



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 10280/1
Permit Holder:	Stellar Contracting Services Pty Ltd
Duration of Permit:	From 14 February 2024 to 14 February 2033

The permit holder is authorised to clear *native vegetation* subject to the following conditions of this permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of dimension stone quarry operations.

2. Land on which clearing is to be done

Lot 1 on Plan 84693, Jerramungup

3. Clearing authorised

The permit holder must not clear more than 8.16 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

4. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 14 February 2029.

PART II – MANAGEMENT CONDITIONS

5. Clearing not authorised

The permit holder must not clear any riparian vegetation under this permit.

6. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

- avoid the clearing of *native vegetation*;
- minimise the amount of *native vegetation* to be cleared; and
- reduce the impact of clearing on any environmental value.

7. Weed and dieback management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds* and *dieback*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known *dieback* or *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared;
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared; and

8. Directional clearing

The permit holder must conduct clearing activities in a slow, progressive manner towards adjacent *native vegetation* to allow fauna to move into adjacent *native vegetation* ahead of the clearing activity.

9. Fencing (pre-clearing)

The permit holder must, prior to commencing clearing, construct a fence through Lot 1 on Plan 84693, Jerramungup, in the location cross-hatched red on Figure 1 of Schedule 1. The construction of the fence is subject to the following requirements:

- (a) Fences should allow for the movement of wildlife by being raised at least 15 centimetres from the ground.
- (b) Within one (1) month of installing the above fence, the permit holder must notify the CEO in writing that the fencing has been completed.
- (c) The permit holder must inspect the fence constructed in accordance with condition 9(a) of this permit every 12 months for the duration of this permit to ensure the fence is protecting adjacent native vegetation by excluding third parties and vehicles.
- (d) Where the permit holder identifies that the fence constructed in accordance with condition 9(a) of this permit is not protecting adjacent native vegetation by excluding third parties and vehicles, the permit holder must repair the fence.

10. Revegetation and rehabilitation

- (a) The permit holder must retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.
- (b) The permit holder must within 12 months of undertaking clearing authorised under this permit and no later than 14 February 2030, revegetate and rehabilitate the areas no longer required for the purpose for which they were cleared under this Permit by:
 - (i) re-shaping the surface of the land so that it is consistent with the surrounding five metres of uncleared land;
 - (ii) ripping the ground on the contour to remove soil compaction;
 - (iii) deliberately *planting* tube stock and salvaged native vegetation;
 - (iv) ensuring planted tube stock is comprised of species suitable for foraging by

Carnaby’s cockatoo;

- (v) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area; and
 - (vi) undertake *weed* control activities on an ‘as needed’ basis to reduce *weed* cover within the cleared areas to no greater than the *weed* cover within the surrounding five (5) metres of uncleared land.
- (c) The permit holder must within 24 months of *planting* tube stock and salvaged vegetation in accordance with condition 10(b) of this permit:
- (i) engage an *environmental specialist* to make a determination as to whether the composition, structure and density of the revegetated areas will, without further revegetation, result in a similar species composition, structure and density to surrounding five (5) metres of uncleared land;
 - (ii) If the determination made by the *environmental specialist* under condition 10(c)(i) is that the revegetated areas will not result in a similar species composition, structure and density to that of the surrounding five (5) metres of uncleared land, the permit holder must *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation species that will result in a similar species composition, structure, and density of the surrounding five (5) metres of uncleared land.
- (d) Where additional *planting* or *direct seeding* of native vegetation is undertaken in accordance with condition 10(c)(ii), the permit holder must repeat the activities required by condition 10(b) within two years of undertaking the additional *planting* or *direct seeding* of native vegetation.

PART III - RECORD KEEPING AND REPORTING

11. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> (a) the species composition, structure, and density of the cleared area; (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 6; (f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> and <i>dieback</i> in accordance with condition 7; and

No.	Relevant matter	Specifications
		(g) actions taken to undertake slow, directional clearing in accordance with condition 8.
2.	In relation to fencing (pre-clearance) pursuant to condition 9	(a) the location of the fence, recorded using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings; and (b) actions taken to inspect and repair the fence to ensure the fence is excluding third parties and vehicles.
3.	In relation to rehabilitation and revegetation pursuant to condition 10	(a) the location of any areas <i>revegetated and rehabilitated</i> , recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA20), expressing the geographical coordinates in Eastings and Northings or decimal degrees; (b) a description of the <i>revegetation and rehabilitation</i> activities undertaken; (c) the size of the area <i>revegetated and rehabilitated</i> (in hectares); (d) the species composition, structure and density of <i>revegetation and rehabilitation</i> , and (e) a copy of the <i>environmental specialist's</i> report.

12. Reporting

The permit holder must provide to the *CEO* the records required under condition 11 of this permit when requested by the *CEO*.

DEFINITIONS

In this permit, the terms in Table 2 have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
fill	means material used to increase the ground level, or to fill a depression.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
direct seeding	means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species.

Term	Definition
environmental specialist	means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of two (2) years work experience relevant to the type of environmental advice that an environmental specialist is required to provide under this permit, or who is approved by the CEO as a suitable environmental specialist.
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
local provenance	means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same IBRA subregion of the area cleared.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
optimal time	means the period from May to June for undertaking planting and April to May for undertaking direct seeding.
planting	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species.
rehabilitate / rehabilitated / rehabilitation	means actively managing an area containing native vegetation in order to improve the ecological function of that area.
revegetate / revegetated / revegetation	means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
weeds	means any plant – (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i> ; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS



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Ryan Mincham
 MANAGER
 NATIVE VEGETATION REGULATION

*Officer delegated under Section 20
 of the Environmental Protection Act 1986*

22 January 2024

Schedule 1

The boundary of the area authorised to be cleared (cross-hatched yellow) and the area subject to conditions (cross-hatched red) is shown in the map below (Figure 1).

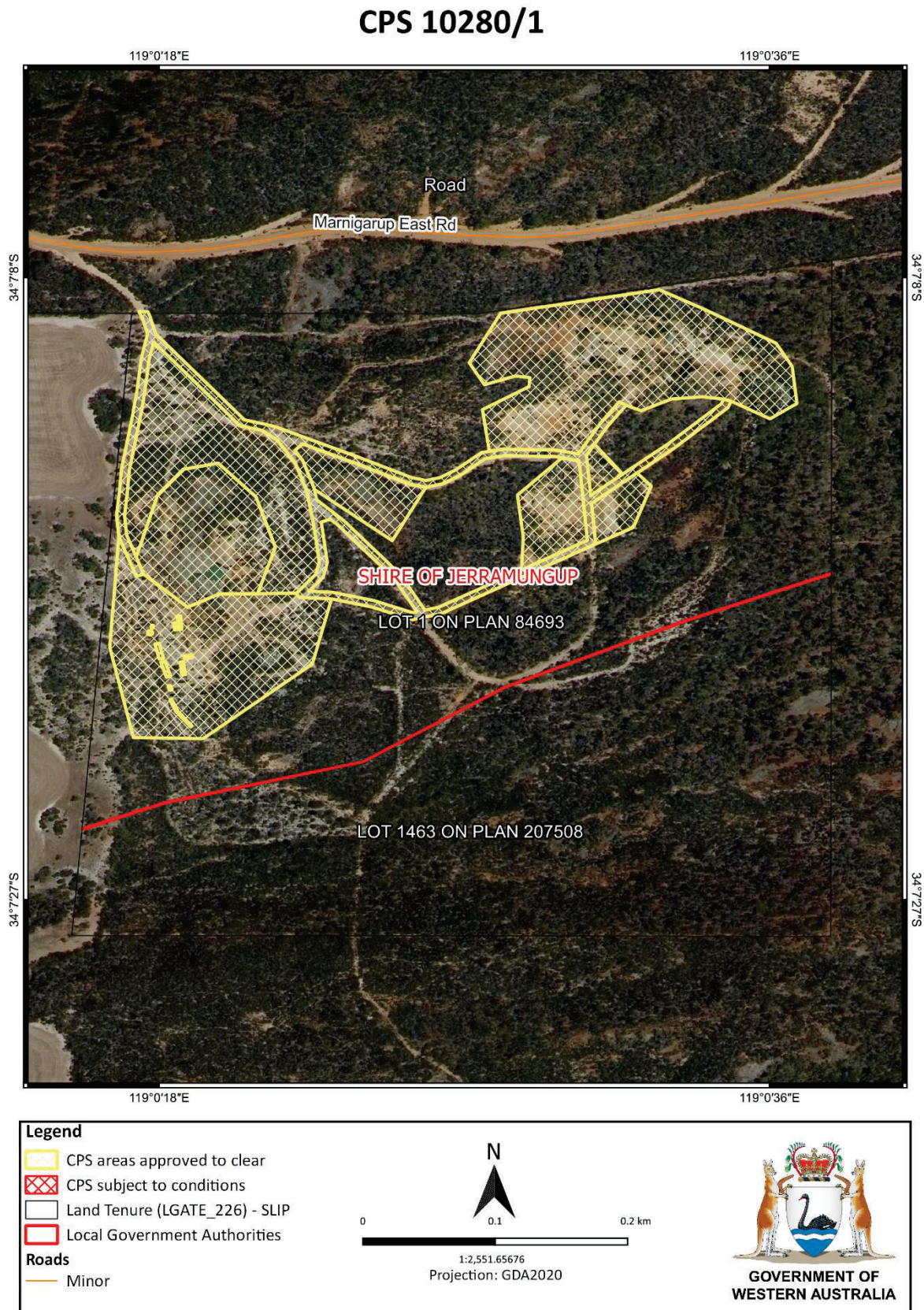


Figure 1: Map of the boundary of the area within which clearing may occur and the area subject to conditions.



Clearing Permit Decision Report

1 /1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10280/1
Permit type:	Purpose permit
Applicant name:	Stellar Contracting Services Pty Ltd
Application received:	24 July 2023
Application area:	8.36 hectares (as revised)
Purpose of clearing:	Dimension stone quarry
Method of clearing:	Mechanical
Property:	Lot 1 on Diagram 84693
Location (LGA area/s):	Shire of Jerramungup
Localities (suburb/s):	Jerramungup

1.2. Description of clearing activities

The vegetation proposed to be cleared is predominantly regrowth contained within an existing disturbance footprint from previous quarry operations surrounded by remnant native vegetation and agricultural lands (see Figure 1, Section 1.5). The application is to mainly clear the regrowth native vegetation plus small additional areas of remnant native vegetation to recommence dimension stone quarry operations.

The previous quarry has not been operational since 2004 and has largely been left untouched with no significant revegetation undertaken. The existing disturbance footprint includes (Stellar, 2023):

- four granite quarries with open voids and no safety bunds
- numerous small stockpiles of reject granite blocks
- overburden stockpiles and costean pushings
- large laydown areas cleared for quarry purposes
- numerous access tracks
- areas cleared that may have been grazing paddocks
- historical infrastructure (sea container and derelict caravan)
- derelict earthmoving machinery; and
- a large array of remnant scrap material.

Clearing for the quarry operations may include (Stellar, 2023):

- camp area infrastructure for staff
- laydowns and hardstands
- quarrying and working areas; and
- access roads.

The proposed clearing footprint was amended during assessment to account for the inclusion of a conservation buffer and fencing between the proposed clearing and threatened flora found within the property.

1.3. Decision on application

Decision:	Granted
Decision date:	22 January 2024
Decision area:	8.16 hectares of native vegetation as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix H.1), the findings of a Threatened Ecological Community Assessment and targeted flora survey (see Appendix F), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration that the applicant intends to undertake the majority of clearing and quarrying activities within the already existing disturbance footprint to avoid clearing within adjacent better condition vegetation.

The assessment identified that the proposed clearing will result in:

- the loss of suitable foraging habitat for Carnaby's cockatoo (*Zanda latirostris*)
- the loss of native vegetation that forms part of an ecological linkage within a highly cleared landscape
- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values
- the loss of suitable habitat for the threatened flora species, Jerramungup myoporum (*Myoporum cordifolium*)
- indirect impacts to the water quality of the Bremer River; and
- the loss of native vegetation growing in, or in association with a watercourse.

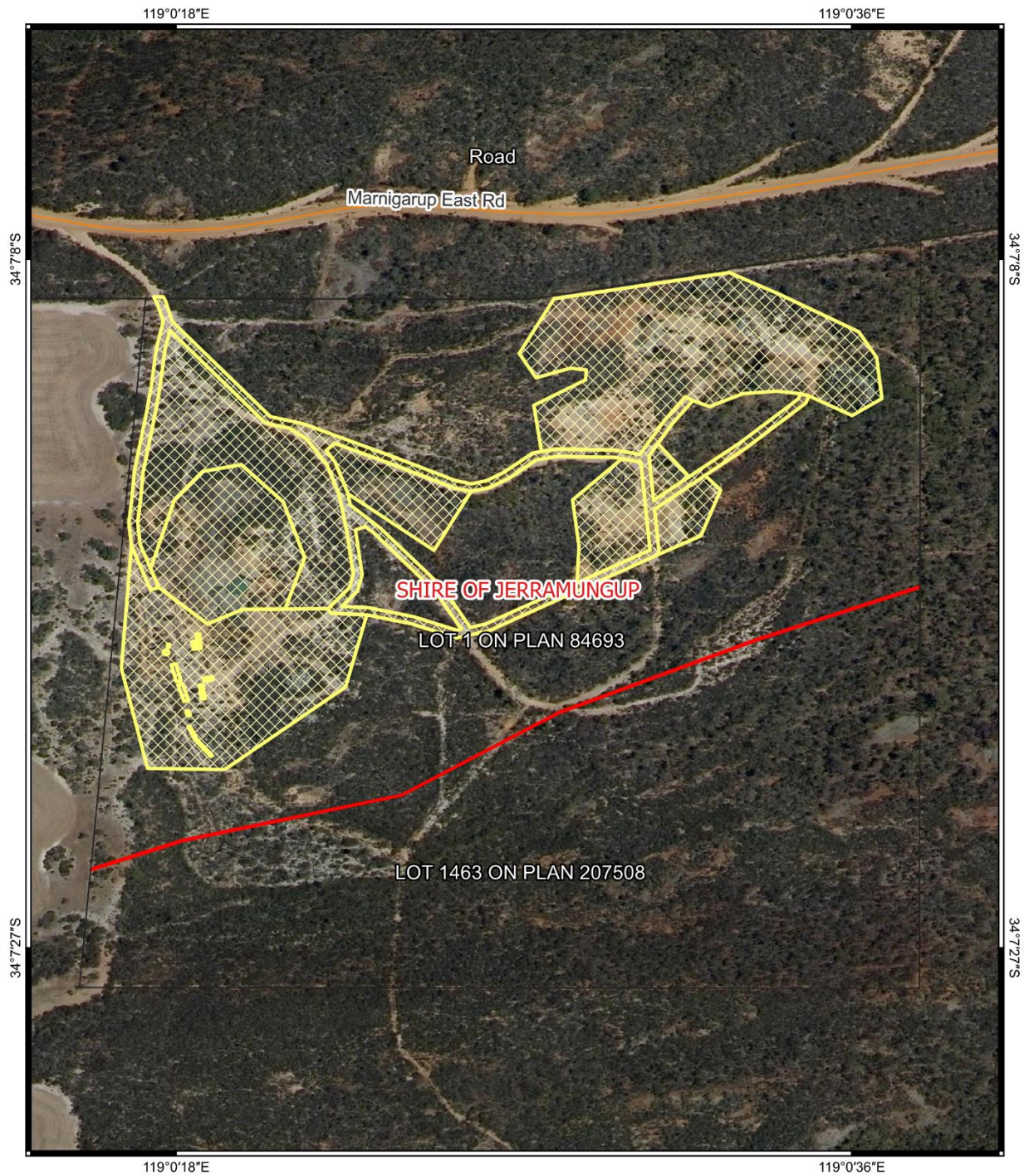
After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely have long-term adverse impacts on environmental values and can be minimised and managed to unlikely lead to an unacceptable risk to environmental values. The applicant has suitably demonstrated avoidance and minimisation measures (see Section 3).

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity
- fencing between the proposed clearing area and the records of *M. cordifolium* to avoid indirect impacts;
- prevent clearing of riparian vegetation; and
- retain cleared vegetation and topsoil and revegetate and rehabilitate areas within 12 months of clearing to ensure Carnaby's cockatoo habitat is not permanently lost.

1.5. Site map

CPS 10280/1



Legend

- CPS areas approved to clear
- CPS subject to conditions
- Land Tenure (LGATE_226) - SLIP
- Local Government Authorities

Roads

- Minor

0 0.1 0.2 km
1:2,551.65676
Projection: GDA2020

GOVERNMENT OF WESTERN AUSTRALIA

Figure 1. Map of the application area

The areas cross-hatched yellow indicate the areas authorised to be cleared under the granted clearing permit. The areas cross-hatched red indicates the area within which specific conditions apply.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the polluter pays principle
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant has demonstrated a number of measures that have been implemented to avoid and minimise the requirement for clearing native vegetation including:

- Designing the layout of the quarry primarily over the existing disturbance footprint and cleared areas to avoid clearing additional native vegetation wherever possible; and
- Wherever possible, trees (exotic and native) and large shrubs will be retained.

Since the quarry has been inoperative for an extended period of time, regrowth, bare areas, and uncleared native vegetation are interspersed within the disturbance footprint and the applicant advised that it was not practical to map specific areas of native vegetation to be cleared. The applicant has included the full site layout within the application as a precautionary measure and expects that the actual clearing will be smaller since the majority of clearing is intended to occur within the quarrying areas.

The preliminary assessment identified that two species of threatened flora may have suitable habitat within the proposed clearing (see Section 3.2.3). A targeted flora survey identified a previously unrecorded population of *Myoporum cordifolium* (Jerramungup myoporum) located within the property, outside of the clearing footprint. To avoid direct and indirect impacts to the population, the applicant has committed to the following avoidance and mitigation measures (Stellar, 2023c):

- Site layout will be adjusted to maximise distance between quarrying activities and recorded locations of *M. cordifolium* (see Appendix E);
- no surface disturbance south of the minor drainage line that transects the property, including a 50 m conservation buffer extending north of the drainage line;
- the conservation buffer will be fenced (see Appendix E) with signage stating 'no disturbance exclusion area';
- existing access roads towards the records will be blocked off and rehabilitated;
- awareness training for not disturbing the *M. cordifolium* populations will be included in site induction procedures; and
- a Standard Work Practice (SWP) for the protection of *M. cordifolium* will be developed, issued to site personnel and posted on the site notice board.

The preliminary assessment identified that the proximity of the proposed clearing to the Bremer River may impact on surface water quality of the river. To minimise the risk of impacting surface water, the applicant has committed to installing drains, berms, interceptor banks, sumps and windrows so that runoff from clearing and quarrying activities will not enter the river or the drainage line. Furthermore, the conservation buffer will further minimise the risk of

contaminated water from entering the drainage line since it is located approximately 50 m south of the proposed fence.

Part of the Applicant's conditions for the Extractive Industry Licence is to develop and implement a rehabilitation and decommissioning plan (Stellar, 2023b). Planned post-quarrying land-use is as follows (Stellar, 2023b):

- Granite outcrop habitat - The quarries will be partially backfilled as stable rocky areas that will be landscaped to be similar to the surrounding granite outcrops. Blocky waste rock in the form of medium to large boulders and topsoil will be backfilled against the quarry face to create a rocky scree slope that could provide sheltering and denning habitat for a variety of fauna species. The topsoil will support the return of native vegetation.
- Restoration of natural bushland environment – The infrastructure areas, workshop areas, block laydown areas and roads will be restored to a natural environment similar to the pre-quarrying condition. All plant, equipment and infrastructure removed, the entire area landscaped back to original contours, covered with topsoil and deep ripped. Roads will have windrows graded back in and the entire area landscaped to original contours, covered with topsoil and deep ripped.

The preliminary assessment further identified that the proposed clearing area may contain suitable foraging and roosting habitat for black cockatoos. It was determined that given the history of disturbance within the site and the presence of better quality vegetation surrounding the application area, the vegetation was unlikely to be significant habitat for Carnaby's cockatoo, however, the applicant has committed to the inclusion of suitable black cockatoo foraging species as part of their revegetation and rehabilitation of the site (Stellar, 2023c).

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix B) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix C) identified that the impacts of the proposed clearing present a risk to biological values (flora, fauna, adjacent vegetation), and land and water resources. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (threatened ecological community) - Clearing Principles (a) and (d)

Assessment

The proposed clearing is mapped within the Proteaceae dominated kwongkan shrublands of the southeast coastal floristic province of Western Australia (kwongkan shrublands) ecological community listed as Priority 3 ecological community (PEC) in Western Australia and as an endangered threatened ecological community (TEC) under the EPBC Act 1999.

This ecological community is found in the south coast region of WA dominated by flowering shrub species from the Proteaceae family (e.g. Banksia, Grevillea, Hakea). It is facing a high level of threat due to fragmentation that has resulted in a severe reduction in its integrity across its geographic distribution. Remaining areas of this TEC are vulnerable to the impacts of threats such as dieback due to *Phytophthora cinnamomi*, changing fire regimes, land clearing, invasive species, and climate change (Commonwealth of Australia, 2014).

The areas considered critical to the survival of the Kwongkan Shrubland TEC cover all patches that meet the key diagnostic characteristics and condition thresholds for the ecological community, and the buffer zones, particularly where this comprises surrounding native vegetation (Commonwealth of Australia, 2014). Approximately 619,577 hectares (52 per cent) of the extant of this ecological community occurs within large and significant reserves in southwest Western Australia, notably Stirling Range National Park, Fitzgerald River National Park, Cape Le Grand National Park and Cape Arid National Park.

The applicant commissioned a threatened ecological community assessment in April of 2019 to determine whether the kwongkan shrubland TEC was present within the application area and surrounding vegetation (Newland, 2019). It should be noted that the survey occurred outside of the flowering period of the region and had recently been burned, however, the community can be identified without flowering plants and the vegetation was assessed based on the likely pre-burnt condition of the site.

The assessment identified and mapped six vegetation types within the survey area in varying conditions (McQuoid, 2019) (See Appendix F):

- Mo woodland on loam - Woodland on granite derived loams of Mo or Swamp Yate (*Eucalyptus occidentalis*). Excellent condition, mostly undisturbed.
- Mallee shrubland on sand over clay duplex - Mallee shrubland on sand over clay duplex of hook-leaved mallee (*Eucalyptus uncinata*). Excellent to good condition, mostly excellent.
- Mallee shrubland on dark cracking loamy clay - Mallee shrubland over dark cracking clay of open-fruited mallee (*Eucalyptus annulata*) and *E. calycogona*. Excellent condition
- Shrubland on shallow and broken granite - Shrubland on shallow and broken granite of rock oak (*Allocasuarina huegeliana*), willyurwur or rock wattle (*Acacia lasiocalyx*) and one-sided bottlebrush (*Calothamnus quadrifidus*). Excellent to very degraded condition, mostly excellent.
- Low to medium shrubland on shallow granite - Low to medium shrubland on shallow granite of granite bottlebrush (*Melaleuca elliptica*), broombush (*M. hamata*) and *Thryptomene australis*. Good to very degraded condition.
- Altered community - Altered community containing medium and low shrublands of rock wattle, rock sheoak mallee (*E. sporadica*) and introduced trees of sugar gum (*E. cladocalyx*) and South Australian blue gum (*E. leucoxylon*). Very good to very degraded condition, mostly degraded.

Based on the vegetation described above, the kwongkan TEC is not present within the proposed clearing and the property. This can be attributed to the lack of proteaceous species identified within the property (McQuoid, 2019). Only two proteaceous species were identified within the survey, *Isopogon buxifolius* and *Hakea laurina*. Of these species, only *H. laurina* was recorded within the proposed clearing area and both were represented by a few individuals in the property (McQuoid, 2019). Therefore, it is considered it is unlikely that the proposed clearing area comprises vegetation indicative of the kwongkan shrubland TEC.

The TEC assessment identified that the vegetation outside of the proposed clearing area did not represent the kwongkan shrubland TEC (McQuoid, 2019), however, the vegetation represents a significant remnant within the local area and the proposed clearing may have indirect impacts on the habitat values of the vegetation by introducing and spreading weeds and dieback.

Conclusion

Based on the above assessment, the proposed clearing will not result in the clearing of a threatened ecological community. For the reasons set out above, it is considered that the impacts of the proposed clearing on adjacent native vegetation can be managed by taking steps to minimise the risk of the introduction and spread of weeds and dieback.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Hygiene conditions to minimise the introduction and spread of weeds and dieback

3.2.2. Biological values (fauna) - Clearing Principle (b)

Assessment

The desktop assessment identified 67 records across 12 species of conservation significant fauna within the local area (20-kilometre radius), six of which are birds and six are mammals. A likelihood assessment identified that seven of these species may have suitable habitat within the proposed clearing area and are assessed below.

Carnaby's cockatoo (EN)

While *Zanda latirostris* (Carnaby's cockatoo) was not identified in the desktop assessment, however, records of *Calyptorhynchus* sp. 'white-tailed black cockatoo' were and are most likely to be Carnaby's cockatoo since the mapped distribution of *Zanda baudinii* (Baudin's cockatoo) is over 75 km west of the proposed clearing. Furthermore, the proposed clearing is mapped within the known breeding distribution for Carnaby's cockatoo. Habitat requirements for Carnaby's cockatoos can be categorised as breeding habitat, night roosting habitat and foraging habitat. Five records of *Calyptorhynchus* sp. 'white-tailed black cockatoo' are recorded within the local area, the nearest being 18.31 km east of the application.

Breeding Habitat

Carnaby's cockatoo generally breed in woodland or forest but are also known to breed in partially cleared woodland or forest and isolated trees. Carnaby's nest in hollows in live or dead trees of wandoo, including *Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah), *Eucalyptus diversicolor* (karri), *Eucalyptus wandoo* (wandoo), *Eucalyptus gomocephala* (tuart), *Eucalyptus rudis* (flooded gum), and other *Eucalyptus* spp. (DAWE, 2022). Tree species known to support breeding will either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species, suitable DBH is 500 mm (DAWE, 2022).

A review of available data revealed five breeding sites within 20-kilometres of the application area contained within the same remnant of vegetation, approximately 15.5 km north-west of the proposed clearing. None of the species recorded within the TEC assessment were identified as key breeding species for Carnaby's cockatoo (McQuoid, 2019) and given that the site has been cleared previously with limited regrowth, it is unlikely the application area would contain suitable breeding habitat.

Roosting habitat

During the non-breeding season, black cockatoos are known to forage within 20 km of night roosting habitat, though in some cases, foraging distances can be greater. According to available databases, there is one roosting site located approximately 16.45 km north-west of the proposed clearing.

Night roosting for Carnaby's cockatoo occurs generally in or near riparian environments, or natural and artificial permanent water sources. Any tall trees may provide roosting habitat, but particularly Flat-topped Yate (*Eucalyptus occidentalis*), Salmon Gum, Wandoo, Marri, Karri, Blackbutt, Tuart, introduced eucalypts and introduced pines (DAWE, 2022). The proposed clearing area may be suitable roosting habitat for Carnaby's cockatoo given the presence of both native and introduced eucalyptus species throughout the proposed clearing area (McQuoid, 2019) and the proximity of the application to the Bremer River.

Based on photographs provided by the applicant there are few tall trees within the proposed clearing area (see Appendix G) due to the history of disturbance within the site. Furthermore, the proposed clearing area is surrounded by areas of relatively undisturbed vegetation in much better condition and therefore the proposed clearing area is unlikely to be significant roosting habitat for Carnaby's cockatoo. The composition of the surrounding vegetation suggests that the proposed clearing area may have contained suitable roosting species prior to the original mining activities and therefore rehabilitation following the mine closure will mean that the habitat is not permanently lost.

Foraging

Carnaby's cockatoos forage on the seeds, nuts and flowers of a variety of plants, including Proteaceous species (Banksia, Hakea and Grevillea), as well as Allocasuarina and Eucalyptus species, marri and a range of introduced species (Commonwealth of Australia, 2022).

The proposed clearing is mapped within the Proteaceae dominated kwongan shrublands of the southeast coastal floristic province of Western Australia (kwongan shrubland) threatened ecological community (TEC). The kwongan shrubland TEC is considered to be a significant foraging habitat for Carnaby's cockatoos largely due to the prevalence of Proteaceous species (DAWE, 2022). As discussed in Section 3.2.1. the vegetation within the proposed clearing area is not likely to be representative of the kwongan shrubland TEC, however, suitable foraging species may still be present within the proposed clearing area.

Photographs provided by the applicant indicate that regrowth vegetation within the proposed clearing area is limited and the proposed clearing is located adjacent to better condition native vegetation, therefore, the application is not likely to compose of significant foraging habitat for black cockatoos. Given the composition of the surrounding vegetation, the proposed clearing likely contained suitable foraging habitat prior to disturbance. The inclusion of black cockatoo foraging species during the revegetation and rehabilitation of the site will mean that the habitat will not be permanently lost.

Malleefowl (VU) and western whipbird (EN or P4)

According to available databases, there are nine records of malleefowl (*Leipoa ocellata*) within the local area, the nearest being 0.54 km from the application area. Malleefowl are primarily found in semi-arid areas dominated by mallee shrublands and woodlands, however, may also be found in shrublands dominated by acacia, and occasionally in woodlands dominated by eucalypts such as *Eucalyptus wandoo* (Wandoo), *Corymbia calophylla* (Marri) and *Eucalyptus astringens* (Benshemesh, 2007). Malleefowl require abundant leaf litter and a sandy substrate for the successful construction of nest mounds (DPaW, 2016). Its remaining populations are highly fragmented due to extensive land clearing.

According to available databases there are two records of the western whipbird (*Psophodes nigrogularis*) and 22 records of the western whipbird (western mallee) (*Psophodes nigrogularis oberon*) within the local area. The nearest record is the western whipbird approximately 0.61 km from the application area. The western whipbird are currently restricted to the southern wheatbelt and central south coast and occurs in open mallee eucalypt woodland with a dense, tall shrub layer. Much of these populations are within remnant vegetation outside of conservation reserves.

The proposed clearing area is not likely to contain suitable habitat for either of these species. Photographs provided by the applicant (Appendix G) show a lack of vegetation structure for habitat, such as the dense tall shrub layer for the western whipbird and the abundant leaf litter for malleefowl understorey and leaf litter in the majority of the

proposed clearing area, however, given the close proximity of the records and the presence of adjacent native vegetation, these species may be occasional visitors to the site.

Marsupial species (VU and P4)

Chuditch (*Dasyurus geoffroi*) (VU) are known to occupy a range of habitats including jarrah forests, eucalypt woodlands, mallee shrublands and heathland (DEC, 2012). They require den resources such as tree hollows, hollow logs, burrows or rock crevices (DEC, 2012). According to available databases there is one record within the local area approximately 8.71 km from the application area.

Quenda (*Isodoon fusciventer*) (P4) are ground-dwelling marsupials, typically associated with forest or woodlands near watercourses, where understorey consists of dense scrub and leaf litter is abundant (DEC, 2012). According to available databases there are two records within the local area, the nearest being 17.63 km from the application area.

The tammar wallaby (*Notamacropus eugenii derbianus*) (P4) is usually associated with mallee and woodland in coastal scrub, heath, and dry sclerophyll forests (DBCA, n.d.a). According to available databases there are two records of the tammar wallaby within the local area, the nearest being 14.91 km from the application area.

The western brush wallaby (*Notamacropus irma*) (P4) is usually associated with tall open forests or woodlands that are seasonally damp with low grasses and open scrub (DBCA, n.d.b). According to available databases there are 17 records of the western brush wallaby within the local area, the nearest being 12.65 km from the application area.

Photographs from the applicant (Appendix G) shows that the majority of the proposed clearing area lack the habitat structure for these fauna species such as requirements for dense understorey, dens and grassland and therefore it is unlikely that the proposed clearing area would comprise significant habitat for ground dwelling fauna. Furthermore, given that the application area is surrounded by native vegetation, fauna that may be present within the clearing area will be able to move into adjacent habitat if slow, directional clearing is conducted.

Ecological linkage

The proposed clearing is mapped within the South Coast Macro Corridor (macro corridor) which is an ecological linkage strategy created to address habitat fragmentation by identifying a potential regional scale macro corridor of native vegetation from Israelite Bay to Albany (Wilkins et al., 2006). The macro corridor focuses on maintaining connection of vegetation to allow movement between conservation reserves and is composed of three strategic zones. The proposed clearing is located in Strategic Zone C which are areas considered to potentially provide habitat for wildlife at the local scale but requires closer assessment to determine its value for a regional scale Macro Corridor Network (Wilkins et al., 2006).

One of the most significant linkages within the macro corridor is the 'Forest to Fitzgerald Corridor' as it is the main linkage between Stirling Range National Park and Fitzgerald River National Park. It is considered to not be well connected and is largely composed of 'stepping stones' (Wilkins et al., 2006). The proposed clearing area is not mapped within this corridor; however, it is located within a large break within the linkage near Fitzgerald River National Park and therefore may have value supporting the corridor by acting as a 'stepping stone' for fauna to move safely through the gap.

Outside of the macro corridor, remnant vegetation mapping and aerial imagery of the application and surrounding areas suggests that the proposed clearing is located within one of the largest patches of remnant vegetation within the local area and function as part of an informal linkage that follows the Bremer River (Figure 2).

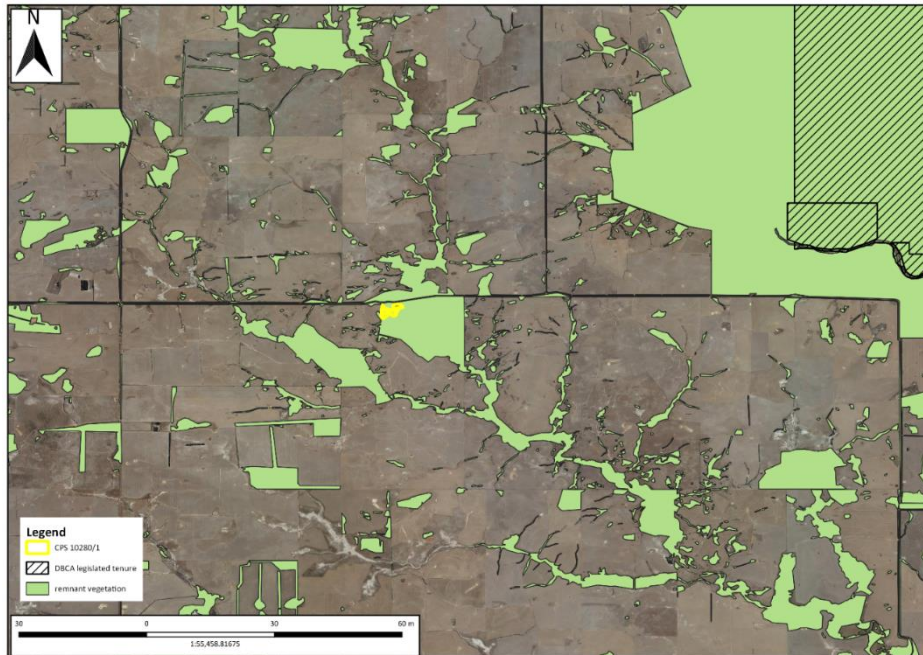


Figure 2. Remnant vegetation near the proposed clearing area

Given the long history of disturbance at the site, the proposed clearing is not likely to have a significant impact on ecological linkage values since the new operations are intended to remain within the already existing footprint. Furthermore, upon completion of quarry activities the site will be revegetated and rehabilitated with the aim of restoring the property to a natural landscape (Stellar, 2023) which will allow the site to contribute to the function of the linkage which has previously been left as bare areas with limited regrowth.

Despite the historical disturbance within the property, the surrounding vegetation's value as an ecological linkage means that fauna may visit the proposed clearing area, especially given that the site has been inactive for an extended period of time. Therefore, slow directional clearing is recommended to allow any fauna to move to adjacent vegetation.

The movement of machinery, vehicles, and staff within the property during clearing and post-clearing activities may introduce and spread weeds and dieback into the surrounding remnant vegetation which is important for maintaining ecological linkage value. Hygiene and weed management practices will be important to maintain this value.

Conclusion

Based on the above assessment, the proposed clearing does not constitute as significant habitat for threatened or priority fauna species.

For the reasons set out above, it is considered that the impacts of the proposed clearing on Carnaby's cockatoo foraging and roosting habitat and ecological linkage values can be managed by taking steps to minimise the risk of the introduction and spread of weeds and dieback, slow directional clearing to allow fauna to move into adjacent vegetation and rehabilitating the site post-extraction to ensure the habitat is not permanently lost.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Weed and dieback hygiene conditions
- Slow, directional clearing to allow fauna to move into adjacent vegetation; and
- Rehabilitating the site post-quarrying using a species mix suitable for black cockatoo roosting and foraging.

3.2.3. Biological values (threatened flora) - Clearing Principles (c)

Assessment

The desktop assessment identified 24 species of conservation significant flora within the local area, two of which are listed as threatened. Despite the history of disturbance within the property, the extended period of disuse may have allowed for threatened and/or priority flora to reestablish within the site.

***Caladenia bryceana* subsp. *bryceana* (T)**

Caladenia bryceana subsp. *bryceana* (dwarf spider orchid) is one of the smallest spider orchids in Western Australia and is listed as threatened under the BC Act and endangered under the EPBC Act. The desktop assessment identified 32 records of the species in the local area, the nearest being 16.79 km from the proposed clearing. The Recovery Plan for the dwarf spider orchid (DEC, 2009) lists the main threats to the species as weed invasion creating growth competition for soil and nutrients, introduced and native fauna grazing, and inappropriate fire regimes (DEC, 2009).

This species grows in open woodland of wandoo, yate, flooded gum or sheoak with sparse understorey and sandy clays to red loams over granite and is generally found in small, scattered populations (DEC, 2009). The preliminary assessment identified that the species may have suitable habitat within the proposed clearing based on the mapped and surveyed vegetation (See Appendix F) and the mapped soils.

Photographs (Appendix G) and vegetation condition mapping (Appendix F) provided by the applicant identified that the majority of the native vegetation found within the proposed clearing is in degraded to completely degraded (Keighery, 1994) condition as a result of historic disturbance from previous quarry activities and bush fires. A targeted search of the proposed clearing area and whole property was conducted on 28 September 2023 and did not identify any individuals of the dwarf spider orchid, likely due to the significant disturbance history within the site (McQuoid, 2023). Therefore, it is considered unlikely that the proposed clearing will impact on the occurrence or individuals of the dwarf spider orchid.

***Myoporum cordifolium* (T)**

Myoporum cordifolium (Jerramungup myoporum) is shrub with a distribution largely restricted between Ongerup and Jerramungup. Jerramungup myoporum is listed as threatened under the BC Act and vulnerable under the EPBC Act. The desktop assessment identified six records of the species within the local area, the nearest being 11.57 km from the application area.

The preliminary assessment identified that the mapped vegetation and soil types are suitable for Jerramungup myoporum. Furthermore, The Conservation Advice for Jerramungup myoporum (DEWHA, 2008) states that the species is found within disturbed sites, in particular, areas with clay loam or sandy loam that previously supported open eucalypt woodlands over tall shrubs. Given the mapped vegetation types and the surrounding vegetation, it is highly likely that the proposed clearing area would have previously been composed of eucalyptus woodland and therefore, considered to be suitable habitat for the species.

The main threats to Jerramungup myoporum are land clearing and weeds. While this species prefers areas of disturbance, continued disturbance may limit the species ability to colonise sites (DEWHA, 2008). A targeted search for this species within the proposed clearing area and the whole property was conducted on 28 September 2023. The search identified Jerramungup myoporum within the property, outside of the proposed clearing area (McQuoid, 2023). Given that the species is present within the property but not the proposed clearing area, it is likely that the site is too disturbed to be suitable for the Jerramungup myoporum.

While the records are located outside of the proposed clearing footprint, the proximity of the application to the records may make them susceptible to impacts from clearing and other activities associated with the mine such as the movement of machinery and people within the property, introduction and spread of weeds into the adjacent native vegetation, and contaminated runoff from mining activities. The applicant has committed to implementing several measures to avoid impacts to the population which are outlined within Section 3.1.

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of suitable habitat for *Myoporum cordifolium* and may introduce and spread weeds and dieback into the adjacent native vegetation containing *M. cordifolium* populations.

For the reasons set out above, it is considered that the impacts of the proposed clearing on threatened flora can be managed through the Applicant's avoidance and mitigation measures and by taking steps to minimise the risk of the introduction and spread of weeds and dieback, avoiding areas within the property containing the species and rehabilitating the site post-extraction to ensure the habitat is not permanently lost.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Weed and dieback hygiene management

- Installation of a fence along the property at a minimum 50 m north of the drainage line to avoid indirect impacts to *M. cordifolium* records
- Revegetating and rehabilitating the site post-quarry activities.

3.2.4. Land and water resources (watercourse and water quality) - Clearing Principles (f) and (i)

Assessment

One non-perennial tributary of the Bremer River intersects the south-western portion of the proposed clearing area. The Bremer River is also located in close proximity to the application, approximately 200 m east. The Bremer River is a major tributary within the Great-Southern Region and is surrounded by a variety of land use, including agriculture and National Park (Water and Rivers Commission, 2001).

The Bremer River and Devils Creek River Action Plan (Water and Rivers Commission, 2001) identifies some of the major issues facing the Bremer River which includes loss of riparian vegetation, weeds, erosion and salinity, breaks in the ecological corridor, and reduced water quality. The proposed clearing may have indirect impacts through the loss of riparian vegetation within the proposed clearing area.

Indirect impacts may also occur since, based on topographic mapping (Figure 3) the Bremer River is located within a valley downhill from the proposed clearing area meaning contaminated water from the application area would likely drain into the river which could lead to decreased surface water quality, and the introduction and spread of weeds.

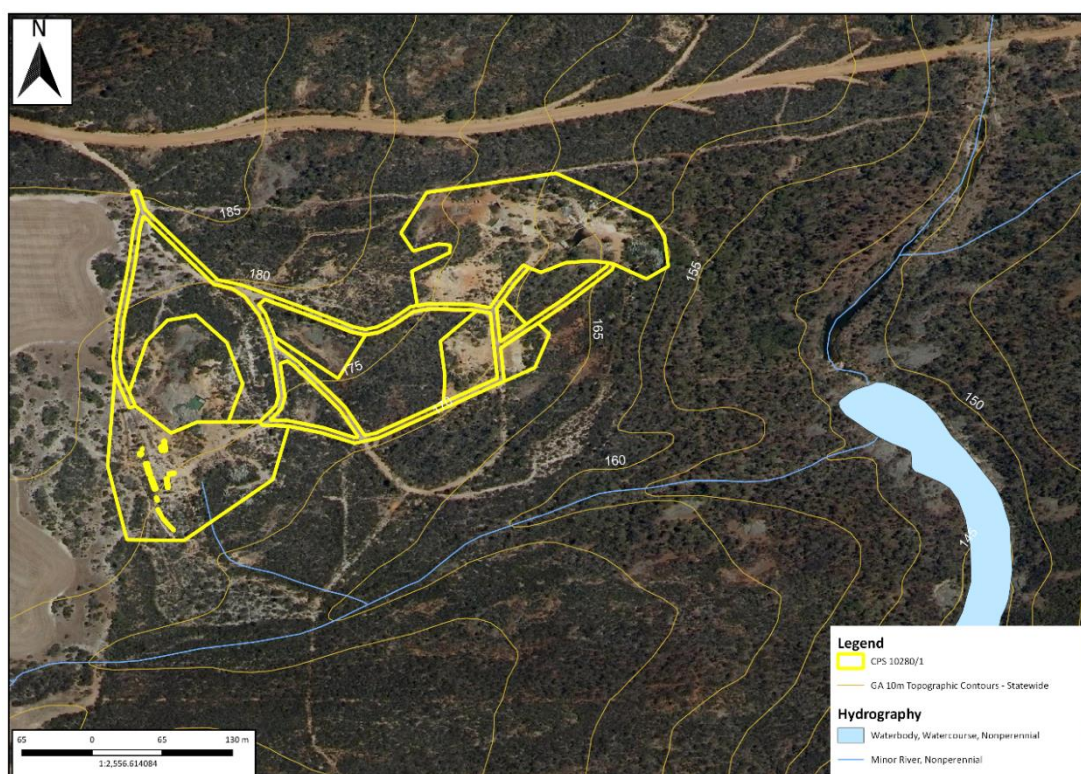


Figure 3. Topographic mapping showing the downward slope toward the Bremer River.

The applicant has proposed a number of avoidance and mitigation measures in an effort to address the potential impacts of the proposed clearing on watercourses and water quality (See Section 3.1.). The applicant provided further clarification regarding their planned actions including the following:

- No clearing of riparian vegetation will occur
- Downslope containment measures including windrows, drains and sumps with the aim for no runoff from activities on the site to drain into the river.

Based on the applicant's proposed avoidance and mitigation measures, the proposed clearing and associated activities are not likely to have a significant impact on the Bremer River and surface water quality.

Conclusion

Based on the above assessment, the proposed clearing may result in the loss of native vegetation growing in or in association with a watercourse and impact on the water quality of the Bremer River.

For the reasons set out above, it is considered that the impacts of the proposed clearing on the watercourse can be avoided by not allowing for the clearing of riparian vegetation that may be within the proposed clearing area and the

impacts on the water quality of the Bremer River can be managed by the drainage and water storage plans and infrastructure included within the applicant's avoidance and mitigation.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- No clearing of vegetation growing in, or in association with a watercourse.
- Weed and hygiene management

3.3. Relevant planning instruments and other matters

Other relevant authorisations required for the proposed land use include:

- Development approval under the *Planning and Development Act 2005* (issued by the Shire of Jerramungup).
- Extractive Industry Licence (issued by the Shire of Jerramungup).

The Shire of Jerramungup advised DWER that the local government approvals are valid and current, and that the proposed clearing is consistent with the Shire's Local Planning Scheme Local Planning Policy (Shire of Jerramungup, 2023). The Shire did not have any objections to the proposed clearing.

No Aboriginal sites of significance have been mapped within the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972 (WA)* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
<p>Request for updated photographs of the vegetation as original photographs were from 2019 and taken shortly after fire:</p> <ul style="list-style-type: none"> applicant provided updated photographs of the proposed clearing area from April 2022 and September 2023. 	See Appendix G for provided photographs.
<p>Response to request for information:</p> <ul style="list-style-type: none"> targeted flora survey identified new population of <i>Myoporum cordifolium</i> within the property commitment to include suitable black cockatoo foraging species in the rehabilitation and revegetation process Measures in place with the objective to have no water leaving the quarry and infrastructure areas 	<p>See section 3.2.3. for threatened flora assessment and Appendix E for survey excerpts.</p> <p>See section 3.2.2. for fauna – Carnaby's cockatoo and Section 3.1. for avoidance and mitigation</p> <p>See section 3.2.4. for water resources and Section 3.1. for avoidance and mitigation.</p>

Appendix B. Site characteristics

B.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is part of an isolated patch of native vegetation in the intensive land use zone of Western Australia. It is surrounded by remnant native vegetation and adjacent to previously cleared agricultural lands. The proposed clearing area is largely contained within an area of previous disturbance within the remnant.</p> <p>Aerial imagery indicates the local area (20-kilometre radius from the centre of the area proposed to be cleared) retains approximately 33.19 per cent of the original native vegetation cover.</p>
Ecological linkage	The proposed clearing is mapped within Strategic Zone C of the South Coast Macro Corridor. Aerial imagery suggests that the application could contribute to an ecological linkage within a highly cleared area.
Conservation areas	The proposed clearing is not mapped within any conservation areas. The nearest conservation area is Fitzgerald River National Park which is located approximately 11.15 km north-east of the application area.
Vegetation description	<p>The TEC Assessment recorded six vegetation types within the property, namely:</p> <ol style="list-style-type: none"> <u>Mo woodland on loam</u> - Woodland on granite derived loams of Mo or Swamp Yate (<i>Eucalyptus occidentalis</i>). <u>Mallee shrubland on sand over clay duplex</u> - Mallee shrubland on sand over clay duplex of Hook-leaved Mallee (<i>Eucalyptus uncinata</i>). <u>Mallee shrubland on dark cracking loamy clay</u> - Mallee shrubland over dark cracking clay of Open-fruited Mallee (<i>Eucalyptus annulata</i>) and <i>E. calycogona</i>. <u>Shrubland on shallow and broken granite</u> - Shrubland on shallow and broken granite of Rock Oak (<i>Allocasuarina huegeliana</i>), Willyurwur or Rock Wattle (<i>Acacia lasiocalyx</i>) and One-sided Bottlebrush (<i>Calothamnus quadrifidus</i>). <u>Low to medium shrubland on shallow granite</u> - Low to medium shrubland on shallow granite of Granite Bottlebrush (<i>Melaleuca elliptica</i>), Broombush (<i>M. hamata</i>) and <i>Thryptomene australis</i>. <u>Altered community</u> - Altered community containing medium and low shrublands of Rock Wattle, Rock Sheoak Mallee (<i>E. sporadica</i>) and introduced trees of Sugar Gum (<i>E. cladocalyx</i>) and South Australian Blue Gum (<i>E. leucoxydon</i>). <p>This is largely consistent with the mapped vegetation types:</p> <ul style="list-style-type: none"> Beard 47, which is described as Shrublands; tallerack mallee-heath (Shepherd et al, 2001) Beard 516, which is described as Shrublands; mallee scrub, black marlock (Shepherd et al., 2001)

Characteristic	Details
	<p>The mapped vegetation types retain approximately 35.86 per cent and 54.80 per cent respectively of the original extent (Government of Western Australia, 2019).</p> <p>The full survey descriptions and maps are available in Appendix F.</p>
Vegetation condition	<p>Based on the TEC Assessment (Newland, 2019), the vegetation within the proposed clearing area is composed of the 'altered community' which is in completely degraded to very good (Keighery, 1994) condition, the majority of which is in degraded condition.</p> <p>Photographs provided by the applicant (See Appendix G) and aerial imagery indicate that the majority of the proposed clearing area is in degraded to completely degraded (Keighery, 1994) condition.</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix D.</p> <p>The full survey descriptions and mapping are available in Appendix F.</p>
Climate and landform	<p>Jerramungup is located within a region considered to have a temperate climate with dry winters and warm summers. The average maximum temperature is 22.1 degrees Celsius with an average 446.8 mm of rainfall.</p> <p>Topographic mapping suggests that the majority of the proposed clearing area is mapped on the side of an incline leading into a valley.</p>
Soil description	<p>The proposed clearing is mapped within two soil types:</p> <ul style="list-style-type: none"> • Lower Fitzgerald 3 subsystem - Deeply incised valleys (<20m deep) with cliffs and breakaways, together with a rejuvenated landscape comprising gently to moderately inclined colluvial slopes and small alluvial plains. • Lower Gairdner 2 subsystem - Gently undulating plain. <p>The majority of the proposed clearing (approximately 70 per cent) is mapped within the Lower Fitzgerald 3 subsystem.</p>
Land degradation risk	The proposed clearing area is mapped as high risk for subsurface acidification.
Waterbodies	The desktop assessment and aerial imagery indicated that one minor, non-perennial watercourse associated with the Bremer River intersects with the south-west of the proposed clearing and the Bremer River is located approximately 200 m east of the application area.
Hydrogeography	The proposed clearing is not mapped within any groundwater or surface water areas and is not at high risk of flooding or waterlogging.
Flora	<p>A total of 24 species of conservation significant flora are recorded within the local area (20-kilometre radius), the closest being <i>Calycopseplus marginatus</i> (Priority 3) which is located 5.52 km from the proposed clearing. Two of the species recorded are listed as threatened, namely:</p> <ul style="list-style-type: none"> • <i>Caladenia bryceana</i> subsp. <i>bryceana</i> (dwarf spider orchid) – 16.79 km • <i>Myoporum cordifolium</i> (Jerramungup myoporum) – 11.57 km <p>A targeted flora survey undertaken identified a new population of <i>Myoporum cordifolium</i> on the property south of application area.</p>
Ecological communities	<p>The proposed clearing is mapped within the Proteaceae dominated kwongan shrublands of the southeast coastal floristic province of Western Australia Priority 3 Ecological Community (PEC) (Western Australia) and endangered Threatened Ecological Community (TEC) (EPBC Act).</p> <p>A TEC assessment was conducted in 2019 (McQuoid, 2019) which concluded that the proposed clearing area was not representative of the PEC/TEC due to the history of disturbance within the site.</p>
Fauna	<p>A total of 12 fauna species of conservation significance are recorded within the local area (20-kilometre radius). Two species are recorded within close proximity to the proposed clearing area, namely:</p> <ul style="list-style-type: none"> • <i>Leipoa ocellata</i> (malleefowl) (Vulnerable) – 0.54 km • <i>Psophodes nigrogularis</i> (western whipbird) (endangered or Priority 4) – 0.61 km

Characteristic	Details
	<p>The proposed clearing is mapped within the known breeding distribution of <i>Zanda latirostris</i> (Carnaby's cockatoo). There are five records of black cockatoos within the local area however, they are only identified as <i>Calyptorhynchus</i> sp. 'white-tailed black cockatoo'.</p> <p>Five breeding sites are recorded within the local area located within one patch of remnant vegetation approximately 15.5 km north-west of the application. One roosting site was recorded within the local area, approximately 16.45 km from the application area.</p>

B.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Proportion (%) of current extent in all DBCA managed land
IBRA bioregion*					
Esperance Plains	2,899,940.66	1,494,450.87	51.53	822,666.27	55.05
Vegetation complex					
Beard vegetation association 516*	607,426.24	332,848.54	54.80	146,938.59	44.15
Beard vegetation association 47*	1,032,885.09	370,425.32	35.86	185,187.18	49.99
Local area					
20 km radius	128,762.02	42,737.09	33.19	-	-

*Government of Western Australia (2019a)

B.3. Flora analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Caladenia bryceana</i> subsp. <i>bryceana</i>	T	Y	Y	Y	16.79	32	Y
<i>Myoporum cordifolium</i>	T	Y	Y	Y	11.57	6	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

B.4. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Calyptorhynchus</i> sp. 'white-tailed black cockatoo' (White-tailed black cockatoo)	EN	Y	Y	18.31	5	N/A
<i>Dasyurus geoffroii</i> (chuditch, western quoll)	VU	Y	Y	8.71	1	N/A
<i>Isodon fusciventer</i> (Quenda, southwestern brown bandicoot)	P4	Y	Y	17.63	2	N/A
<i>Leipoa ocellata</i> (malleefowl)	VU	Y	Y	0.54	9	N/A
<i>Notamacropus eugenii derbianus</i> (tammar wallaby)	P4	Y	Y	14.91	2	N/A

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Notamacropus Irma</i> (western brush wallaby)	P4	Y	Y	12.65	17	N/A
<i>Psophodes nigrogularis</i> (western whipbird)	EN or P4	Y	Y	0.61	2	N/A
<i>Psophodes nigrogularis oberon</i> (western whipbird (western mallee))	P4	Y	Y	9.73	22	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

B.5. Ecological community analysis table

Community name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Proteaceae dominated kwongan shrublands of the southeast coastal floristic province of Western Australia	P3 and En	N	N	Y	0	348	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u> The proposed clearing is mapped within the Proteaceae dominated kwongan shrublands of the southeast coastal floristic province of Western Australia. A TEC assessment was undertaken in 2019 which concluded the vegetation was not representative of the PEC/TEC.</p> <p>Prior disturbance from previous quarry activities has left much of the clearing area in degraded condition with sparse trees and limited understorey meaning that the native vegetation within proposed clearing area is unlikely to contain high biodiversity.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> "Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."</p> <p><u>Assessment:</u> The area proposed to be cleared may contain suitable habitat for several species of conservation significant fauna given its location within a remnant patch of vegetation that functions as an ecological linkage within a highly cleared landscape.</p>	May be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p><u>Principle (c):</u> "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."</p> <p><u>Assessment:</u></p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.3, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>The area proposed to be cleared may contain habitat for flora species listed under the BC Act.</p> <p><i>Myoporum cordifolium</i> was not recorded within the proposed clearing area, however, was recorded in close proximity and may be susceptible to impacts from clearing and mining activities. With the implementation of the applicant's avoidance and mitigation measures, the proposed clearing is not likely to impact the species.</p>		
<p>Principle (d): <i>"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."</i></p> <p><u>Assessment:</u> The proposed clearing area is mapped as the Proteaceae dominated kwongkan shrublands of the southeast coastal floristic province of Western Australia endangered Threatened Ecological Community (TEC), however, an assessment undertaken in 2019 indicates that it is not representative of the TEC due to the history of disturbance within the site.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
Environmental value: significant remnant vegetation and conservation areas		
<p>Principle (e): <i>"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."</i></p> <p><u>Assessment:</u> The extent of the mapped vegetation types and native vegetation in the local area are consistent with the national objectives and targets for biodiversity conservation in Australia.</p>	Not likely to be at variance	No
<p>Principle (h): <i>"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."</i></p> <p><u>Assessment:</u> The nearest conservation area is Fitzgerald River National Park which is located 11 km from the application area. Therefore, the proposed clearing is unlikely to impact on conservation areas.</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<p>Principle (f): <i>"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."</i></p> <p><u>Assessment:</u> Given a minor water course is recorded within the application area, and is in close proximity to the Bremer River, the proposed clearing may impact on- or off-site hydrology and water quality.</p>	At variance	Yes <i>Refer to Section 3.2.4, above.</i>
<p>Principle (g): <i>"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."</i></p> <p><u>Assessment:</u> The mapped soils are highly susceptible to subsurface acidification. Noting the history of disturbance within the application area, the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not likely to be at variance	No
<p>Principle (i): <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."</i></p> <p><u>Assessment:</u></p>	May be at variance	Yes <i>Refer to Section 3.2.4, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
Noting the purpose of the clearing and given that a minor watercourse intersects a portion of the proposed clearing area and the proximity to the Bremer River, the proposed clearing may impact surface water quality.		
<p><u>Principle (j)</u>: <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment</u>: The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.</p>	Not likely to be at variance	No

Appendix D. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation’s ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as ‘parkland cleared’ with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix E. Targeted flora survey excerpts



Plate 1: *Myoporum cordifolium*



Plate 2: Another view of *Myoporum cordifolium*



Plate 3: Close-up of flowers and leaves



Plate 4: View of *Myoporum cordifolium* in the Mallee community



Plate 5: Mallee community where *Myoporum cordifolium* was located



Plate 6: Typical soils where *Myoporum cordifolium* was located

Figure 4. Photographs of *Myoporum cordifolium* found within the property and their habitat (McQuoid, 2023).

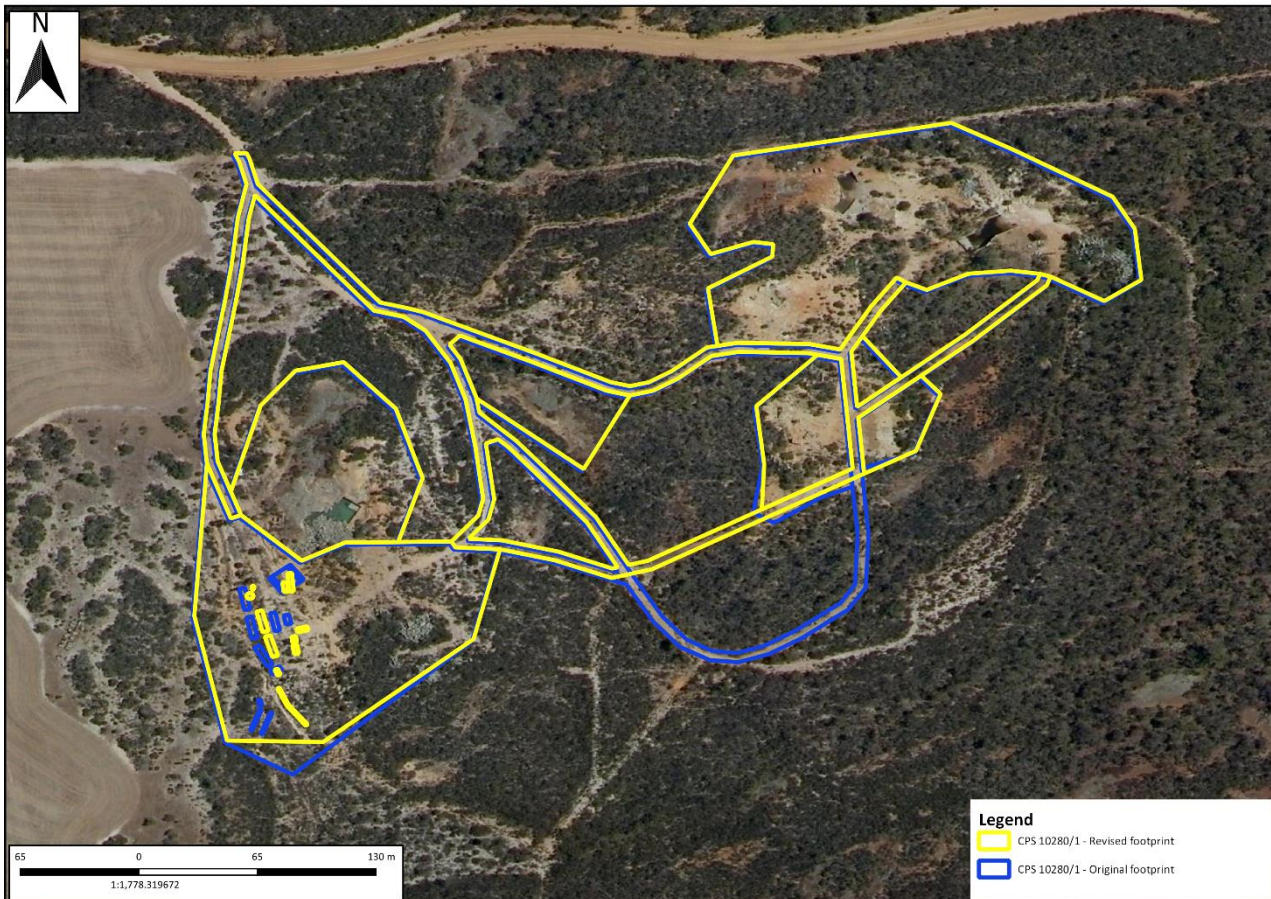


Figure 5. Map of the revised clearing permit footprint (yellow) overlaying the original applied area (blue) following the targeted flora survey.

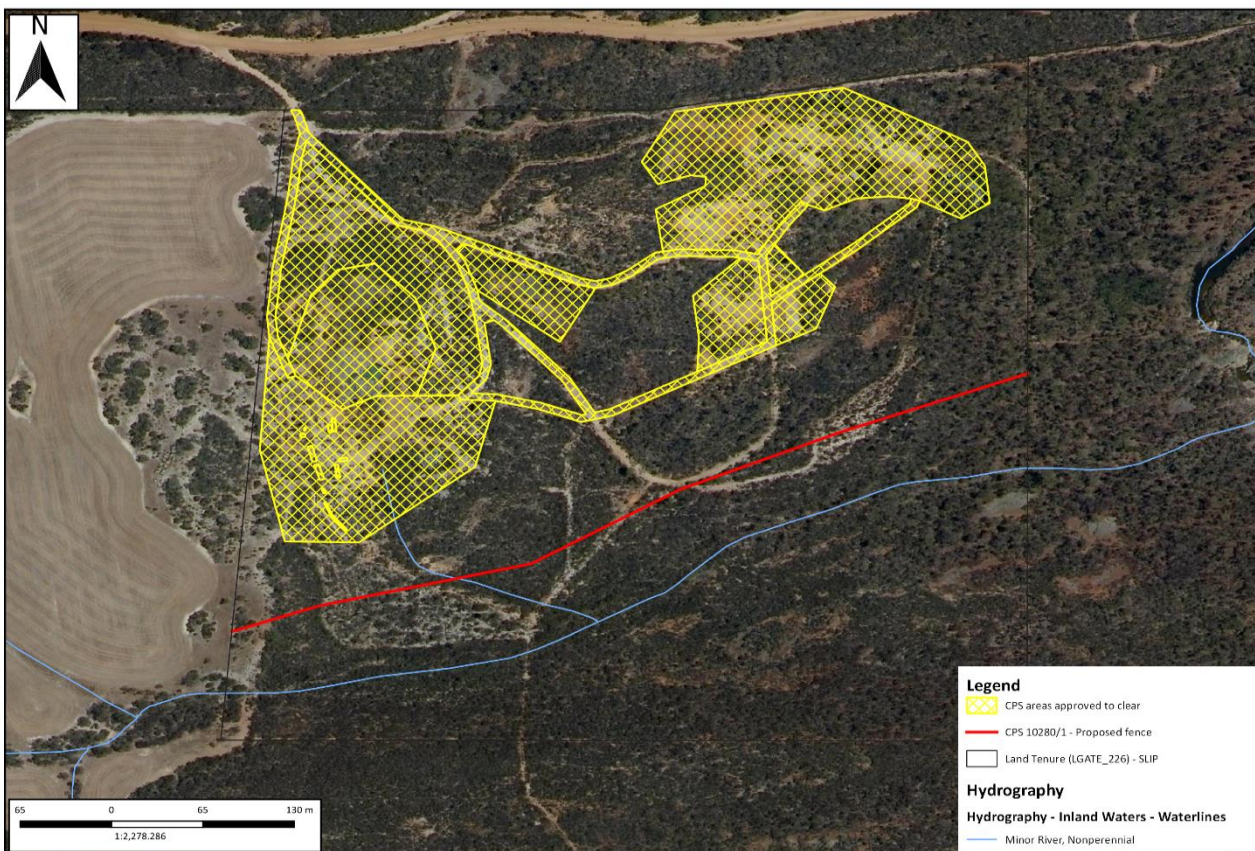


Figure 6. Proposed fence for installation (red line) and its proximity to the drainage line. Areas in between are the proposed conservation buffer.

Appendix F. TEC Assessment information excerpts



Figure 7. Map of the vegetation communities identified within Lot 1 (McQuoid, 2019).



Figure 8. Map of the vegetation condition of Lot 1 using the Keighery (1994) scale (McQuoid, 2019).

Appendix G. Photographs of the application area



Plate 1: Workshop area from previous site operation



Plate 2: Sea container and remnant equipment



Plate 3: Derelict loader left on site



Plate 4: Historical Quarry 1



Plate 5: Barren areas near Quarry 1



Plate 6: Historical Quarry 2



Plate 7: Regrowth on old overburden stockpiles



Plate 8: Historical Quarry 3



Plate 9: Historical Quarry 4



Plate 10: Cleared area near Quarry 4



Plate 11: One of many reject block stockpiles



Plate 12: Another reject block stockpile



Plate 13: Access track



Plate 14: One of many previously cleared area

Figure 9. Photographs of the application area from March 2019, approximately four months following a bushfire.



Plate 15: Previously cleared area with tree regrowth (ex-paddock?)

Figure 10. Photographs of the proposed clearing area from April 2022.



Figure 11. Photographs of the proposed clearing area from September 2023.

Appendix H. Sources of information

H.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)

- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

H.2. References

Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.

Department of Agriculture, Water and the Environment (2022). *Referral guidelines for 3 WA threatened black cockatoo species*. Canberra. Available from: <https://www.dcceew.gov.au/environment/epbc/publications/referral-guideline-3-wa-threatened-black-cockatoo-species-2022>

Department of Biodiversity, Conservation and Attractions (DBCA) (n.d.a). *Tammar Wallaby*. Perth. Available from: <https://library.dbca.wa.gov.au/static/FullTextFiles/071537.pdf>

Department of Biodiversity, Conservation and Attractions (DBCA) (n.d.b). *Western Brush Wallaby*. Perth. Available from: <https://library.dbca.wa.gov.au/static/FullTextFiles/071535.pdf>

Department of Environment and Conservation (DEC) (2012). *Chuditch (Dasyurus geoffroii) National Recovery Plan*. Perth. Available from: <https://www.dcceew.gov.au/sites/default/files/documents/dasyurus-geoffroii-2012.pdf>

Department of Environment and Conservation (DEC) (2009). *Dwarf Spider Orchid (Caladenia bryceana subsp. bryceana) recovery plan*. Perth. Available from: <https://www.dcceew.gov.au/sites/default/files/documents/c-b-bryceana.pdf>.

Department of Environment Regulation (DER) (2013). *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf.

- Department of Environment, Water, Heritage and the Arts (DEWHA) (2008). *Approved conservation advice for Myoporum cordifolium (Jerramungup myoporum)*. Canberra. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/24223-conservation-advice.pdf>.
- Department of Primary Industries and Regional Development (DPIRD) (2019). *NRInfo Digital Mapping. Department of Primary Industries and Regional Development*. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/>.
- Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) (2013). *Approved Conservation Advice for the Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia*. Canberra. Available from: <https://www.environment.gov.au/biodiversity/threatened/communities/pubs/126-conservation-advice.pdf>.
- Department of Water and Environmental Regulation (DWER) (2019). *Procedure: Native vegetation clearing permits*. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.PDF.
- Environmental Protection Authority (EPA) (2016). *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*. Available from: http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf.
- Government of Western Australia. (2019) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- McQuoid, N. (2019). *Assessment for priority and threatened ecological communities and flora, Laguna green granite quarry, Marnigarup Rd, Jerramungup, Western Australia*, received 24 July 2023. (DWER Ref: DWERDT828156)
- McQuoid, N. (2023) *Targeted Flora Survey, Laguna Green Granite Quarry, Marnigarup Rd, Jerramungup, Western Australia*, received 22 November 2023. (DWER Ref: DWERDT871592)
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68) *Atlas of Australian Soils*, Sheets 1 to 10, with explanatory data. CSIRO and Melbourne University Press: Melbourne.
- Schoknecht, N., Tille, P. and Purdie, B. (2004) *Soil-landscape mapping in South-Western Australia – Overview of Methodology and outputs* Resource Management Technical Report No. 280. Department of Agriculture.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) *Native Vegetation in Western Australia, Extent, Type and Status*. Resource Management Technical Report 249. Department of Agriculture, Western Australia.
- Shire of Jerramungup (2023) *Advice for clearing permit application CPS 10280/1*, received 28 November 2023 (DWER Ref: DWERDT873406).
- Stellar Contracting Services Pty Ltd (Stellar) (2023a) *Clearing permit application CPS 10280/1*, received 24 July 2023 (DWER Ref: DWERDT811066).
- Stellar Contracting Services Pty Ltd (Stellar) (2023b) *Supporting information for clearing permit application CPS 10280/1*, received 24 July 2023 (DWER Ref: DWERDT811066).
- Stellar Contracting Services Pty Ltd (Stellar) (2023c) *Additional supporting information for clearing permit application CPS 10280/1 – Updated photographs*, received 12 September 2023 (DWER Ref: DWERDT834234 & DWERDT835971).

- Valentine, L.E. and Stock, W. (2008) *Food Resources of Carnaby's Black Cockatoo (Calyptorhynchus latirostris) in the Gnangara Sustainability Strategy Study Area*. Edith Cowan University and Department of Environment and Conservation. December 2008.
- Water and Rivers Commission (2001). *Bremer River and Devils Creek River Action Plan*. Available from: <https://www.wa.gov.au/system/files/2023-03/Bremer-River-and-Devils-Creek-River-action-plan.pdf>
- Western Australian Herbarium (1998-). *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/>.
- Wilkins, P., Gilfillan, S., Watson, J. and Sanders, A. (ed). (2006). *The Western Australian South Coast Macro Corridor Network – a bioregional strategy for nature conservation*. Department of Conservation and Land Management (CALM) and South Coast Regional Initiative Planning Team (SCRIPT), Western Australia