



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 8717/1

File Number: DWERVT3723

Duration of Permit: From 18 February 2021 to 18 February 2023

PERMIT HOLDER

Willgrow Farming Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 200 on Deposited Plan 412246, Boonanarring

AUTHORISED ACTIVITY

The permit holder must not clear more than 3 hectares of native vegetation within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. 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:

- (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. 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; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

3. Directional clearing

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

4. Offsets – conservation covenant

The permit holder shall:

- (a) Provide evidence within 12 months of the permit commencement date that a conservation covenant under section 30B of the *Soil and Land Conservation Act 1945* has been placed over the area cross-hatched red in Figure 1 of Schedule 1 for the protection and management of native vegetation in perpetuity; and
- (b) Provide to the *CEO* a copy of the executed conservation covenant.

5. 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	<ol 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 Geocentric Datum Australia 1994 (GDA94), 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); and(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition G6; and(f) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with condition 2; and

6. Reporting

The permit holder must provide to the *CEO* the records required under condition 5 of this permit when requested by the *CEO*.

DEFINITIONS

In this permit, the terms in Table 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.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
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.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
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.
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



Jessica Burton
A/MANAGER
NATIVE VEGETATION REGULATION

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

25 January 2021

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).

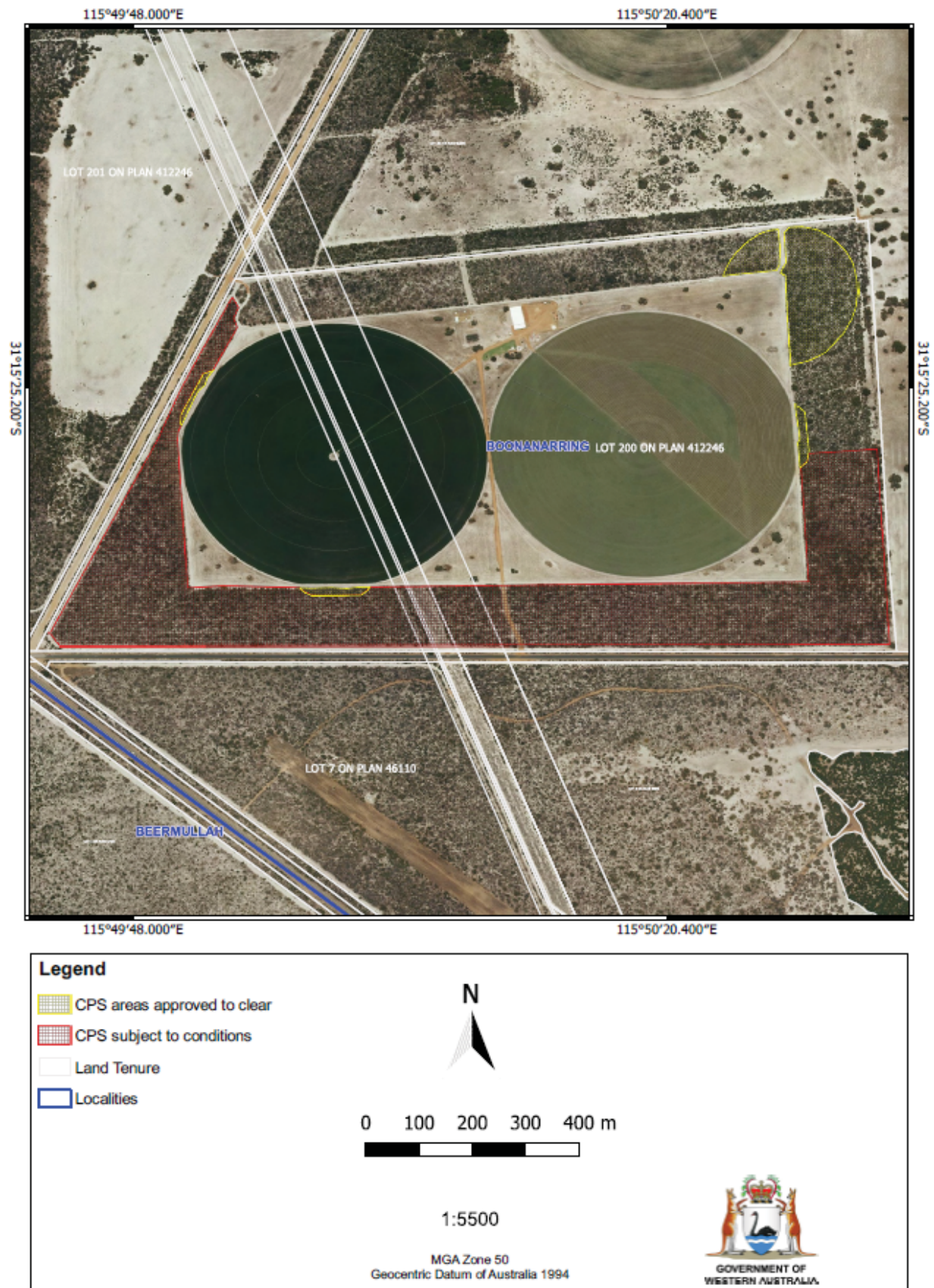


Figure 1: Map of the boundary of the area within which clearing may occur



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8717/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Willgrow Farming Pty Ltd
Application received date: 30 October 2019

1.3. Property details

Property: Lot 200 on Deposited Plan 412246, Boonanarring
Local Government Authority: Gingin, Shire Of
Localities: Boonanarring

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
3.0	0	Mechanical Removal	Cropping

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 25 January 2021

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, relevant datasets, the findings of a flora and vegetation survey and a site inspection, the clearing principles set out in Schedule 5 of the EP Act, relevant planning instruments and any other matters considered relevant to the assessment.

The assessment identified that the proposed clearing will result in:

- The removal of ten *Millotia tenuifolia* var. *laevis* (P2);
- Significant residual impacts to three (3) ha of the Endangered Commonwealth listed TEC 'Banksia woodlands of the Swan Coastal Plain' surveyed to be in 'very good' (Keighery, 1994) condition;
- Impacts to 3 ha of suitable foraging habitat for black cockatoo species;

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 4), the Delegated Officer determined the proposed clearing will have a significant residual impact on three (3) ha of vegetation determined to represent the Endangered Commonwealth TEC 'Banksia woodlands of the Swan Coastal Plain' surveyed to be in 'very good' (Keighery, 1994) condition. The offset proposed does counterbalance the impacts to the TEC (see Section 6).

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

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity; and
- protect and conserve under a conservation covenant, 21.7 ha of native vegetation surveyed to represent the Endangered Commonwealth TEC 'Banksia woodland of the Swan Coastal Plain'.

2. Site Information

Clearing Description

The application is to clear 3 hectares (ha) of native vegetation within Lot 200 on Deposited Plan 412246, Boonanarring, for the purpose of cropping and irrigation expansion (figure 1).

Vegetation Description

The application area is mapped as the following Swan Coastal Plain vegetation complexes:

- Coonambidgee complex, described as low open forest and low woodland to open woodland of *Eucalyptus todtiana* (pricklybark) - *Banksia attenuata* (slender

banksia) - *Banksia menziesii* (firewood banksia) - *Banksia ilicifolia* (holly-leaved banksia) with localised admixtures of *Banksia prionotes* (acorn banksia) to an open woodland of *Corymbia calophylla* (marri) - banksia species (approximately 2.85 ha of the application area).

- Gingin complex, as described open woodland *Corymbia calophylla* (marri) with second storey of *Banksia grandis* (bull banksia) and *Nuytsia floribunda* (approximately 0.15 ha of the application area) (Heddl et al., 1980).

Vegetation Condition

A site inspection undertaken by DWER officers (DWER, 2019) observed the vegetation under application in a degraded to a pristine (Keighery, 1994) condition, with a majority of the vegetation in a pristine condition (Keighery, 1994).

Pristine; Pristine or nearly so, no obvious signs of disturbance (Keighery, 1994).

To

Degraded; Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

Soil type

The application area is mapped within the Bassendean System as:

- Subsystem 212sMi which is described as gently undulating plain and foot slopes with yellow deep sands yellow deep sands ; and
- Subsystem 212Bs_7 which is described as bleached sand (The Commissioner of Soil and Land Conservation, 2019).

Local area

The assessment considers geographic information recorded within a 10 kilometre radius of the application area. The 10 kilometre radius is referred to as the 'local area' within the assessment.

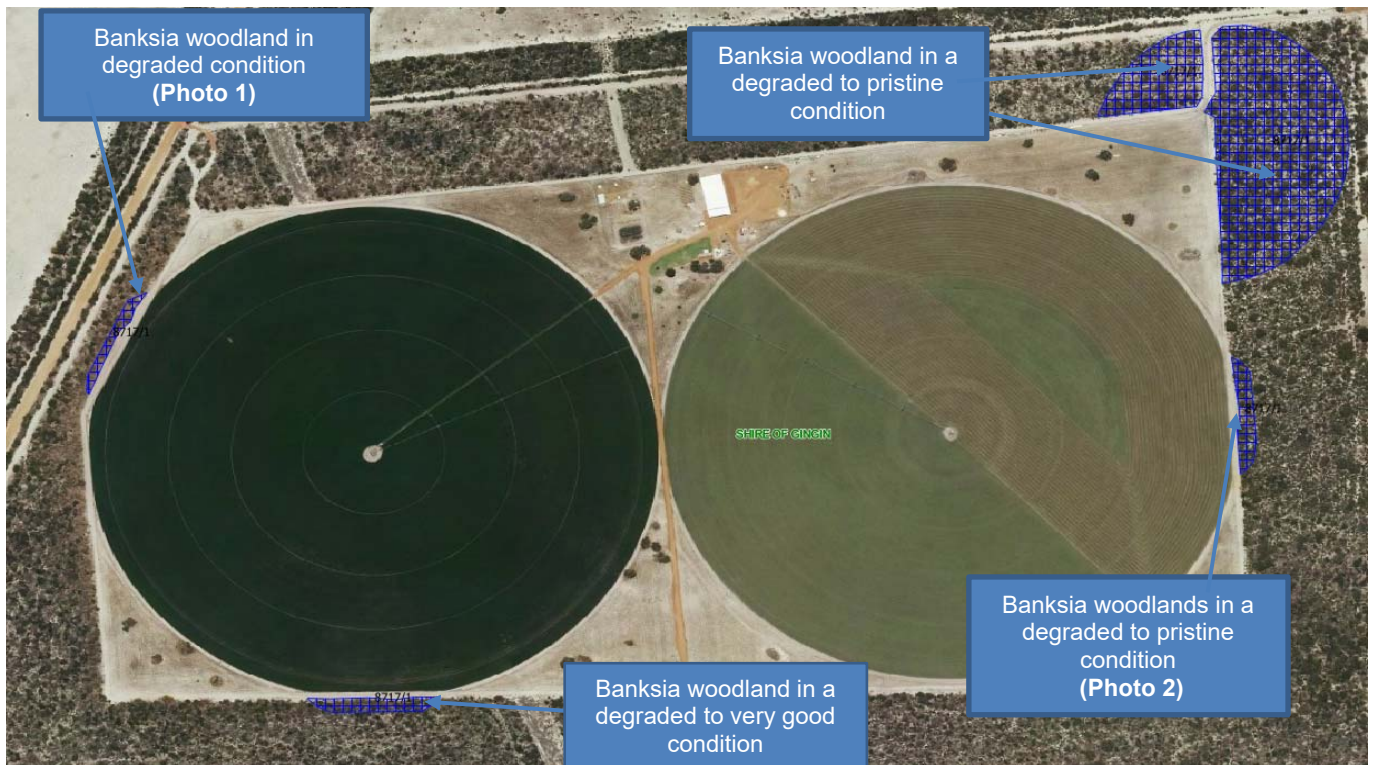


Figure 1. Application area highlighted in blue, noting the vegetation type and condition.



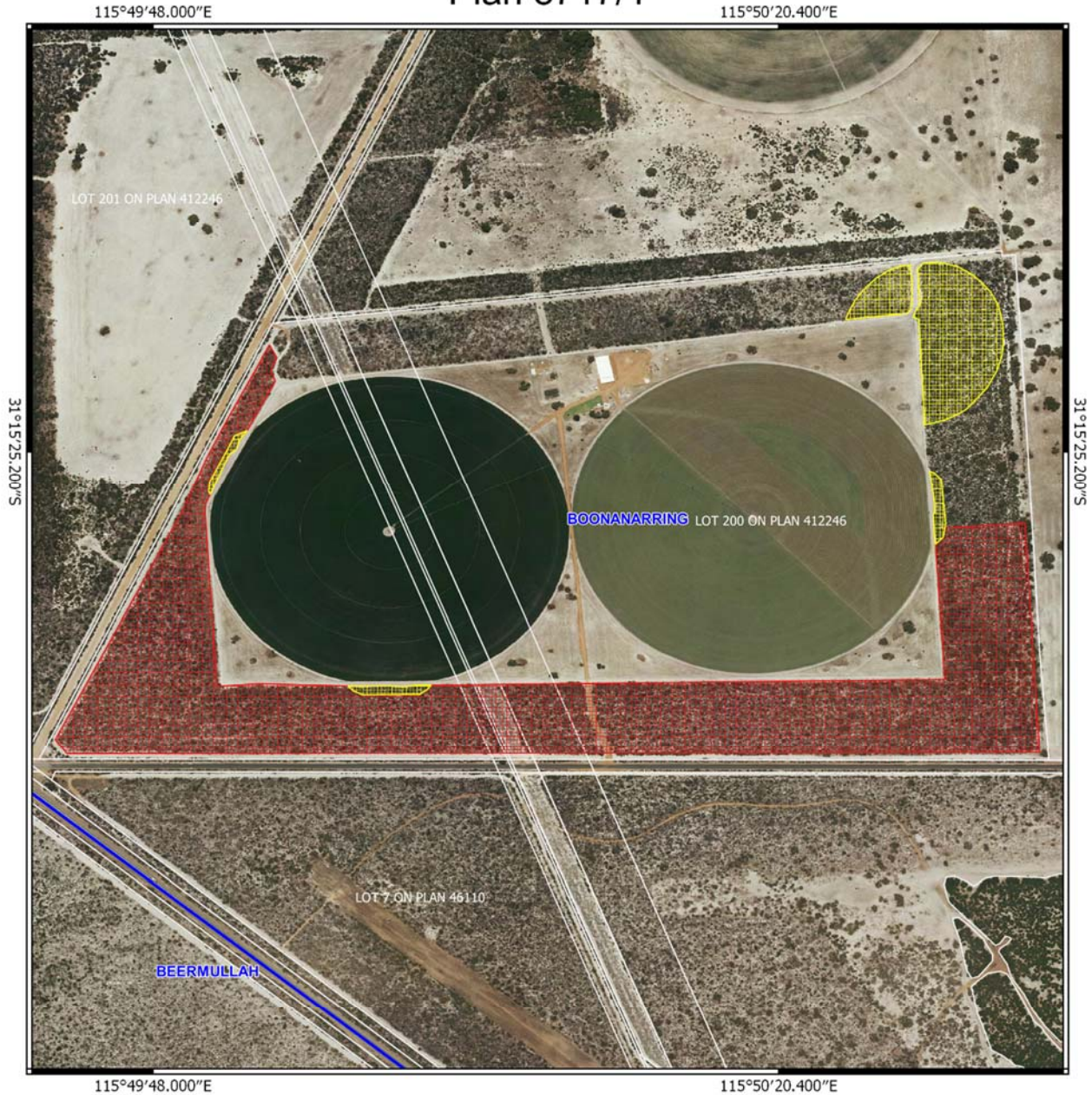
Photo 1. Banksia woodlands in degraded condition within the application area.







Photo 2. Banksia woodlands in pristine condition within the application area.

3. Site maps

Plan 8717/1



Legend

-  CPS areas approved to clear
-  CPS subject to conditions
-  Land Tenure
-  Localities


N

0 100 200 300 400 m

1:5500

MGA Zone 50
Geocentric Datum of Australia 1994

Officer delegated under section 20 of the
Environmental Protection Act 1986



**GOVERNMENT OF
WESTERN AUSTRALIA**

Figure 2. Map of the application area

The areas cross-hatched yellow indicate the areas authorised to be cleared under the granted clearing permit. The area cross-hatched red indicates area within which will be offset to counterbalance the impacts of the clearing.

4. Avoidance and minimisation measures

The applicant submitted evidence that in order to avoid areas of native vegetation requiring clearing, Willgrow has selected an already largely cleared area for the irrigation expansion area and the result is a minimised area of native vegetation requiring clearing.

In order to mitigate the extent of impacts from proposed clearing, the total extent of the clearing footprint has been reduced in all three locations where clearing has been proposed. This reduction in proposed clearing area has culminated in a total clearing footprint of less than 3 ha, reduced from the initial area of 3.99 ha as per the original application.##

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With respect to efforts towards rehabilitation and offset of unavoidable impacts, the applicant has advised that they have previously embarked on a tree-planting program throughout the property associated with the pending clearing permit application. There is a commitment from the applicant to continue with these tree planting efforts into the future, which will continue to mitigate impacts arising from the proposed clearing.

The Department considers that these minimisation measures, along with the offset that is discussed under section 6 is sufficient to counterbalance the significant residual impacts of the clearing.

5. Assessment of application against clearing principles

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

Proposed clearing is at variance with this principle

The application is to clear 3 hectares of native vegetation within Lot 200 on Deposited Plan 412246, Boonanarring, for the purpose of irrigation expansion.

According to available databases, thirty-four priority flora and five threatened flora species have been recorded within ten kilometres of the application area. Of these, based on the soil profile, known vegetation within the application area and mapped location of the flora species, two priority flora and one threatened flora species may occur within the application area. Suitable habitat for threatened flora *Ptychosema pusillum* could occur within the application area. This is based on the species having a preference for vegetation consisting of *Banksia attenuata* / *B. menziesii* woodland, growing on edge of firebreaks. This is discussed further under principle (c).

Priority 4 species *Hypolaena robusta* has been recorded within 4.2 kilometres of the application area. The species is known to occur within a variety of habitats and has a large distribution range from Augusta Margaret River (south) to Dandaragan (north) (Western Australian Herbarium, 1998-). The species is known from 46 records, including 12 within the local area of the application (Western Australian Herbarium, 1998-). The species is known to occur within open banksia woodlands of *B. attenuata*, *B. menziesii*, on white-grey sand over laterite, based on this habitat description, it is possible the application area may provide suitable habitat for this species. However, given the distribution range of this species, known records, including the local areas known records, if the species was impacted upon through the proposed clearing, it is unlikely to have an impact on the conservation status of the species.

Priority 3 species *Banksia kippistiana* var. *paenepeccata* has been recorded within 685 metres of the application area however is a different mapped soil type as the application area. This species is an erect, prickly, lignotuberous shrub growing to 0.3-1.2 m high, that flowers yellow cream from October to November. *Banksia kippistiana* var. *paenepeccata*, was extensively searched for but not found during DWER's site inspection (DWER, 2019). The soil in the application area is a light coloured sand (DWER, 2019) and not suitable for *Banksia kippistiana* var. *paenepeccata* as this species requires lateritic gravelly soils (Western Australian Herbarium, 1998-). The local record for *Banksia kippistiana* var. *paenepeccata* notes that it was found in sand over laterite. Considering this, it is unlikely that habitat for this flora species occurs within the application area.

The applicant engaged Focused Consulting to conduct a flora and vegetation assessment of the application area and a total of 86 flora species, from 67 genera and 33 families were recorded during the field assessment survey. The majority (24.16%) of the vegetation was observed to be in 'Very Good - Excellent' condition and 'Very Good' condition (24.05%) (Focused Vision, 2020). The timing of the survey (early October) was considered optimal timing to conduct a targeted significant flora survey, as spring is considered to be the peak flowering period for the region. Therefore, it is considered likely that all species occurring within the project area were recorded. One intact vegetation unit BaEt – Banksia Low Open Woodland was recorded across the project area from four quadrats (Focused Vision, 2020).

One Priority flora, *Millotia tenuifolia* var. *laevis* (P2), was recorded from two locations during the field survey. This species was not previously identified to potentially occur within the project area through DBCA database searches, however, has been previously recorded to the south of the application area in the Shire of Chittering. This species is known from 13 FloraBase records, with the closest known record occurring approximately 28 km south-east of the project area near Breera.

The Department requested a targeted flora survey for *Millotia tenuifolia* var. *laevis* outside the proposed clearing areas, to better understand the extent of the local population and to provide context for the plants recorded within the proposed clearing areas. This was conducted by Focused Vision on 20 November 2020. Given the late spring rains persisting into October and November, conditions were considered suitable to still detect the species late in its flowering season, with individuals confirmed to be identifiable at the site (Focused Vision, 2020a). At least 379 individual plants of *Millotia tenuifolia* var. *laevis* (P2) were recorded from 29 separate locations in the survey area, both within and outside proposed clearing areas. In some locations, more than 50 plants were observed, within areas of less than 10 m² (Focused Vision, 2020a). Of the plants recorded, 10 were found within

the proposed clearing area, with the remaining 369+ plants found outside these areas, to the north, west and south. In two locations, more than 50 individual plants were observed and thus, were not counted individually beyond 50 plants. This survey indicated less than 3% of the total plants recorded occur within areas proposed to be cleared. Given the presence of an abundance of the individuals in close proximity to the application area, the removal of 10 individuals is unlikely to represent a significant impact or impact on the conservation status of the species.

According to available databases, four fauna species specially protected under the *Biodiversity Conservation Act 2016*, (DBCAs, 2007-) and four priority fauna have been recorded within the local area. Of the fauna recorded within local area, it is considered that the application area is likely to provide foraging habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*). This is discussed further under Principle (b).

DWER (2019) site inspection notes that the vegetation within the application area is in a pristine to degraded (Keighery, 1994) condition, with the majority of the vegetation in a pristine (Keighery, 1994) condition. The degraded areas are suffering from dieback (DWER, 2019). The application area is dominated by *Banksia attenuata* and *Banksia menziesii*, the plant assemblage being consistent with the threatened ecological community (TEC) Banksia Dominated Woodlands of the Swan Coastal Plain (DWER, 2019).

According to available databases, several occurrences of the Federally listed Threatened Ecological Community (TEC) 'Banksia woodlands of the Swan Coastal Plain' occur within the local area, including having been mapped as occurring within the application area. This ecological community is listed as a Priority 3 Priority Ecological Community (PEC) by the Department of Biodiversity, Conservation and Attractions (DBCAs) and as a TEC under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*. The Approved Conservation Advice for the TEC states that to be considered representative of the TEC, a remnant in the Swan Coastal Plain bioregion must include at least one of four *Banksia* species being candlestick banksia, *Banksia menziesii* (firewood banksia), *Banksia prionotes* (acorn banksia) and/or *Banksia ilicifolia* (holly-leaved banksia); must include an emergent tree layer often including marri, jarrah, or tuart, and other medium trees including *Eucalyptus todtiana* (pricklybark), *Nuytsia floribunda* (WA Christmas tree), western sheoak, *Callitris arenaria* (sandplain cypress), *Callitris pyramidalis* (swamp cypress) or *Xylomelum occidentale* (woody pear); and must include an often highly species-rich understorey (Threatened Species Scientific Committee, 2016).

Condition thresholds provide guidance on when a patch of an ecological community retains sufficient conservation values to be considered a 'Matter of National Environmental Significance', as defined under the EPBC Act, and to be considered as part of the TEC minimum patch sizes by condition (Keighery, 1994) are 'pristine' – no minimum patch size applies; 'excellent' – 0.5 hectares; 'very good' – 1 hectare; 'good' – 2 hectares (Threatened Species Scientific Committee, 2016).

Based upon this and the specifications around the minimum patch size, this portion of the TEC mapped within the application areas form part of a broader area of the mapped TEC to the north and south of the application area which meets the criteria as being representative of the TEC.

The national Conservation Advice identifies current threats to the ecological community, including land clearing for development, mining for basic raw materials and associated fragmentation, dieback diseases (e.g. Phytophthora), invasive weeds and feral animals, changes to fire regimes, hydrological degradation (including changes to groundwater), climate change and other disturbances to remaining patches (TSSC, 2016). Banksia woodland was once common and formed almost a continuous band of large bushland patches around Perth and other near coastal areas, but it has been lost by about 60 per cent overall, with most remaining patches small in size (DotEE, 2016). The remaining patches of the ecological community are typically small over much of its range but especially around Perth. Small sizes make remnants more vulnerable to disturbances such as invasion by weeds or feral animals (DotEE, 2016). Given the vegetation was determined to represent the Endangered Commonwealth TEC, and the majority of the vegetation applied to clear was classified in very good to excellent (Keighery, 1994) condition, the impacts were assessed as significant and will result in a residual impact.

Given the application area includes an occurrence of the banksia woodland TEC, contains ten *Millotia tenuifolia* var. *laevis* (P2) and provides foraging habitat for Carnaby's black cockatoo, the proposed clearing is at variance with this principle.

To counterbalance the impacts to 3 ha of the Commonwealth listed TEC, the applicant has committed to an offset of 21.7 ha (see Figure 1), entered into an agreement (covenant) with the Commissioner of Soil and Land Conservation under s30 of the *Soil and Land Conservation Act 1945*. The justification for the calculations used to determine the offset area is provided under section 7. The offset area represents Banksia woodland in 'Very Good' condition, with much of this area along the southern property boundary in 'Very Good to Excellent' condition. Weed and dieback management measures will also mitigate potential impact to adjacent TEC and priority flora habitat.

(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.

Proposed clearing may be at variance with this principle

According to available databases, six threatened fauna species, four priority fauna species, four fauna species protected under international agreement and one specially protected fauna species have been recorded within the local area (DBCAs, 2007-).

Noting the habitat requirements of these species, and the type and condition of the vegetation within the application area, the application area may comprise suitable foraging habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*). A flock of 30 Carnaby's were noted flying across the application area during the site inspection (DWER, 2019).

Carnaby's cockatoo is listed as endangered under EPBC Act. Carnaby's 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).

Black cockatoo habitat can be considered in terms of breeding habitat, night roosting habitat, and foraging habitat. Black cockatoos will generally forage up to 12 kilometres from an active breeding site and, following breeding, will fly in search of food, usually within six kilometres of a night roost (DSEWPac 2012) (DotEE 2017) (DPaW 2013). Night roosts are usually located in the tallest trees of an area, and in close proximity to both a food supply and water. Flocks will use different night roosts, often for weeks, or until the local food supply is exhausted. Flocks show some fidelity to night roosts with sites used in most years to access high-quality feeding sites. However, not all night roosts are used in every year (DPaW 2013). The application area appears to only consist of one tree, *Eucalyptus totidiana* that has a diameter at breast height greater than 500 millimetres. However, this species is not a known roost or nesting tree for Carnaby's (Department of Environment and Conservation, 2019). The two closest known night roosts are located more than 12 kilometres to the south-west and south east of the application area, with the closest breeding area over 19 kilometres from the application area.

The importance of banksia woodlands as foraging habitat for Carnaby's Black Cockatoo has been demonstrated through various studies which have determined that the species will exploit all areas of available Banksia food resources on the Swan Coastal Plain (SCP) (EPA 2019). The local area comprises extensive areas of remnant vegetation which are likely to provide suitable foraging habitat for Carnaby's cockatoo, with 5,110 hectares of mapped banksia woodland and 9,250 hectares of remnant vegetation within the Boonanarring Nature Reserve located 2.5 kilometres east of the application area. In addition, approximately 30 ha of remnant adjacent vegetation of Banksia woodland will be retained within Lot 201 on Plan 412246. Given the location on the SCP and presence of known foraging species the application area may contain significant habitat for Carnaby's black cockatoos. However, based on the relatively small size of the application area and the proportion of available adjacent habitat that will remain, the impacts to Carnaby's are unlikely to be significant and the vegetation is unlikely to represent critical habitat.

The applicant has agreed to offset 21.7 ha of vegetation determined to represent the Banksia woodlands Endangered Commonwealth TEC. This 21.7 ha was described in 'overall very good' (Keighery, 1994) condition with some areas in 'very good to excellent' (Keighery, 1994) condition. Given the offset area is Banksia woodland, the entire 21.7 ha is likely to represent a foraging resource for Carnaby's black cockatoos on the SCP. The conservation of this area will act to mitigate any potential impacts to Carnaby's as a result of the clearing.

Whilst it is considered that the application area may provide habitat for other fauna in the local area, the vegetation under application is not considered to be significant. This is based on the proposed clearing consisting of four separate areas, (three areas under 0.3 ha) which are surrounded by similar vegetation of an equal quality. Additionally, the Boonanarring Nature reserve is located 2.5 kilometres east of the application area which provides a large area of habitat for fauna in the local area. To avoid potential impacts to fauna that may occur within the application area, a condition will be placed on the permit requiring slow, directional clearing to allow fauna to escape into the adjacent native vegetation.

Noting the above, the proposed clearing may be at variance with this principle. #

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

Proposed clearing not likely to be at variance with this principle

A search of the Department of Biodiversity, Conservation and Attractions (DBCA's) threatened flora database revealed that there are five species of threatened flora mapped within the local area (10 kilometre radius).

- *Banksia mimica* – Is a prostrate, lignotuberous shrub, 0.15-0.4 metres high associated with white or grey sand over laterite, sandy loam. There are 34 records of this species within FloraBase, with the closest being approximately 7.4 kilometres to the application area (Western Australian Herbarium, 1998-).
- *Goodenia arthrotricha* - Is an erect perennial, herb, to 0.4 metres high, associated with gravel, granite rocks on slopes. There are 20 records of this species within flora base, with the closest being 4.9 kilometres to the application area (Western Australian Herbarium, 1998-).
- *Ptychosema pusillum* - Is a perennial, herb, mostly 0.05-0.1 metres high associated with sandy soils on rises. There are seven records of this species within flora base, with the closest being 9.9 kilometres to the application area (Western Australian Herbarium, 1998-).
- *Thelymitra dedmaniarum* Is a tuberous, perennial, herb, to 0.8 metres high associated with granite areas. There are four records of this species within flora base, with the closest being 2.9 kilometres to the application area (Western Australian Herbarium, 1998-).
- *Thelymitra stellate* – Is a tuberous, perennial, herb, 0.15-0.25 metres high associated with sand, gravel, lateritic loam soils. There are 20 records of this species within flora base, with the closest being 3.0 kilometres to the application area (Western Australian Herbarium, 1998-).

Based upon the preferred soil types of the above mention threatened flora, it is unlikely the application area would provide suitable habitat for *Banksia mimica*, *Goodenia arthrotricha*, *Thelymitra dedmaniarum* and *Thelymitra stellate*. However, it is possible that suitable habitat for *Ptychosema pusillum* could occur within the application area. This is based on the species

having a preference for vegetation consisting of *Banksia attenuata* / *B. menziesii* woodland, growing on edge of firebreaks or disturbed farmland in vegetation adjacent to such areas (Western Australian Herbarium, 1998-). This type of habitat appears present within the application area as identified during the site inspection and illustrated in the below images of the application area.



Noting the suitable habitat for *Ptychosema pusillum* within the application area, the Department requested a flora and vegetation assessment. As previously mentioned, the applicant engaged Focused Vision (2020) to conduct a detailed flora and vegetation assessment. A desktop assessment for Threatened and Priority flora potentially occurring within the project area was undertaken prior to the field studies. Threatened and Priority flora identified from the desktop assessment were evaluated for their potential likelihood of occurring within the project area. It was acknowledged that suitable habitat may occur in the application area, however, the previous listing was record 50 years ago 10 km south-east of the project area (Focused Vision, 2020).

No species listed as Threatened flora under the BC Act or under the EPBC Act were recorded during the flora survey (Focused Vision, 2020). Given this, the proposed clearing is not likely impact on Threatened flora and 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 likely to be at variance with this principle.

According to the available databases, one state listed TEC has been recorded within the local area. This TEC is the 'Muceha Limestone' described as shrublands and woodlands on Muceha Limestone of the Swan Coastal Plain. The TEC has been recorded approximately 6.6 kilometres west of the application area.

The site inspection of the application area determined the vegetation to comprise of a *Banksia* woodland (DWER, 2019). Noting this the application is not a representation of the Muceha Limestone TEC.

Noting the above, the application area is unlikely to comprise the whole or part of, or be necessary for the maintenance of a TEC. The proposed clearing is not likely to be at variance with 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 not likely to be at variance with 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).

In assessing the risk of further loss and subsequent cumulative effects, consideration has been given to the extent of native vegetation remaining, its condition and whether it is a representation of the mapped vegetation types.

The local area retains approximately 36 per cent pre-European native vegetation cover; and as indicated within Table 1, Swan Coastal Plain complex Gingin is below the 30 per cent recommended threshold level. The complex represents approximately 0.15 hectares of the application area.

Given the extent of native vegetation remaining in the local area, the application does not occur in an extensively cleared landscape. Whilst the mapping indicates a small section of the underrepresented vegetation complex (Gingin) occurs within the application, the site inspection shows the vegetation description of the Gingin complex is not representative of the vegetation within the application area. The Gingin complex is described as an open woodland *Corymbia calophylla* (marri) with second storey of *Banksia grandis* (bull banksia) and *Nuytsia floribunda* (Hedde et al., 1980). The site inspection did not record the presence of marri or bull banksia within the application area with the vegetation described as *Banksia attenuata* and *Banksia menziesii* woodland. Noting this, the Gingin vegetation complex will not be impacted upon from the proposed clearing.

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

Table 1: Vegetation extents	Within Application area	Pre-European	Current Extent	Remaining	Current Extent in DBCA Managed Lands
	(ha)	(ha)	(ha)	(%)	(%)
IBRA Bioregion*					
Swan Coastal Plain	4	1,501,222	578,997	39	15
Swan Coastal Plain complex					
Coonambidgee	3.73	6,272	2851	45	10
Swan Coastal Plain complex					
Gingin	0.17	7,113	823	12	4

(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 with this principle

A number of wetlands and watercourses occur within the local area. A non-perennial watercourse is located approximately 386 metres from the application area, while a multiple use palusplain wetland is located approximately 580 metres away from the application area. Given the distance of the wetland and watercourse from the application area, the proposed clearing is not likely to impact upon riparian vegetation.

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

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

Proposed clearing is not likely to be at variance with this principle

As discussed in Section 2, the application area is located within two land subsystems with the most dominant being the 212sMi subsystem which occupies approximately 88.7 per cent of the application area.

The Commissioner of Soil and Land Conservation (CSLC) (2019) provided advice on land degradation impacts associated with the proposed clearing. The Commissioner advised that the application area occurs on the 'the lower and mid slope of the landscape and that the greatest risk of land degradation to these types of soil is from phosphorus export.

However, the Commissioner also advised that 'the Banksia dominated vegetation [on this land] is in very good condition with full understory' and that 'the extensive buffer of native vegetation surrounding the application area should reduce the risk of phosphorus export.

Given this, it is not considered for the proposed clearing to cause appreciable land degradation and the proposed clearing is not likely to be at variance with 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 with this principle

Within the local area, the following conservation areas have been recorded;

- Boonanarring Nature Reserve, located approximately 2.7 kilometres to the east of the application area;
- Yurine Swamp Nature Reserve, located approximately 4.0 kilometres north-east of the application area; and
- Bootine Nature Reserve, located approximately 7.3 kilometres east of the application area.

Noting the distances between these conservation areas and the application area, the proposed clearing will not have a direct impact on these conservation areas. However, it is noted that areas adjacent to the application area may be subject to an increased risk of weed and dieback being spread into these areas. Weed and dieback hygiene management practices will assist in mitigating this risk.

It is noted that an ecological linkage, as defined by the Gngangara Sustainable Strategy (GGS) (Brown et al., 2009) is mapped approximately 1000 metres south of the application area. This linkage runs east-west and is a conceptual linkage along the Moore River and Gingin Brook catchments. Given the distance between the application area and this linkage and noting that the application area is part of a larger remnant, the proposed clearing will not result in the severance of this linkage.

Given the distance between the application area and the nearest conservation reserves, the proposed clearing is not likely to impact on the environmental values of these reserves. The proposed clearing is not likely to be at variance with 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 with this principle

As discussed in Principle (f), the application area does not lie within a known watercourse or wetland. The CSLC (2019) advises that 'the clearing of the application area may contribute to nutrient enrichment of the local surface and/or groundwater, however, the extensive buffer of native vegetation surrounding the [application] area should reduce the risk of any downstream impacts'.

Considering CSLC's (2019) advice, the proposed clearing is not likely to be at variance with 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 with this principle

As discussed in Principle (f), the closest water body to the application area is palusplain wetland, which is located 580 metres from the application area. The CSLC (2019) notes that the majority of clearing is on the lower foot slopes, and only minor clearing is proposed to be undertaken, which has as an extensive vegetative buffer. The CSLC (2019) concludes that 'the removal of remnant vegetation from the application areas is not expected to contribute to flooding' (CSLC, 2019).

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

Planning instruments and other relevant matters.

The application is to clear 3 hectares of native vegetation within Lot 200 on Deposited Plan 412246, Boonanarring, for the purpose of irrigation expansion. The applicant wishes to expand their irrigation areas to make full use of their water allocation under licences GWL181304 and GWL181309 (Willgrow Farming Pty Ltd, 2019).

The Shire has advised that expansion of the existing intensive horticulture requires development approval (Shire of Gingin, 2019). On 23 June 2020, the applicant provided the Department with the Development Approval from the Shire of Gingin. The council approved the application on the 16 June, subject to conditions (BLD/6884).

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

The clearing permit application was advertised on the DWER website on 18 November 2019 with a 21 day submission period. No public submissions have been received in relation to this application.

6. Suitability of offsets

Through the detailed assessment outlined in Section 5 above, the Delegated Officer has determined that the following significant residual impacts remain after the application of the avoidance and mitigation measures summarised in Section 4:

- Removal of three (3) ha of vegetation determined to represent the Endangered Commonwealth TEC 'Banksia woodlands of the Swan Coastal Plain' surveyed to be in 'very good' (Keighery, 1994) condition.

The applicant proposed an environmental offset consisting of 21.7 ha of Banksia woodland of similar, if not equivalent, floristic composition to the proposed clearing area. Overall, the proposed offset area is in 'Very Good' condition, with much of this area along the southern property boundary in 'Very Good to Excellent' condition. The land will be entered into the Conservation Estate by the Commissioner of Soil and Land Conservation under s30 of the *Soil and Land Conservation Act 1945*. Although not the direct purpose of the offset, given the offset area is Banksia woodland, the entire 21.7 ha is likely to represent a foraging resource for Carnaby's black cockatoos on the SCP. The conservation of this area will act to mitigate any potential impacts to Carnaby's as a result of the clearing.

The Delegated Officer considers that this adequately counterbalances the significant residual impacts listed above. The justification for the values used in the offset calculation is provided in Section 7.

7. Offset calculator justification

Offset Calculation		
Field Name	Description	Justification for value used
<i>IUCN Criteria</i>	The IUCN criteria for the value being impacted	Banksia Woodlands of the Swan Coastal Plain TEC is classified as Endangered under the EPBC Act.
<i>Area of impact (habitat/community) or Quantum of impact (features/individuals)</i>	The area of habitat/community impacted or number of features/individuals impacted	3 ha of Endangered TEC
<i>Quality of impacted area (habitat/community)</i>	The quality score for area of habitat/community being impacted - a measure of how well a particular site supports a particular threatened species or ecological community and contributes to its ongoing viability	7. The vegetation was mapped as very good condition.
<i>Time over which loss is averted (habitat/community)</i>	This describes the timeframe over which changes in the level of risk to the proposed mitigation site can be considered and quantified	20 years, as the offset will be conserved in perpetuity.
<i>Time until ecological benefit (habitat/community) or Time horizon (features/individuals)</i>	This describes the estimated time (in years) that it will take for the main benefit of the quality (habitat/community) or value (features/individuals) improvement of the proposed mitigation to be realised	1. Applicant propose to secure the land with a Conservation Covenant. It will take one year to transfer the land into Conservation Estate.
<i>Start area (habitat/community) or Start value (features/individuals)</i>	The area of habitat/community or number of features/individuals proposed to mitigate the impacts	21.1572 hectares required
<i>Start quality (habitat/community)</i>	The quality score for the area of habitat/community proposed as mitigation - a measure of how well a particular site supports a particular threatened species or ecological community and contributes to its ongoing viability	7 - An offset site has not been identified for the calculation. The local area (10 kilometre radius) is within the metro area so purchase is expected to occur on the SCP. Therefore, it is considered that the acquisition of native vegetation in very good or better condition may be achievable. Therefore, a quality score of 7 has been applied.
<i>Future quality without offset (habitat/community) or Future value without offset (features/individuals)</i>	The predicted future quality score (habitat/community) or value (features/individuals) of the proposed mitigation site without the mitigation	7 - The quality of the vegetation to be acquired is not considered likely to change significantly over a 1 year period with or without acquisition for conservation
<i>Future quality with offset (habitat/community) or Future value with offset (features/individuals)</i>	The predicted future quality score (habitat/community) or value (features/individuals) of the proposed mitigation site with the mitigation	7 - The quality of the vegetation to be acquired is not considered likely to change significantly over a 1 year period with or without acquisition for conservation
<i>Risk of loss (%) without offset (habitat/community)</i>	This describes the chance that the habitat/community on the proposed mitigation site will be completely lost (i.e. no longer hold any value for the protected matter of concern) over the foreseeable future without the mitigation	30 - The property is likely to be private property and therefore could be cleared through exemptions or approved development.
<i>Risk of loss (%) with offset (habitat/community)</i>	This describes the chance that the habitat/community on the proposed mitigation site will be completely lost (i.e. no longer hold any value for the protected matter of concern) over the foreseeable future with the mitigation	10% Offset site conserved under a covenant or transferred to conservation estate.
<i>Confidence in result (%) – risk of loss (habitat/community)</i>	The capacity of measures to mitigate risk of loss of the mitigation site	90% High confidence that the sites risk will change from 30-10%
<i>Confidence in result (%) – Change in quality (habitat/community) or Change in value (features/individuals)</i>	The level of certainty about the successful achievement of the proposed change in quality (habitat/community) or value (features/individuals)	90%. High confidence that the site conditions risk will not change from 7

8. References

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- Department of Primary Industries and Regional Development (2017). NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/> (accessed November 2019).
- Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) (2012) EPBC Act referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo (endangered) Calyptorhynchus latirostris, Baudin's cockatoo (vulnerable) Calyptorhynchus baudinii, Forest red-tailed black cockatoo (vulnerable) Calyptorhynchus banksii naso. Department of Sustainability, Environment, Water, Population and Communities (now the Department of Environment and Energy), Canberra.
- Department of the Environment and Energy (DotEE) (2016). Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (s 266B). Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community.
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7.1 GIS Databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- 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
- Soil Landscape Mapping – Systems
- Wheatbelt Wetlands Stage 1 (DBCA-021)

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)