patches of *Kunzea glabrescens* over bare ground and weeds.
- In the lower lying areas in the southern part, there are isolated *Corymbia calophylla* and *Agonis flexuosa* over pasture.
- The proposed drain crossing area contains regrowth *Kunzea* spp., *Acacia saligna*, *Melaleuca* spp. and *Astartea* sp. over weeds.

The condition of the vegetation within the project envelope is Completely Degraded; no longer intact, completely/almost completely without native species (using condition scale by Keighery, 1994). The project envelope shows signs of multiple historical disturbances including selective logging, clearing for pasture, draining, grazing and fire. Native understorey has been lost and replaced by introduced weed species, and upper storey density is low. Much of the native vegetation that remains is either dead or in poor health, likely due to dieback but also potentially due to water stress as the deep drain would have resulted in reduction in groundwater levels.

The occurrence of dieback (*Phytophthora cinnamomi*) is suspected due to gradual deaths of susceptible species (e.g. *Banksia* spp. and Jarrah). Much of the project envelope is completely cleared and the occurrence of dieback in these cleared areas cannot be ruled out. Thus the entire project area should be considered as potentially dieback infected.

Due to the Completely Degraded condition of the vegetation within the project envelope, it is no longer considered representative of the original vegetation community of the area. As such, the vegetation is not representative of any

state or federally listed Threatened or Priority Ecological Communities (TEC or PEC) with potential to occur in the local area (e.g. Banksia Woodlands of the Swan Coastal Plain TEC or PEC).

The areas surrounding the sandhill have been mapped as a multiple-use palusplain wetland (ID 15809; totalling over 42,000 ha in size) and a smaller multiple-use sumpland (ID 1309; 7.47 ha) (DBCA-019, Government of Western Australia 2020). Both wetlands have been mostly cleared of native vegetation in the vicinity of the proposed clearing area and are used for grazing, in line with their rural zoning. The hydrology of the area has been significantly modified by the deep drain along the eastern side of the property that continues to maintain lower than natural surface and ground water levels in the area.

The closest Environmentally Sensitive Area is located approximately 750 m to the southeast, with another approximately 1 km to the northeast of the proposed clearing area.

2.4 ABORIGINAL HERITAGE

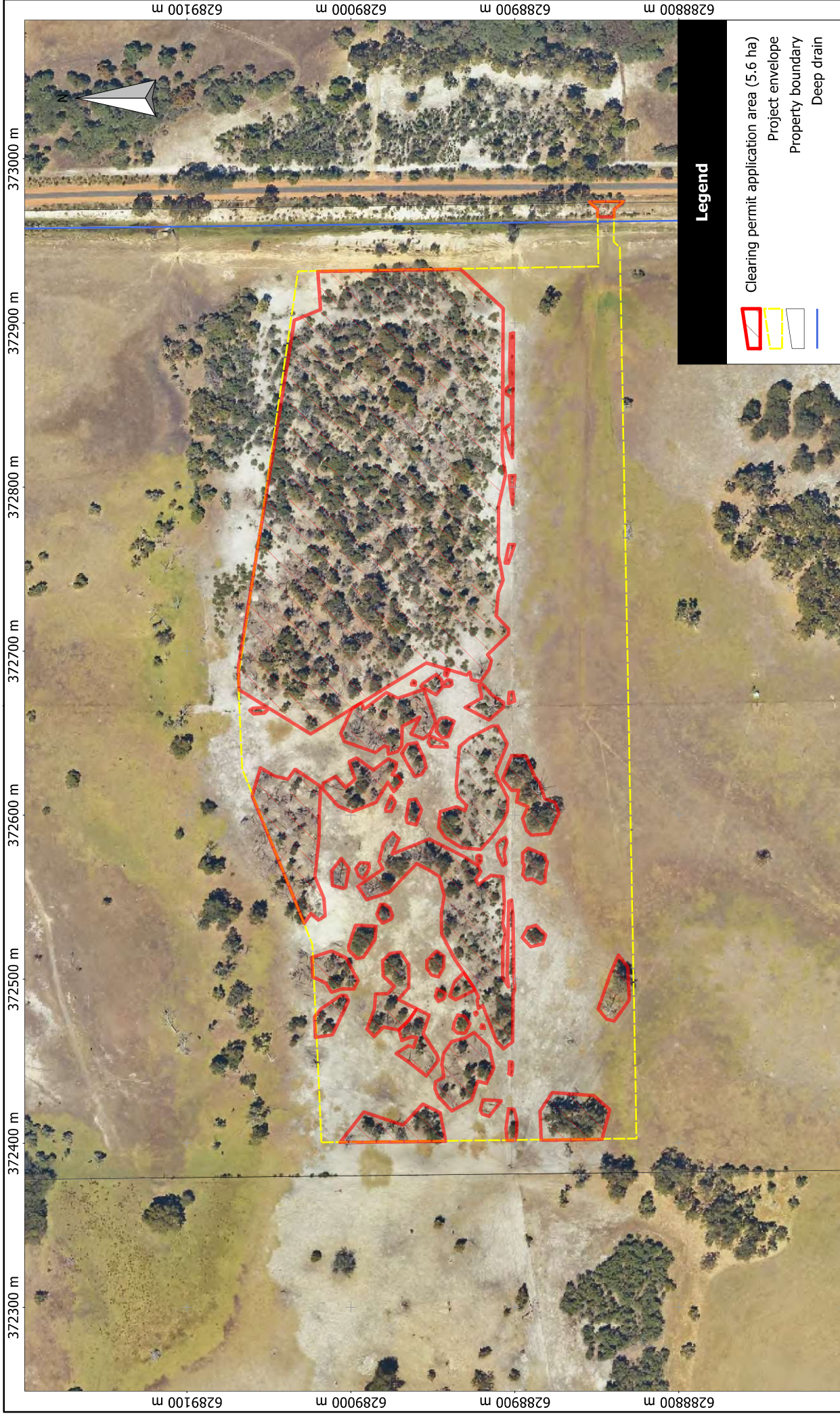
There are no registered aboriginal heritage sites or other heritage places within or in the immediate vicinity of the proposed clearing area (Department of Planning, Lands and Heritage 2020).

3. PROPOSED CLEARING





The project requires clearing of up to 5.6 ha of native vegetation within a total project envelope of approximately 11.4 ha, as shown in Figure 4. The currently proposed project design is provided as Appendix 1.

The majority of the vegetation to be cleared represents Jarrah-Banksia woodland (5.32 ha) with some isolated Marris and Peppermints (0.27 ha) and small patch of regrowth Kunzea and other species along the drain (0.01 ha) at the access track crossover (Figure 5).

The vegetation is proposed to be removed mechanically, stockpiled and burned unless agreed otherwise with DWER. Following sand extraction, the cleared areas will be rehabilitated to pasture.



Legend

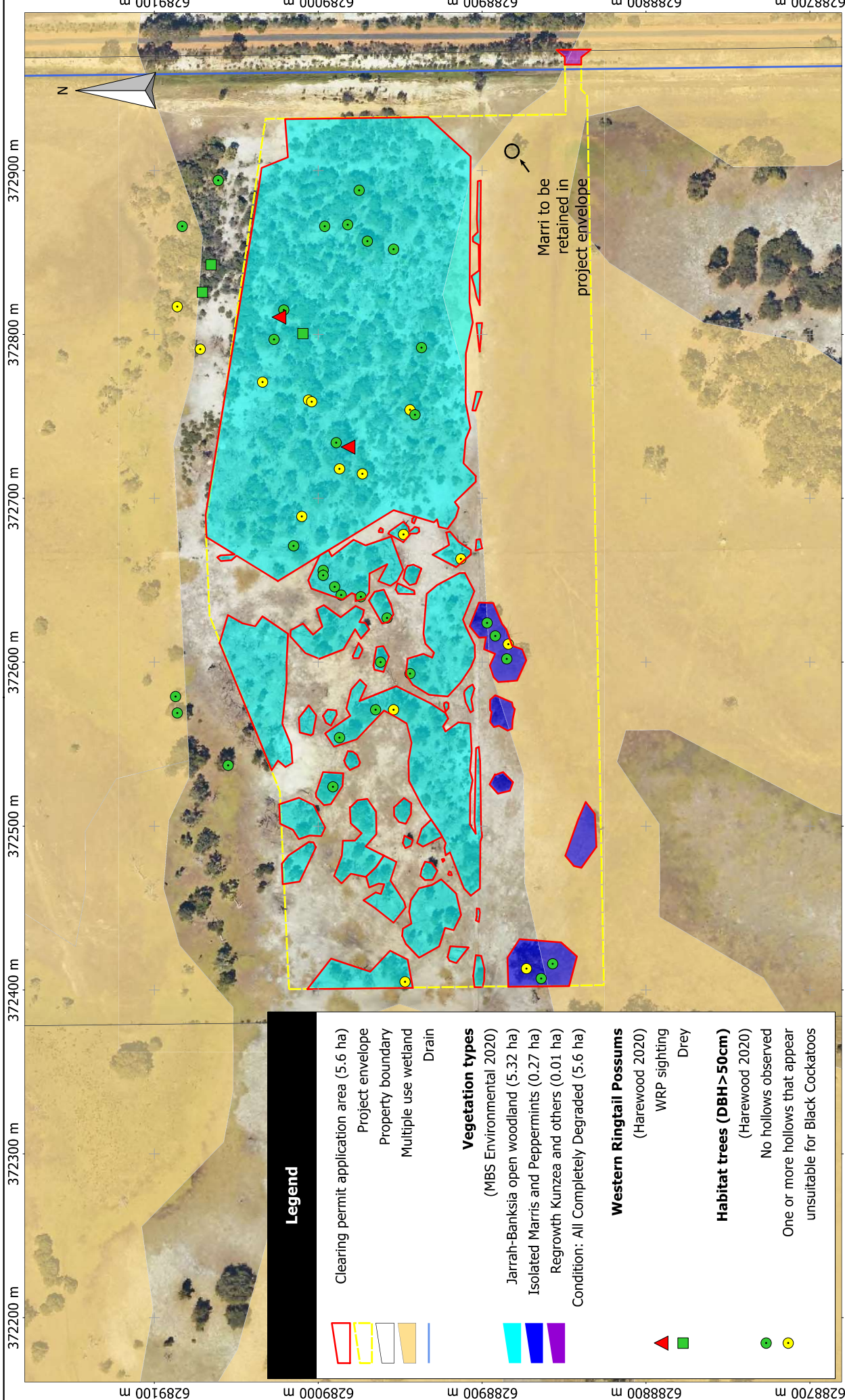
-  Clearing permit application area (5.6 ha)
-  Project envelope
-  Property boundary
-  Deep drain

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Figure 4
Proposed Clearing Area

Cowara Contractors Pty Ltd
 Lto 230 Elgin Road, Elgin
 Clearing Permit Application

Scale: 1:3000
 Original Size: A4
 Air Photo Date: March 2018
 Grid: Australia MGA94 (50)



Legend

- Clearing permit application area (5.6 ha)
- Project envelope
- Property boundary
- Multiple use wetland
- Drain

Vegetation types
(MBS Environmental 2020)

- Jarrah-Banksia open woodland (5.32 ha)
- Isolated Marris and Peppermints (0.27 ha)
- Regrowth Kunzea and others (0.01 ha)
- Condition: All Completely Degraded (5.6 ha)

Western Ringtail Possums
(Harewood 2020)

- WRP sighting
- Drey

Habitat trees (DBH > 50cm)
(Harewood 2020)

- No hollows observed
- One or more hollows that appear unsuitable for Black Cockatoos

Scale: 1:3000
Original Size: A4
Air Photo Date: March 2018
Grid: Australia MGA94 (50)

0 100 m

F:\Kris\PROJECTS\Cowara\GIS\Clearing Permit\Lot 230 Elgin Rd CP Application Area.map 21/06/2020 Vegetation and Fauna A4L

Figure 5
Vegetation and Fauna

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Lot 230 Elgin Road, Elgin
Clearing Permit Application

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4. ASSESSMENT OF CLEARING PRINCIPLES

Clearing applications are assessed against 10 principles outlined in Schedule 5 of the *Environmental Protection Act 1986* (EP Act). These principles aim to ensure that all potential impacts resulting from removal of native vegetation are assessed in an integrated way and apply to all lands throughout Western Australia.

The following sections provide an assessment of the impacts of the proposed clearing against the clearing principles. Where relevant, reference is made to the state *Biodiversity Conservation Act 2016* (BC Act) and the federal *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

In summary, this assessment found that the proposed clearing is unlikely to be at variance to any of the clearing principles.

4.1 BIODIVERSITY

Clearing principle (a): Native vegetation should not be cleared if it comprises a high level of biological diversity.
Assessment: Proposed clearing is not at variance to this principle.

The application is to clear up to 5.6 ha of native vegetation on Lot 230 Deposited Plan 232802 in Elgin for the purposes of sand extraction (Figure 5). Approximately 5.32 ha comprises open woodland of *Eucalyptus marginata*, *Banksia attenuata*, *Banksia ilicifolia*, *Xylomelum occidentale* and *Nuytsia floribunda* over patches of *Kunzea glabrescens* over bare ground and weeds. In the lower lying areas in the southern part, there are isolated *Corymbia calophylla* and *Agonis flexuosa* over pasture (totalling 0.27 ha). The proposed drain crossing area contains regrowth *Kunzea* spp., *Acacia saligna*, *Melaleuca* spp. and *Astartea* sp. over weeds (totalling 0.01 ha). Site inspection report by MBS Environmental (2020) is provided as Appendix 3.

The condition of the vegetation within the project envelope was recorded as Completely Degraded (following scale by Keighery 1994) during the site inspections by MBS Environmental in 2020 (Appendix 3). The project envelope shows signs of multiple historical disturbances including selective logging, clearing for pasture, draining, grazing and fire. Native understorey has been lost and replaced by introduced weed species, and upper storey density is low. Much of the native vegetation that remains is either dead or in poor health, likely due to dieback but also potentially due to water stress as the deep drain would have resulted in reduction in groundwater levels.

Due to the Completely Degraded condition of the vegetation proposed to be cleared, it is no longer considered representative of the original vegetation community of the area. As such, the vegetation is not representative of any state or federally listed Threatened or Priority Ecological Communities (TEC or PEC) with potential to occur in the area (e.g. *Banksia* Woodlands of the Swan Coastal Plain TEC and PEC).

A search of the NatureMap database (Appendix 4) found known records of seven threatened, one Priority 1, one Priority 2, six Priority 3 and three Priority 4 flora species within 5 km of the project area. EPBC Protected Matters Search Tool (Appendix 5) also indicated potential occurrence of threatened flora species in the local area. Considering the Completely Degraded condition of the vegetation proposed to be cleared, particularly the lack of native understorey, it is unlikely that the clearing area includes threatened or priority flora species and none were observed during the site inspections. Consequently, the proposed clearing is unlikely to impact on any threatened or priority flora.

A search of NatureMap (Appendix 4) indicated the occurrence of a range of fauna species in the local area. However, considering the Completely Degraded condition of the vegetation, the lack of native understorey and the limited canopy connectivity, the vegetation proposed to be cleared provides limited fauna habitat and fauna diversity is expected to be low. Impacts on fauna that do occur on site are further assessed under principle (b) however the area does not comprise a high level of faunal biodiversity.

Given the above, the application area is unlikely to comprise a high level of biological diversity. The proposed clearing is not at variance to clearing principle (a).

4.2 SIGNIFICANT FAUNA HABITAT

Clearing principle (b): Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Assessment: Proposed clearing is unlikely to be at variance to this principle.

The main fauna habitat type present within the proposed clearing area consists of an open woodland containing jarrah (*Eucalyptus marginata*), marri (*Corymbia calophylla*), candlestick banksia (*Banksia attenuata*), holly-leaved banksia (*Banksia ilicifolia*), woody pear (*Xylomelum occidentale*), Christmas tree (*Nuytsia floribunda*) and peppermint (*Agonis flexuosa*) in various densities over small areas of spearwood (*Kunzea glabrescens*) on a low sandy hill (Harewood 2020; see full report in Appendix 6).

The overall fauna habitat quality of the proposed clearing area is very low due to its completely degraded condition and in particular the lack of native ground cover (Harewood 2020). The fauna assemblage present would therefore be depauperate, in particular in relation to ground dwelling reptile and mammal species. The remnant is also relatively isolated given that the majority of surrounding areas have been cleared and fragmented with poor connectivity. Also, the deep drain running north-south along the eastern property boundary, restricts connectivity.

The following significant fauna species were recorded within the proposed clearing area (Harewood 2020):

- Western Ringtail Possum (*Pseudocheirus occidentalis* - Critically Endangered under the BC Act and EPBC Act)
- Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso* - Vulnerable under the BC Act and EPBC Act)

The survey (Harewood 2020) also indicated that the area provides potential habitat for Baudin's black cockatoo (*Calyptorhynchus baudinii* - Endangered under the BC Act and EPBC Act) and Carnaby's black cockatoo (*Calyptorhynchus latirostris* - Endangered under the BC Act and EPBC Act). Further details are provided below. The term black cockatoos is used to refer to all three species mentioned above.

The fauna survey (Harewood 2020) identified 47 black cockatoo suitable DBH trees (DBH>50 cm), of which 40 are within the proposed clearing area (Figure 5). Twenty-seven of the 40 trees did not appear to contain hollows of any size. Thirteen were assessed as possibly having hollows, but of a likely size or orientation that was deemed unsuitable for black cockatoos to utilise. No tree appeared to contain hollows possibly large enough for black cockatoos to use for nesting. None of the hollows observed in the fauna survey showed conclusive signs of use by any fauna.

Evidence of black cockatoos foraging was observed during the field survey in the form of chewed marri fruits (Harewood 2020). This evidence was attributed to the forest red-tailed black cockatoo based on the nature of the debris (i.e. bite marks). Much of the remnant native vegetation within the survey area can be regarded as foraging habitat for black cockatoos given the presence of jarrah, marri and banksia in various concentrations. The extent of foraging habitat is estimated to total about 3.0 ha with some additional contribution from some scattered tree specimens noting the quality and condition is of limited value.

No existing roosting trees (trees used at night by black cockatoos to rest) were positively identified during the survey (Harewood 2020).

Based on available vegetation mapping it is estimated that there is approximately 19,000 ha of native vegetation within 12 km the survey area, much of which is very likely to represent potential black cockatoo breeding, foraging and roosting habitat (Harewood 2020). The proposed clearing would remove only 0.03% of this vegetation and there are several patches in better condition than that proposed to be cleared.

Western Ringtail possum dreys and scats were located within the survey area during the daytime inspection (Harewood 2020). One of the dreys is proposed to be cleared. A total of three western ringtail possums were

observed during the nocturnal survey of the site. No evidence of the western ringtail possum was observed in the western part of the project envelope that has a lower density of trees. The proposed clearing area has been mapped as having 'medium' habitat suitability for the western ringtail possum (DBCA-049; Government of Western Australia 2020). A larger area of similar habitat is available on the adjacent property on the eastern side.

Overall, considering the Completely Degraded condition of the vegetation and the relatively small scale of the proposed clearing, the application is unlikely to have significant impacts on most fauna species inhabiting the local area. The proposed clearing area may provide some limited foraging habitat for threatened black cockatoos and western ringtail possum utilise the area, however as the area is extensively cleared and lacking full vegetation and habitat value, it is not considered significant fauna habitat. Therefore, the proposed clearing is unlikely to be at variance to clearing principle (b).

4.3 SIGNIFICANT FLORA

Clearing principle (c): Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Assessment: Proposed clearing is not at variance to this principle.

A search of the NatureMap database (Appendix 4) indicates of the potential for seven state listed threatened flora species to occur in the local 5km area. Considering the Completely Degraded condition of the vegetation proposed to be cleared and the lack of native understorey, the application area is not likely to include, or be necessary for the continued existence of threatened flora species.

Given the above, the proposed clearing is not at variance to this clearing principle.

4.4 THREATENED ECOLOGICAL COMMUNITIES

Clearing principle (d): Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.

Assessment: Proposed clearing is not at variance to this principle.

According to publicly available datasets (DBCA-038; Government of Western Australia 2020), potential state listed Threatened Ecological Communities (Banksia woodlands TECs) have been mapped in the local area. Considering the Completely Degraded condition of the vegetation proposed to be cleared, the application area is not likely to comprise the whole or part of, or be necessary for the maintenance of, a Threatened Ecological Community.

Given the above, the proposed clearing is not at variance to this clearing principle.

4.5 REMNANT VEGETATION

Clearing principle (e): Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Assessment: Proposed clearing is not at variance to this principle.

The national objectives and targets for biodiversity conservation in Australia have a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001). The proposed clearing area has been mapped as the Bassendean 1000 System Association (DPIRD-006) and the Southern River Complex (DBCA-046; Government of Western Australia 2020). As indicated in Table 1, the remaining extents of native vegetation within the bioregion and local government area are above the 30 per cent threshold, however the mapped system association and vegetation complex are below the 30 per cent threshold.

Noting the Completely Degraded condition of the vegetation in the application area and the lack of understorey species, the vegetation proposed to be cleared is no longer representative of the mapped system association or vegetation complex. Consequently, it is not significant as a remnant of native vegetation in an area that has been extensively cleared and the proposed clearing is not at variance to this clearing principle.

Table 1: Vegetation Extents (Government of Western Australia 2018a, 2018b)

Area Type	Pre-European Extent	Current Extent	Remaining	Current Extent in DBCA Managed Lands	
	(ha)	(ha)	(%)	(ha)	(%)
IBRA Bioregion: Swan Coastal Plain	1,501,221.93	579,813.47	38.62	222,916.97	14.85
Local Government Authority: Shire of Capel	55,945.03	18,585.28	33.22	8,474.99	15.15
System association: Bassendean 1000	88,077.18	23,647.51	26.85	4,482.45	5.09
Vegetation complex: Southern River Complex	58,781.48	10,832.18	18.43	940.36	1.60

4.6 WATERCOURSE OR WETLAND ENVIRONMENTS

Clearing principle (f): Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Assessment: Proposed clearing is not at variance to this principle.

According to available databases, part of the proposed clearing area has been mapped intersecting a multiple-use wetland (ID15809) as shown in Figure 5. This palusplain wetland surrounds much of the proposed clearing area, comprising a total area of approximately 42,000 ha. The wetland has been mostly cleared of native vegetation and is locally used for grazing, in line with the rural zoning. The hydrology of the area has been significantly modified by the deep drain along the eastern side of the property that continues to maintain lower than natural surface and ground water levels in the area. Multiple-use wetlands are considered to be wetlands that have few remaining important attributes, functions or values (Water and Rivers Commission 2001).

There are no watercourses within or immediately adjacent to the proposed clearing area. There is a deep (2-4 m below natural ground surface), man-made drain running north-south along the eastern property boundary. This drain flows north and connects to the Gynudup Brook approximately 1.7 km north-east from the project site. The drain is outside the main clearing area, but the proposed access track will cross it (Appendix 1) and will require clearing of some Completely Degraded native regrowth (approximately 0.01 ha) within Lot 230. This vegetation falls within the mapped extent of the multiple-use wetland (ID15809) discussed above however the wetland retains no natural functions.

While some of the vegetation proposed to be cleared is growing within the mapped extent of a wetland, this system is a highly disturbed, partly drained multiple-use wetland. Further, the vegetation is in a Completely Degraded condition and not representative of wetland-type vegetation. Based on this, it is considered that the vegetation proposed to be cleared is not growing in or in association with an environment associated with a wetland or watercourse given no natural wetland values remain.

Consequently, the proposed clearing is not at variance to this clearing principle.

4.7 LAND DEGRADATION

Clearing principle (g): Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Assessment: Proposed clearing is not likely to be at variance to this principle (g).

The proposed clearing area is located within Pinjarra B1a Phase (DPIRD-027; Government of Western Australia 2020). The area has low risk of land degradation in the form of waterlogging (DPIRD-015), water erosion (DPIRD-013), flooding (DPIRD-007), eutrophication (DPIRD-010) and salinity (DPIRD-009) (Government of Western Australia 2020). However, the risk of wind erosion (DPIRD-016) is relatively high. This can be managed through e.g. staged clearing, watering of dust generating surfaces and gradual rehabilitation to pasture.

The proposed clearing area has been mapped as having low to moderate risk of acid sulfate soils within 3 m of natural surface (DWER-055). There are no known contaminated sites within project area or in the vicinity (DWER-059; Government of Western Australia 2020).

Given the above and the relatively small size of the area, the proposed clearing is unlikely to cause appreciable land degradation. The proposed clearing is not likely to be at variance to this clearing principle (g).

4.8 CONSERVATION ESTATE

Clearing principle (h): Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Assessment: Proposed clearing is not at variance to this principle.

The closest conservation areas to the application area are the Tuart Forest National Park (7.5 km), the Boyanup State Forest (7.5 km) and the Capel Nature Reserve (8.5 km) (DBCA-011; Government of Western Australia 2020). Given the distance, the proposed clearing will not impact on the environmental values of these conservation areas.

Consequently, the proposed clearing is not at variance to this clearing principle.

4.9 SURFACE AND GROUNDWATER QUALITY

Clearing principle (i): Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Assessment: Proposed clearing is not likely to be at variance to this principle.

The surface and ground water hydrology of the proposed clearing area have been extensively modified through clearing and the construction of the drain. The proposed clearing of the small area of native vegetation is unlikely to make a significant difference on surface or groundwater quality. The extractive operations are required to maintain a buffer of at least 2 m to the highest groundwater level.

Given the above, the proposed clearing is not likely to be at variance to this clearing principle.

4.10 FLOODING POTENTIAL

Clearing principle (j): Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

Assessment: Proposed clearing is not likely to be at variance to this principle.

Considering the relatively small area proposed to be cleared and the low density of vegetation present, the clearing is unlikely to result in significant changes in hydrology that could impact on flooding. Further, the deep drain along the eastern property boundary assists with drainage in the vicinity of the proposed clearing.

Given the above, the proposed clearing is unlikely to cause, or exacerbate, the incidence or intensity of flooding. The proposed clearing is not likely to be at variance to this clearing principle.

5. CONCLUSION

The proposed clearing of up to 5.6 ha on Lot 230 Elgin Road was assessed as unlikely to be at variance to any of the ten clearing principles. Overall, given the small scale of the proposed clearing and the Completely Degraded condition of vegetation within the proposed clearing area, the impacts resulting from the proposed clearing will be minor and localised. All efforts will be made to minimise clearing and associated impacts to the environment. A suitably qualified and experienced fauna handler will be engaged to assist with the clearing operations to minimise impacts on fauna.

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