






Jackson Block Sand Extraction

**Native Vegetation Clearing Permit
(Purpose Permit) Application
Supporting Documentation**

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1. INTRODUCTION

AMG (WA) Pty Ltd proposes to clear vegetation for the purpose of sand extraction within Jackson Block, located at Lot 3 Buller Road, Waroona. The proposed clearing area for this activity is 21.3148ha within the boundaries of the Jackson Block that is 36.797ha. The location of the proposed activity is approximately 8km west of the town of Waroona which is situated on the South Western Highway, Western Australia.

There have been several surveys undertaken within Jackson Block, which include a dieback assessment conducted by Glevan Consulting in May 2015 (Attachment 1) a flora and vegetation survey that was conducted by MBS Environmental (Attachment 2) in May 2015 and a fauna survey conducted by Terrestrial Ecosystems (Attachment 3) in May 2015.

This report details the flora and vegetation values of the proposed clearing for the sand extraction within Jackson Block through the findings of the assessments conducted and to provide supporting information for a Native Vegetation Clearing Permit (Purpose Permit) application and the Assessment bilateral agreement – Annex C7.

Commencement of the sand extraction at Jackson Block is proposed to commence in August 2015, with operations for approximately 5 years.

2. DESCRIPTION OF PROPOSED ACTIVITY

Within Jackson Block, there is a large cleared section of native vegetation that was previously used to extract sand, located on the eastern side and another disused mining area in the south-west corner that abuts the regrown vegetation in the power line corridor. Approximately 45% of the project area has been used for historical sand extraction and mining. The project area is part of a larger remnant patch of native vegetation. There is a small section west of the central point that supports dense shrubs on white sands that extends to the track that runs north-south through the project area.

It is proposed that much of the vegetation within Jackson Block of Lot 3 Buller Road, Waroona will be cleared (Attachment 4) and the area will be used as a sand extraction pit.

Sand will be extracted with bulldozers and front-end loaders, which load the sand onto semi-tippers for removal from site. Screening of the sand will be conducted on site with screening equipment.



3. MATTERS OF NATIONAL SIGNIFICANCE

Of the seven matters of national environmental significance to which the EPBC Act applies, the one that is relevant to the proposed activity which is nationally threatened species and ecological communities.

The three species of black-cockatoo, the *Calyptorhynchus banksii naso* (Forest Red-tailed Black-Cockatoo), *Calyptorhynchus baudinii* (Baudin's Black-Cockatoo) and *Calyptorhynchus latirostris* (Carnaby's Black-Cockatoo) are likely to forage in the project area, but their survival is unlikely to depend on this area. There were multiple tree hollows that could provide a nest site for either Carnaby's or Forest Red-tailed Black-Cockatoos, but no evidence of nesting (e.g. chewed bark around hollow entrances) was seen.

4. IMPACTS

Clearing of vegetation will potentially impact on all three species of Black-Cockatoo in a number of ways, including:

- death/injury of fauna during vegetation clearing and development;
- loss of habitat; and
- fragmentation of fauna habitat.

Besides the initial mortality of fauna during vegetation clearing and earthworks, there will also be an ongoing indirect impact, largely consisting of the loss and degradation of habitat resources, feeding areas and shelter sites for mobile species.

It is likely that Carnaby's and Baudin's forage on *Banksia* sp. cones and marri nuts and Forest Red-tailed Black-Cockatoos would forage in the marri, jarrah and sheoak nuts in the project area.

The table below provides a summary of the assessed potential impact on Black-Cockatoos associated with the action of clearing the vegetation based on the criteria set out in the Department of Sustainability, Environment, Water, Population and Communities (2012) referral guidelines for Black-Cockatoos. This is followed by a more detailed assessment to support this summary table. Commonwealth referral guidelines (Department of Sustainability Environment Water Population and Communities 2011) do not define what is quality foraging habitat for Black-Cockatoos, so the criteria of clearing or degrading more than 1ha of quality foraging habitat is difficult to assess.



Table 1: Summary assessment of whether an action will have a significant impact on the species

High risk of significant	Carnaby's Black-	Baudin's Black-	Forest Red-tailed
Clearing of any known nesting tree.	No nesting trees were recorded on the project area.	No nesting trees were recorded on the project area.	No nesting trees were recorded on the project area.
Clearing or degradation of any part of a vegetation community known to contain breeding habitat.	The project is inside the DPaW mapped potential breeding habitat.	The project is outside the DPaW mapped potential breeding habitat.	Is within the vicinity of known breeding locations.
Clearing of more than 1ha of quality foraging habitat.	Clearing the remainder of the project area will remove more than 1ha of foraging habitat.	Clearing the remainder of the project area will remove more than 1ha of foraging habitat.	Clearing the remainder of the project area will remove more than 1ha of foraging habitat.
Clearing or degradation (including pruning the top canopy) of a known night roosting site.	Finn et al. (2014) recorded roosting sites for red-tail and white-tailed black-cockatoo near Waroona, but they appear east of the project area on the small scaled map provided.	Finn et al. (2014) recorded roosting sites for red-tail and white-tailed black-cockatoo near Waroona, but they appear east of the project area on the small scaled map provided.	Finn et al. (2014) recorded roosting sites for red-tail and white-tailed black-cockatoo near Waroona, but they appear east of the project area on the small scaled map provided.
Creating a gap of greater than 4 km between patches of black cockatoo habitat (Breeding, foraging or roosting).	Clearing will not create a gap of greater than 4km between patches of Black-Cockatoo habitat.	Clearing will not create a gap of greater than 4km between patches of Black-Cockatoo habitat.	Clearing will not create a gap of greater than 4km between patches of Black-Cockatoo habitat.
Uncertainty: referral recommended or contact the department			
Degradation (such as through altered hydrology or fire regimes) of more than 1 ha of foraging habitat. Significance will depend on the level and extent of degradation and the quality of the habitat.	Clearing will impact on more than 1ha of foraging habitat.	Clearing will impact on more than 1ha of foraging habitat.	Clearing will impact on more than 1ha of foraging habitat.



Clearing or disturbance in areas surrounding black-cockatoo breeding, foraging or night roosting habitat that has the potential to degrade habitat through introduction of invasive species, edge effect, hydrological changes, increased human visitation or fire.	Based on the recent Great Cocky count (Finn et al. 2014), there are roost sites to the east of the project area. The exact locations of these roosts are not shown so the distance from the project area cannot be determined from the report, but is approximately 8km away.	Based on the recent Great Cocky count (Finn et al. 2014), there are roost sites to the east of the project area. The exact locations of these roosts are not shown so the distance from the project area cannot be determined from the report, but is approximately 8km away.	Based on the recent Great Cocky count (Finn et al. 2014), there are roost sites to the east of the project area. The exact locations of these roosts are not shown so the distance from the project area cannot be determined from the report, but is approximately 8km away.
Actions that do not directly affect the listed species but that have a potential for indirect impacts such as increasing competitors for nest hollows.	The project area contains trees with hollows that are currently used by species that could be in direct competition for these hollows with Black-Cockatoos should they decide to nest in this area (e.g. Brushtail Possums and bees).	The project area contains trees with hollows that are currently used by species that could be in direct competition for these hollows with Black-Cockatoos should they decide to nest in this area (e.g. Brushtail Possums and bees).	The project area contains three trees with hollows that are currently used by species that could be in direct competition for these hollows with Black-Cockatoos should they decide to nest in this area (e.g. Brushtail Possums and bees).
Actions with the potential to introduce known plant disease such as <i>Phytophthora</i> spp. To an area where the pathogen was not previously known.	<i>Phytophthora</i> is already present in the project area. Appropriate hygiene standards will be required to stop the movement of this disease across the site and to other sites.	<i>Phytophthora</i> is already present in the project area. Appropriate hygiene standards will be required to stop the movement of this disease across the site and to other sites.	<i>Phytophthora</i> is already present in the project area. Appropriate hygiene standards will be required to stop the movement of this disease across the site and to other sites.
Low risk of significant impacts: referral may not be required.			
Actions that do not affect black-cockatoo habitat or individuals.			
Actions whose impacts occur outside the modelled distribution of the three black-cockatoos.			



Clearing of any known nesting tree (high risk)

Forest Red-tailed Black-Cockatoos are known to nest in farm land, rural residential, rural remnants and eucalypt woodlands and could nest in or near the project area. The project area is inside the known potential area of nesting sites for Carnaby's Black-Cockatoo as shown on the DPaW maps. These 22km circles representing breeding sites on the DPaW maps probably relate to the Carnaby's nesting site around the Forrest Highway and inland from Preston Beach.

Clearing of any part or degradation of breeding habitat (high risk)

Breeding habitat for Carnaby's Black-Cockatoo is defined as woodland or forest, but also breeds in former woodland or forest now present as isolated trees. Nest in hollows in live or dead trees of *E. salmonophloia*, *E. wandoo*, *E. gomphocephala*, *E. marginata*, *E. rudis*, *E. loxophleba*, *E. accedens*, *C. calophylla* and *E. diversicolor*. Baudin's Black-Cockatoo generally breed in woodlands and forest, and nests are in *E. salmonophloia*, *E. wandoo*, *E. gomphocephala*, *E. marginata*, *E. rudis*, *E. loxophleba*, *E. accedens*, *C. calophylla* and *E. diversicolor*. Forest Red-tailed Cockatoos nests are found in hollows in live or dead trees of *C. calophylla*, *E. diversicolor*, *E. wandoo*, *E. megacarpa*, *E. patens*, *E. gomphocephala* and *E. marginate* (Department of Sustainability Environment Water Population and Communities 2012; p.15). It is Terrestrial Ecosystems assessment that Baudin's Black-Cockatoo is unlikely to nest in the project area, as there are no other nesting locations for this species nearby, however, although no nests were recorded, suitable hollows may be available in some trees for Carnaby's and Forest Red-tail Black-Cockatoos.

Clearing of more than 1ha of quality foraging habitat (high risk)

The definition of what is 'quality habitat' is unknown, but the trees in the project area are on the Commonwealth Governments list of foraging species for Carnaby's, Baudin's and the Forest Red-tailed Black-Cockatoo. It is proposed that in excess of 1ha of vegetation recorded as foraging habitat will be cleared.

Clearing or degradation including pruning the top canopy of a known roosting site (high risk)

There is no evidence to indicate that white or red-tailed black-cockatoos roost in the project area, however, nocturnal surveys were not included in the site assessment. Forest Red-tailed Black-Cockatoos regularly shift their roosting sites, and could periodically roost in the project area for a short period. The recently released 2014 Great Cocky count (Finn et al. 2014) indicates roosting sites for both white and red-tail black-cockatoo to the east of the project in the vicinity of Waroona.

Degradation (such as through altered hydrology or fire regimes) of more than 1ha of foraging habitat. Significance will depend on the level and extent of degradation and the quality of the habitat (uncertainty)

It is proposed that in excess of 1ha of black-cockatoo foraging habitat will be cleared.



Clearing or disturbance in areas surrounding black cockatoo habitat that has the potential to degrade habitat through the introduction of invasive species, edge effects, hydrological changes, increased human visitation or fire (uncertainty)

The area to be cleared will initially be used as a sand extraction pit. This development will increase human visitation to the area.

Actions that do not directly affect the listed species but that have the potential for indirect impacts such as increasing competitors for nest hollows (uncertainty)

There was no other obvious indirect impact that clearing the vegetation might have on black-cockatoos.

Action with the potential to introduce know plant diseases such as *Phytophthora* spp. (uncertainty)

Clearing of the vegetation is only likely to spread diseases such as *Phytophthora* spp., if appropriate standards of hygiene are not maintained in the equipment used to clear the vegetation. This aspect is able to be effectively managed and controlled by the developer. However, unless effective hygiene measures are put in place the movement of trucks shifting sand from the site could increase the spread of *Phytophthora* spp.

5. ALTERNATIVES

There are no feasible alternatives to avoid clearing of vegetation for the proposed activity of sand extraction within Jackson Block.

6. MITIGATION MEASURES

There are several avoidance and mitigation measures proposed to be undertaken to prevent or minimise the relevant impacts of the proposed activity on matters of National Environmental Significance.

The proposed activity has excluded an unmapped buffer area around an adjacent wetland that extends into Jackson Block. In addition, there has been a portion of the previously disturbed and failed rehabilitation area that will also be excluded from the clearing of vegetation.

Where possible, the identified cockatoo breeding / nesting trees within Jackson block will be avoided and retained.

Once sand extraction activity has been completed, a rehabilitation plan will be developed for the Jackson Block and should an offset be required, an offset plan will be developed and implemented.



7. CONSULTATION

An important aspect within the proposed sand extraction of Jackson Block pertains to consultation carried out with stakeholders and various parties which may be involved. Regular contact will be maintained stakeholders to ensure that there will be minimal inconvenience and impact on their activities.

Stakeholders include:

- Shire of Waroona
- Department of Environment Regulation (DER).
- Department of Parks and Wildlife (DPaW).
- Department of Water (DoW).
- Department of Regional Development/ Lands.
- Department of Indigenous Affairs (DIA).
- Landowners.

Consultation has currently been undertaken with the Department of Environment Regulation regarding a Native Vegetation Clearing Permit. A meeting was held on 18 May 2015 to discuss the requirements involved in obtaining a Clearing Permit.

Consultation was made with the Department of Indigenous Affairs to confirm that the location of a Registered Aboriginal Heritage Site DAA 3547 (Buller Road Camp) is not within Lot 3 Buller Road, Waroona.

Consultation has also commenced with the Shire of Waroona to obtain an Industry Extraction Licence for the Project area.

The applicant is committed to ongoing consultation with stakeholders to ensure environmental concerns can be raised and addressed during the lifetime of the project.

8. ASSESSMENT AGAINST CLEARING PRINCIPLES FOR NATIVE VEGETATION

Ten clearing principles have been identified under Schedule 5 of the *Environmental Protection Act 1986* for the purposes of determining the impact of clearing. These principles are taken into account when a decision to grant or refuse a clearing permit is required. An assessment of the potential impacts of the proposed areas in accordance with the Clearing Principles is provided in Table 2.



Table 2: Clearing Principles

No.	Principle	Assessment	Is Project at Variance to this Principle?
1	Native vegetation should not be cleared if it comprises a high level of biological diversity	<p>The following indicates the vegetation condition within the Jackson Block that is proposed to be cleared.</p> <p>Black Cockatoo Habitat within the excavation area: 19.5610 ha</p> <p>Vegetation Condition - Completely Degraded: 2.3821 ha</p> <p>Vegetation Condition – Degraded: 0.1196 ha</p> <p>Vegetation Condition – Good: 0.3062 ha</p> <p>Vegetation Condition – Very Good: 18.5069 ha</p> <p>According to anecdotal records, all of the Jackson Block was cleared close to 50 years ago in preparation for sand extraction that did not end up extending as far as planned. The anecdotal record was supported by the general lack of very old large trees and the presence of cut stumps and burned-out logs. There were several fence lines across the remnant vegetation, assumed to have been constructed for grazing purposes. There was evidence of fire, but not for at least a decade. Several tracks crossed the survey area and there was what appeared to have been an old campsite with some rubbish. In some areas, vegetation appeared to be in poor health and dead trees were present. This could be related to drought or pest and disease. Evidence of wild pig activity and substantial grazing by kangaroos was recorded.</p> <p>The dieback was identified as unprotectable due to the size and location of the area within Jackson Block.</p> <p>Clearing vegetation will not compromise a high level of biodiversity.</p>	Activity is not a variance to this principle



2	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 indigenous to Western Australia	The clearing of vegetation within Jackson Block will not result in the loss of significant habitat necessary for the maintenance of fauna indigenous to Western Australia.	Activity is not a variance to this principle
3	Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, significant flora	No Threatened or Priority Flora species were identified within the proposed clearing area.	Activity is not a variance to this principle
4	Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significant ecological community	The area does not contain any threatened ecological fauna or flora communities.	Activity is not a variance to this principle
5	Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared	The Jackson Block forms part of a remnant plot of native vegetation situated in surrounding pasture.	Activity is not a variance to this principle
6	Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland	The Jackson Block is not classified as a wetland, however there will be avoidance of clearing the buffer area surrounding the adjacent wetland that extends into Jackson Block.	Activity is not a variance to this principle
7	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation	The clearing of native vegetation is unlikely the clearing of vegetation will cause appreciable land degradation.	Activity is not a variance to this principle



8	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	Clearing of the project area will reduce the overall size of the remnant vegetation.	Activity is not a variance to this principle
9	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.	It is unlikely that the clearing of vegetation will cause a deterioration of surface or groundwater sources.	Activity is not a variance to this principle
10	Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.	The clearing of vegetation will not cause or exacerbate flooding in the proposed areas.	Activity is not a variance to this principle

The project is not considered to be at variance with any of the ten clearing principles listed in Schedule 5 of the *Environmental Protection Act 1986*.



9. REFERENCES

Department of Environment Regulation December 2014, A guide to the assessment of applications to clear native vegetation: Under Part V of the Environmental Protection Act, Government of Western Australia.

Glevan Consulting 2015, Phytophthora Dieback occurrence assessment – Version 2.0, prepared for KD.1 Pty Ltd.

MBS Environmental 2015, Lot 3 Buller Road Waroona, Level 1 Flora and Vegetation Survey for Jackson, prepared for KD.1 Pty Ltd.

Terrestrial Ecosystems 2015, Level 1 Fauna Risk Assessment for the 'Jackson Block' of Lot 3 Buller Road, Waroona, prepared for MDW Environmental Services.





**Attachment 1: Glevan Consulting - Phytophthora Dieback
occurrence assessment**

(refer attached file)





**Attachment 2: MBS Environmental - Lot 3 Buller Road Waroona,
Level 1 Flora and Vegetation Survey for Jackson**

(refer attached file)



**Attachment 3: Terrestrial Ecosystems - Level 1 Fauna Risk
Assessment for the 'Jackson Block' of Lot 3 Buller Road,
Waroona**

(refer attached file)





Attachment 4: Overview Map of Jackson Block Sand Excavation Area

(refer attached file)





Attachment 5: Mapping Showing Environmental Aspects of Jackson Block

(refer attached files)

