GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS
Area Permit Number: 7977/1
File Number: DER2018/000249
Duration of Permit: From 1 October 2018 to 1 October 2030

PERMIT HOLDER
Lewis Johnstone

LAND ON WHICH CLEARING IS TO BE DONE
Lot 15368 on Deposited Plan 168928, Williams

AUTHORISED ACTIVITY
The Permit Holder shall not clear more than 4.5 hectares of native vegetation within the area hatched yellow on attached Plan 7977/1.

CONDITIONS

1. **Avoid, minimise and reduce the impacts and extent of clearing**
   In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:
   (a) avoid the clearing of native vegetation;
   (b) minimise the amount of native vegetation to be cleared; and
   (c) reduce the impact of clearing on any environmental value.

2. **Dieback and weed control**
   When undertaking any clearing authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the 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 *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
   (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

3. **Period in which clearing is authorised**
   (a) The Permit Holder shall not clear any native vegetation after 1 October 2020.
   (b) The Permit Holder must ensure that the extraction activities occurs within three months of the authorised clearing being undertaken.

4. **Fauna management**
   The Permit Holder shall not clear *black cockatoo habitat trees* found within the area cross hatched yellow on attached Plan 7977/1.

5. **Offsets – conservation covenant**
   Prior to undertaking any clearing authorised under this Permit, and no later than 1 October 2019 the Permit Holder shall:
   (a) give a conservation covenant under section 30B of the *Soil and Land Conservation Act 1945* setting aside the area hatched red on attached Plan 7977/1 for the protection and management of vegetation in perpetuity; and
   (b) provide to the CEO a copy of the executed conservation covenant.

6. **Retain vegetative material and topsoil, revegetation and rehabilitation**
The Permit Holder shall:
(a) 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) At an *optimal time* following completion of extraction activities, *revegetate* and *rehabilitate* the area(s) that are no longer required for the purpose for which they were cleared under this Permit within the areas cross-hatched yellow on attached Plan 7977/1 by:
(i) re-shaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land; and
(ii) ripping the ground on the contour to remove soil compaction; and
(iii) ripping the pit floor and contour batters within the extraction site; and
(iv) laying the vegetative material and topsoil retained under condition 6(a) on the cleared area(s).
(c) The Permit Holder shall achieve the following completion criteria within 10 years for areas *revegetated* and *rehabilitated* under this Permit:

Completion criteria	**Minimum to be achieved**
Species richness	8 native species
Density of foraging species for *Calyptorhynchus baudinii*, *Calyptorhynchus latirostris* and *Calyptorhynchus banksii* subsp. *naso*	60%
Overstorey Density Midstorey Density Understorey Density	600 stems per hectare 200 stems per hectare 200 stems per hectare
Overstorey species	Known to have the potential to develop suitable nesting hollows for *Calyptorhynchus baudinii*, *Calyptorhynchus latirostris* and *Calyptorhynchus banksii* subsp. *naso*
Structure - overstorey	60%
Structure – midstorey	20%
Structure - understorey	20%
Weeds	<20%

(d) The Permit Holder shall engage an *environmental specialist* 5 years after laying the vegetative material and topsoil on the cleared area in accordance with condition 6(b) of this Permit to determine species richness, density, structure and weed cover and to assess areas *revegetated* and *rehabilitated* under this Permit against the completion criteria identified at condition 6(d).
(e) Where in the opinion of an *environmental specialist*, monitoring undertaken at 5 years indicates that the cleared area will not achieve the completion criteria outlined in condition 6(d), the Permit Holder shall undertake remedial actions for areas *revegetated* and *rehabilitated*, including;
(i) *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in the minimum target in 6(d) and ensuring only *local provenance* seeds and propagating material are used; and
(ii) undertake further weed control activities.

7. **Records must be kept**
The Permit Holder must maintain the following records for activities done pursuant to this Permit:
(a) In relation to the clearing of native vegetation authorised under this Permit:
(i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
(ii) the date that the area was cleared;
(iii) the size of the area cleared (in hectares);
(iv) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 1 of this Permit; and
(v) actions taken to minimise the risk of the introduction and spread of *dieback* and *weeds* in accordance with condition 2 of this Permit.

(b) In relation to fauna management pursuant to condition 4 of this Permit the Permit Holder shall provide, the location of each *black cockatoo habitat tree/s* identified and retained, recorded using a GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees.

(c) In relation to the revegetation of areas pursuant to condition 6 of this Permit:
  (i) a description of the *revegetation* and *rehabilitation* activities undertaken;
  (ii) the size of the area *revegetated* and *rehabilitated* (in hectares);
  (iii) the date that the area was *revegetated* and *rehabilitated*; and
  (iv) a copy of a report(s), prepared by an *environmental specialist*, detailing the *revegetation* and *rehabilitation* activities undertaken and results for the monitoring of density, diversity, structure and weed cover.

8. Reporting

(a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
  (i) of records required under condition 7 of this Permit; and
  (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.

(b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.

(c) Prior to xx June 2030, the Permit Holder must provide to the CEO a written report of records required under condition 7 of this Permit, where these records have not already been provided under condition 8(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

black cockatoo habitat tree(s): means trees that have a diameter, measured at 1.5 metres from the base of the tree, of 50 centimetres or greater.

CEO: means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986.*

dieback means the effect of *Phytophthora* 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;

environmental specialist: means a person who holds a tertiary qualification in environmental science or equivalent, and has 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.

fill means material used to increase the ground level, or fill a hollow;

local provenance means native vegetation seeds and propagating material from natural sources within 100 kilometres and the same Interim Biogeographic Regionalisation for Australia (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;

optimal time means the period from April to June for undertaking *direct seeding*, and the period from May to June for undertaking *planting*;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

regenerate/ed/ion means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing *mulch*;

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

revegetate/ed/ion 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.

weed/s means any plant -

(a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or

(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or

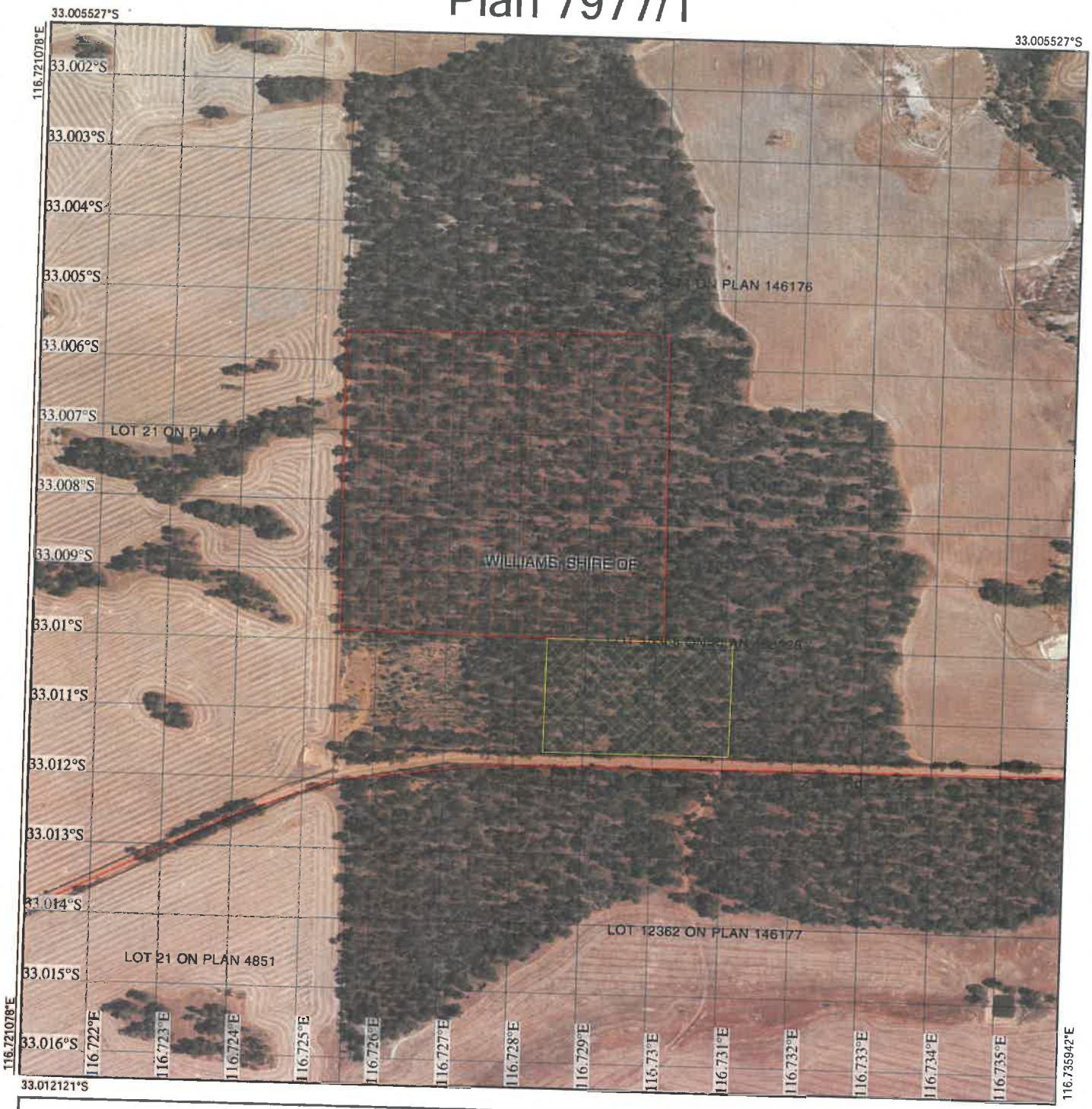
(c) not indigenous to the area concerned.

Abbie Crawford
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

3 September 2018

Plan 7977/1



Legend

- Clearing Instruments Conditions
- Imagery
- Clearing Instruments Activities
- Local Government Authority
- Roads

N

0 200m

1:7,356

(Approximate when reproduced at A4)

GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

..... Date 3/09/18.....

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 7977/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Mr Lewis Johnstone

Application received date: 07 February 2018

1.3. Property details

Property: LOT 15368 ON PLAN 168928, WILLIAMS
Local Government Authority: WILLIAMS, SHIRE OF
Localities: WILLIAMS

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
4.5		Mechanical Removal	Extractive industry

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 14 August 2018
Reasons for Decision:

The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986* (EP Act). It has been concluded that the proposed clearing is at variance to principles (b) and (e), may be at variance to principles (a) and (g) and is not likely to be at variance to the remaining principles.

Through assessment it was determined that the proposed clearing will result in the loss of 4.5 hectares of foraging habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*) (collectively referred to as black cockatoos). The Delegated Officer also determined that the application area is considered to be significant remnant within an extensively cleared area.

The applicant has avoided and minimised impacts by committing to retain black cockatoo habitat trees and other large trees where possible. To ensure that black cockatoos are not impacted a condition has been added to the permit requiring the Permit Holder to retain black cockatoo habitat trees.

To mitigate the significant environment impacts identified above, and in accordance with the WA Environmental Offset Policy and Environmental Offsets Guidelines, prior to undertaking any clearing, the Permit Holder is to enter into a conservation covenant under section 30B of the *Soil and Land Conservation Act 1945* setting aside a 21.1 hectare area (as depicted on Plan 7977/1) for the protection and management of vegetation in perpetuity

To mitigate significant residual impacts the applicant has also committed to revegetating the application area post extraction. A revegetation and rehabilitation condition has been placed on the permit to ensure this commitment is met.

Through assessment the Delegated Officer determined tha the proposed clearing may cause appreciable land degradation through wind erosion. To minimise this risk, a condition has been added to the permit requring the gravel extraction to be undertaken within three months of any clearing being undertaken.

The Delegated Officer determined that the proposed clearing may increase the spread of weeds and dieback into adjacent vegetation. To minimise this impact, a condition has been placed on the permit requiring the implementation of weed and dieback management measures.

2. Site Information

Clearing Description

The application is to clear 4.5 hectares of native vegetation within Lot 15368 on Deposited Plan 168928, Williams, for the purpose of gravel extraction for commercial use (figure 1).

Vegetation Description

The application area is mapped as Mattiske Vegetation Complex 'Dalmore 2' which is described as 'Woodland of *Eucalyptus wandoo-Eucalyptus marginata* subsp. *marginata-Corymbia calophylla* on uplands in semiarid and arid zones' (Mattiske and Havel, 1998).

A site inspection undertaken by Department of Water and Environmental Regulation (DWER) Officer's determined that the application area consists predominantly of *Eucalyptus marginata* (jarrah) within the overstorey, with some scattered *Corymbia calophylla* (marri) and *Eucalyptus wandoo* (wandoo). The midstorey consists of scattered *Banksia sessilis* and a few scattered *Allocasurina* sp. There was a distinct ground cover layer with native shrubs and very little weeds present (DWER, 2018).

Vegetation Condition

Good; Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).

To

Very Good; Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

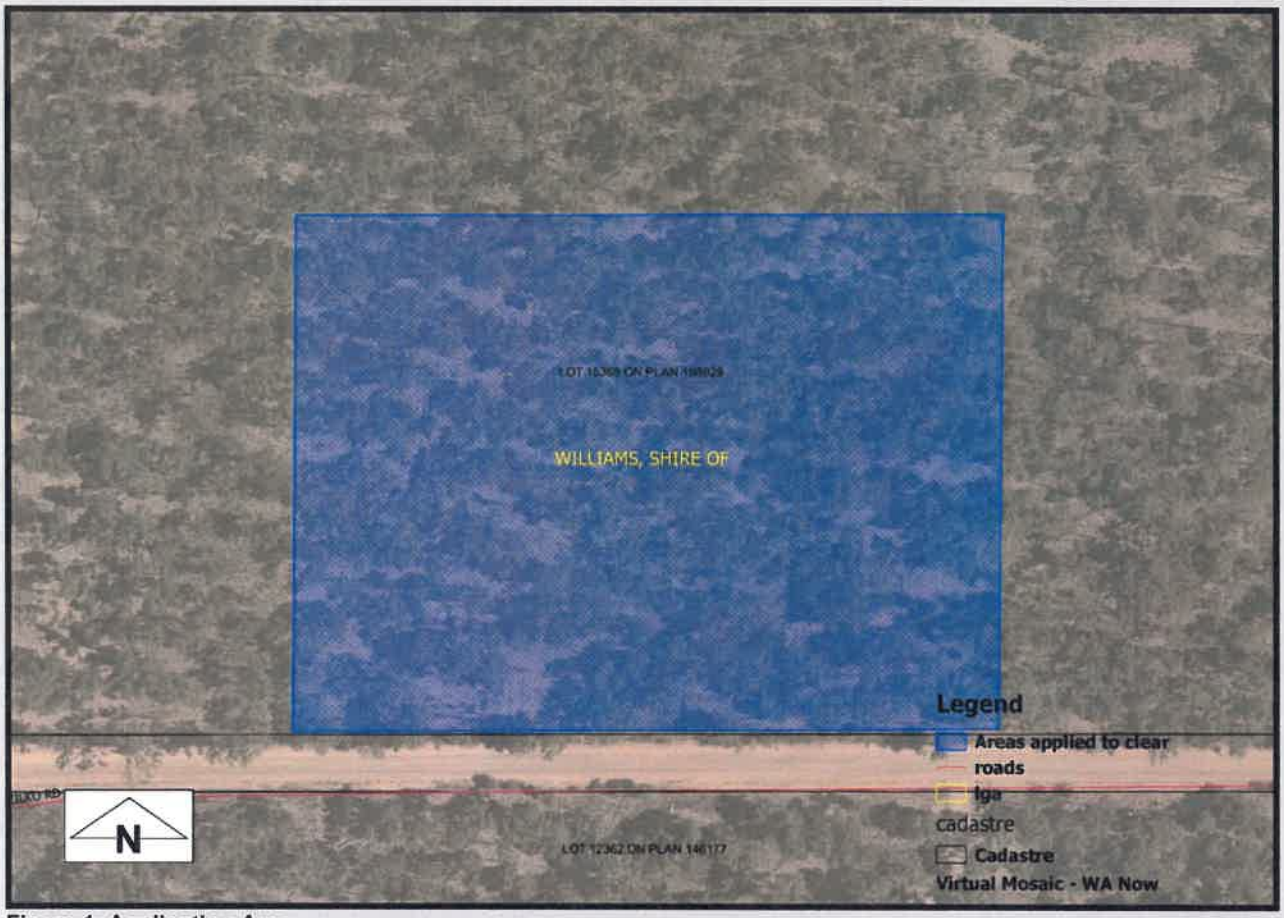


Figure 1: Application Area

3. Minimisation and mitigation measures

The applicant has advised that the whole 4.5 hectares within the application will not be cleared as there is room between larger trees to complete the required extraction.

The applicant has committed to retaining black cockatoo habitat trees (approximately 20) and has advised that he intends to retain approximately 100 larger trees within the application area.

The applicant intends to extract gravel in small strips and set aside the top soil and replace immediately after the area is extracted.

4. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Proposed clearing may be at variance to this Principle

The local area considered in the assessment of this application is defined as a 20 kilometre radius surrounding the application area. The local area is extensively cleared and contains approximately 20 per cent native vegetation cover.

A site inspection undertaken by Department of Water and Environmental Regulation (DWER) Officer's determined that the application area consists of predominantly of *Eucalyptus marginata* (jarrah) within the overstorey, with some scattered *Corymbia calophylla* (marri) and *Eucalyptus wandoo* (wandoo). The midstorey consists of scattered *Banksia sessilis* and a few scattered *Allocasuarina* sp. There was a distinct ground cover layer with native shrubs and very little weeds present (DWER, 2018).

The applicant noted that the application area and surrounding area had previously been logged and grazed, however has been fenced for approximately 20 years (DWER, 2018).

According to available databases, five priority flora have been recorded within the local area, including two Priority 4 flora species, two Priority 3 species and one Priority 2 species. Priority 3 species are known from several locations, and do not appear to be under imminent threat, and Priority 4 species are considered to have been adequately surveyed, and are considered not currently threatened or in need of special protection, but could be if present circumstances change. Given this and that the application area has previously been grazed the proposed clearing is not likely impact on the conservation status of any Priority 3 or Priority 4 flora species.

The Priority 2 flora species, *Leucopogon darlingensis* subsp. *rectus,* has been recorded approximately 11 kilometres from the application area. This species has been found on lateritic hillsides, upper slopes ridges on yellow-brown sandy-gravelly loam over laterite (Western Australian Herbarium, 1998-). The topography of the application area is relatively flat and the application area has historically been grazed and therefore the application area is not likely to provide significant habitat for this species.

As assessed under principle (c), the application area is not likely to impact upon any rare flora species.

As assessed under principle (b), the application area provides foraging and potential breeding habitat for forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and Carnaby's cockatoo (*Calyptorhynchus latirostris*).

As assessed under principle (d), the application area is not likely to be representative of a threatened ecological community (TEC).

The application area is located adjacent to remnant native vegetation. The proposed clearing may indirectly impact this vegetation through the spread of weeds and dieback. Weed and dieback management practices will help mitigate this risk.

The local area has been extensively cleared (20 per cent native vegetation remaining), the application area comprises of vegetation in good to very good (Keighery, 1994) condition and provides suitable foraging and potential breeding habitat for the conservation significant black cockatoo species. Therefore the application area may be considered to comprise a high biological diversity.

The proposed clearing may be at variance to this Principle.

Fauna management practices will ensure that no direct impacts to potential breeding habitat for the black cockatoos occurs.

(b) 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.

Proposed clearing is at variance to this Principle

According to available databases, five terrestrial fauna species listed as specially protected under the *Wildlife Conservation Act 1950* have been recorded within the local area, being; forest red-tailed black cockatoo, Baudin's cockatoo, Carnaby's cockatoo, chuditch (*Dasyurus geoffroii*) and numbat (*Myrmecobius fasciatus*) (Department of Biodiversity, Conservation and Attractions [DBCA], 2007-).

Carnaby's cockatoo and Baudin's cockatoo are listed as endangered, with forest red-tailed cockatoo listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Black cockatoos breed in large hollow-bearing trees, generally within woodlands or forests or in isolated trees (Commonwealth of Australia, 2012). These species nest in hollows in live or dead trees of karri, marri, wandoo, tuart, salmon gum, jarrah, flooded gum, York gum, powder bark, bullich and blackbutt (Commonwealth of Australia, 2012). The majority of the trees within the application area were not of a size to provide suitable breeding habitat, however a number of trees potentially suitable for breeding were identified within the application area (DWER, 2018). Fauna management practices requiring the retention of all trees which have a diameter of 50 centimetres or greater will assist in mitigating impacts to black cockatoos.

Black cockatoos have a preference for foraging habitat that includes jarrah and marri woodlands and forest heathland and woodland dominated by proteaceous plant species such as *Banksia* sp., *Hakea* sp. and *Grevillea* sp. (Commonwealth of Australia, 2012). Given the presence of *Banksia* sp., jarrah and marri within the application area, the application area comprises suitable forging habitat for the black cockatoo species. The applicant will be required to revegetate the application area post extraction with suitable foraging habitat for the black cockatoos.

The chuditch is listed as vulnerable under the EPBC Act. Chuditch are now only present in approximately five per cent of their pre-European range. Most chuditch are now found in varying densities throughout the jarrah forest and south coast of Western Australia. Chuditch use a range of habitats including forest, mallee shrublands, woodland and desert. The densest populations have been found in riparian jarrah forest (DEC, 2012). Given that no riparian vegetation was identified within the application area (DWER, 2018) significant habitat for this species is not likely to be present within the application.

The numbat is also listed as vulnerable under the EPBC Act. Numbats build nests in hollow logs or trees, or dig burrows. Only two isolated populations of this species remains at Dryandra and Perup in the southwest of Western Australia, approximately 160 kilometres apart (DotE, 2014). Given the distance to the two known remaining populations the proposed clearing is not likely to impact them.

The local area is extensively cleared with 20 per cent native vegetation remaining within the local area. The application area may contribute to an ecological linkage allowing fauna to move between remnant vegetation within the local area. However, the application area is part of a larger remnant, approximately 73 hectares in size, and therefore no ecological linkages will be severed. The applicant will be required to revegetate the application area post extraction.

Given the above, the application area provides significant foraging and potential breeding habitat for the black cockatoo species.

Therefore, the proposed clearing is at variance to this Principle.

Taking into account the applicant's avoidance and minimisation measures, it is considered that a suitable offset will counterbalance the loss of 4.5 hectares of habitat for black cockatoos. Section 6 provides further information on the adequacy of the offset provided.

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

Proposed clearing is not likely to be at variance to this Principle
According to available databases five rare flora species have been recorded within the local area (20 kilometre radius), being *Caladenia hopperiana, Diuris micrantha, Eleocharis keigheryi, Pultenaea pauciflora* and *Caladenia dorrienii*.

Caladenia hopperiana has been mapped approximately eight kilometres from the application area. This species has been recorded within and adjacent to low lying, winter wet swamps. *Diuris micrantha* is found on brown loamy clay, within winter-wet swamp, in shallow water. *Eleocharis keigheryi* is found on clay, sandy loam and emergent in freshwater, creeks and claypans. *Caladenia dorrienii* is found on clayey loam, moist sites adjacent to rivers and seasonal creeks (Western Australian Herbarium, 1998-). Given the lack of watercourses and wetlands within the application area (DWER, 2018) suitable habitat for these species is not likely to be located within the application area.

Pultenaea pauciflora can be found growing in white sand over laterite, in association with open woodlands of wandoo (*Eucalyptus wandoo*), marri (*Corymbia calophylla*), and parrot bush (*Banksia sessilis*) (Brown et al., 1998). The closest known record is located approximately 17 kilometres from the application area. Known locations of this species include Narrogin, Boddington, Brookton, Wandering and Quindanning (Department of the Environment and Energy, 2018). The application area is outside of the known distribution of this species and the soil type present within the application area is not likely to provide suitable habitat for this species.

Given the above, the application area is not likely to include or be necessary for the continued existence of rare flora.

The proposed clearing is not likely to be at variance to this Principle.

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

Proposed clearing is not likey to be at variance to this Principle
According to available databases, no threatened ecological communities (TEC) have been mapped within the application area. The closest mapped TEC is 'Eucalyptus woodlands of the Western Australian Wheatbelt' which has been mapped approximately three kilometres east of the application area.

The application area is located outside of the Wheatbelt IBRA region and the known distribution of the abovementioned TEC and therefore the application area is not likely to be necessary for the maintenance of a TEC.

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

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

Proposed clearing is at variance to to this Principle
The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The application area is located within the Jarrah Forest Interim Biogeographic Regionalisation of Australia (IBRA) bioregion and the Shire of Williams, which retain 53 and 35 per cent of their pre-European vegetation extents respectively (Government of Western Australia, 2018a).

The vegetation within the application area is mapped as Beard vegetation association 3 and Mattiske Vegetation Complex 'Dalmore 2' which retain approximately 67 and 34 per cent of their pre-European vegetation extent within the Jarrah Forest IBRA bioregion respectively (Government of Western Australia, 2018a and 2018b).

The local area is retains approximately 20 per cent of its pre-European vegetation extent.

The application comprises of vegetation in good to very good (Keighery, 1994) condition and contains significant foraging habitat and potential breeding habitat for the conservation significant black cockatoo species.

Given the above, the application area is considered to be significant as a remnant of native vegetation in an area that has been extensively cleared.

The proposed clearing is at variance to this Principle.

The requirement for the applicant to revegetate the application area post extraction will help mitigate impacts to this extensively cleared area.

Taking into account the applicant's avoidance and minimisation measures, it is considered that a suitable offset will counterbalance the loss of 4.5 hectares of vegetation considered to be a significant remnant within an extensively cleared area. Section 6 provides further information on the adequacy of the offset provided.

Table 1: Vegetation extents

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed lands (ha)	Extent remaining in all DBCA managed lands (proportion of Pre-European extent) (%)
IBRA bioregion:					
Jarrah Forest	4,506,660.26	2,406,938.58	53.41	1,673,352	69.52
Beard vegetation association in bioregion*					
3	2,390,591.54	1,606,736.77	67.21	1,299,106.94	54.34
Vegetation complex:					
Dalmore 2	43,086.11	14,841.93	34.45	2389.30	5.55

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

Proposed clearing is not likely to be at variance to this Principle

According to available databases, there are no watercourses or wetlands mapped within the application area. The closest hydrological feature is a minor watercourse located approximately 400 metres from the application area.

A site inspection undertaken by DWER officers did not identify any riparian vegetation within the application area (DWER, 2018). Noting this and the distance to the closest watercourse, it is considered that the vegetation within the application area is not likely to be growing in, or in association with a watercourse or wetland.

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

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

Proposed clearing may be at variance to this Principle

The application area has been mapped within the Department of Primary Industry and Regional Development (DPIRD) land sub systems (map units) 'Norrine Subsystem (Marradong)' which is described as 'a complex of lateritic residuals and associated pediment; gravely sand, sand, duplex yellow soils and duricrust' (DPIRD, 2017).

Risk categories	Norrine Subsystem (Marradong)
Wind erosion	10-30% of map unit has a high to extreme wind erosion risk
Water erosion	3-10% of map unit has a high to extreme water erosion risk
Salinity	30-50% of map unit has a moderate to high salinity risk or is presently saline
Subsurface Acidification	10-30% of map unit has a high subsurface acidification risk or is presently acid
Flood risk	<3% of the map unit has a moderate to high flood risk
Water logging	<3% of map unit has a moderate to very high waterlogging risk
Phosphorus export risk	10-30% of map unit has a high to extreme phosphorus export risk

Given the above the soils present within the application area may be prone to wind erosion and salinity. However, the application area is part of a larger remnant approximately 73 hectares in size and management measures including requirements for the applicant to undertaken works within three months of clearing being undertaken and revegetation of the application area post extraction will help mitigate impacts and ensure that no long term appreciable land degradation occurs.

Given the above the proposed clearing may be at variance to this Principle.

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

Proposed clearing is not likely to be at variance to this Principle
According to available databases, there are no conservation areas mapped within, or adjacent to, the application area. Six nature reserves have been recorded within the local area. The closest nature reserve is 'Williams Nature Reserve' located approximately 11 kilometres from the application area.

Given the distance to the closest conservation area, the proposed clearing is not likely to impact on the environmental values of this area.

The proposed clearing is not likely to be at variance to this Principle.

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

Proposed clearing is not likely to be at variance to this Principle
As discussed under Principle (f), there are no watercourses or wetlands mapped within the application area. The closest hydrological feature is a minor watercourse located approximately 400 metres from the application area. Noting the distance to the closest watercourse, the proposed clearing is not likely to impact on the flow or quality of surface water of this watercourse.

Groundwater salinity within the application area has been mapped as between 7,000 to 14,000 milligrams per litre total dissolved solids, which is considered to be saline to highly saline. The application area is part of a larger remnant approximately 73 hectares in size and management measures including the requirement for the applicant to undertake revegetation of the application area post extraction will mitigate impacts to the deterioration in the quality of underground water.

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

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

Proposed clearing is not likely to be at variance to this Principle
The land sub systems covering the application area have been mapped as 'less than three per cent of the map unit has a moderate to high flood risk', which is the lowest risk category (DPIRD, 2017).

Noting the size of the application area, the soil type present and that the application area is part of a larger remnant, it is considered that the proposed clearing is unlikely to cause or exacerbate the incidence or intensity of flooding.

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

Planning instruments and other relevant matters.

The Shire of Williams (2018) advised that there is no requirement under the Shire of Williams Town Planning Scheme No. 2 for the applicant to make an application for planning approval.

No Aboriginal sites of significance have been mapped within the application area.

The clearing permit application was advertised on the DWER website on 05 March 2018 with a 21 day submission period. No public submissions have been received in relation to this application.

5. Suitability of Proposed Offset

Principle 1 of the *WA Environmental Offsets Policy September 2011* outlines that environmental offsets will only be considered after avoidance and mitigation options have been pursued. The WA Environmental Offsets Guidelines August 2014 outlines a four step mitigation hierarchy; avoid, minimise, rehabilitate and offset. The avoidance and mitigation measures assessed within Section 3 of this report are deemed to be adequate in addressing this requirement.

The Delegated Officer determined that the proposed clearing will impact on the values of 4.5 hectares of significant foraging habitat for black cockatoos and significant remnant vegetation in an area that has been extensively cleared.

To offset the abovementioned significant residual impacts, the applicant proposed to conserve a nearby remnant of native vegetation (offset area) that comprises 21.1 hectares of foraging habitat for black cockatoos and vegetation in a consistent condition and vegetation type as the proposed clearing area.

In assessing whether the proposed offset is adequately proportionate to the significance of the values being impacted, DWER undertook a calculation using the Commonwealth Offsets Assessment Guide. The calculation indicated that the conservation of 21.1 hectares of native vegetation, together with the revegetation and rehabilitation of 4.5 hectares of the application area, is considered adequate to counterbalance the significant residual impacts of the proposed clearing, consistent with the *WA Environmental Offsets Policy September 2011*.

6. References

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