GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS
Area Permit Number: 8314/1
File Number: DWERVT2000
Duration of Permit: From 14 March 2020 to 14 March 2022

PERMIT HOLDER
DUP (WA) Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE
Lot 3 on Plan 11417, Lennard Brook

AUTHORISED ACTIVITY
The Permit Holder shall not clear more than one hectare of native vegetation within the area hatched yellow on attached Plan 8314/1.

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 or other activity 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 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 area to be cleared.

3. Records to be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit, in relation to the clearing of native vegetation authorised under this permit:
(a) 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 or decimal degrees;
(b) the date that the area was cleared;
(c) the size of the area cleared (in hectares);
(d) actions taken to avoid, minimise and reduce the impacts and the extent of clearing in accordance with condition 1 of this Permit; and
(e) actions taken to minimise the introduction and spread of *weeds* and *dieback* in accordance with condition 2 of this Permit.

4. Reporting

The Permit Holder must provide to the *CEO* the records required under Condition 3 of this Permit, when requested by the *CEO*.

DEFINITIONS

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

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;

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

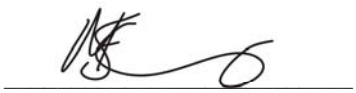
mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

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 Regional Weed Rankings Summary, regardless of ranking; or

(c) not indigenous to the area concerned.



Mathew Gannaway
SENIOR MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

13 February 2020

Plan 8314/1

Legend

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

N

0 200m

1:3,850

(Approximate when reproduced at A4)

GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

Date 13 February 2020

Mathew Gannaway

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.: 8314/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: DUP (WA) Pty Ltd
Application received date: 28 December 2018

1.3. Property details

Property: Lot 3 on Plan 11417, Lennard Brook
Local Government Authority: Gingin, Shire of
Localities: Lennard Brook

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
7 (original)		Mechanical Removal	Horticulture
0.99918 (revised)		Mechanical Removal	Horticulture

1.5. Decision on application

Decision on Permit Application: Granted
Decision Date: 13 February 2020
Reasons for Decision: The clearing permit application was received on 28 December 2018 and 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 not likely to be at variance with any of the clearing principles.

Through assessment, the Delegated Officer determined that the proposed clearing may cause the spread of weeds and dieback into adjacent areas of remnant vegetation. To mitigate potential impacts to adjacent remnant vegetation, a weed and dieback management condition has been placed on the permit. The weed and dieback management condition requires earth-moving machinery to be clean of weeds and dieback when entering and exiting the clearing area, ensure that no known dieback or weed-affected soil, mulch, fill or other material is brought into the area to be cleared and restrict the movement of machines and other vehicles to the limits of the area to be cleared.

Given the above, the Delegated Officer decided to grant a clearing permit subject to weed and dieback management. The Delegated Officer determined that the proposed clearing is not likely to lead to an unacceptable risk to the environment.

2. Site Information

Clearing Description The application proposes to clear 7 hectares of native vegetation at Lot 3 on Plan 11417, Lennard Brook, for the purpose of horticulture.

Vegetation Description The application area is mapped in the 'Swan Coastal Plain' region of the Interim Biogeographic Regionalisation for Australia (IBRA), and is mapped as the following Swan Coastal Plain vegetation complexes (Heddle et al., 1980):

- Coonambidgee complex (approximately 67 per cent) described as Vegetation ranges from a low open forest and low 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.; and
- Gingin complex (approximately 33 per cent) described as Open woodland of *Corymbia calophylla* (Marri) with second storey of *Banksia grandis* (Bull Banksia) and *Nuytsia floribunda*.

A site inspection of the application area was conducted by Department of Water and Environmental Regulation (DWER) on 20 March 2019. The site inspection identified that vegetation within the application comprises of *Banksia* Woodlands, with the exception of the southwestern portion of the application area which is dominated by *Melaleuca* sp.. A range of understorey species were identified, the most dominant species included, *Xanthorrhoea preissii, *Pelargonium capitatum,* Ericaceae sp., *Acacia pulchella,* Cyperaceae sp.*, Dasypogon bromeliifolius, Macrozamia riedlei,* Restionaceae sp., and *Hibbertia* sp.

A land degradation site inspection of the property undertaken by the Department of Primary, Industries and Regional Development (DPIRD) on 31 January 2019 found the native vegetation on the property to be dominated by low woodland and shrubland, occasional trees; *Banksia prionotes* (Acorn Banksia), some stunted *Eucalyptus marginata* (Jarrah) and *E. todtiana* (Coastal Blackbutt) and *Adenanthos* (DPIRD, 2019).

Vegetation Condition

The condition of the vegetation within the application area is considered to be good to degraded, described as:

- Good: vegetation structure significantly altered by very obvious signs of multiple disturbance; retains basic structure or ability to regenerate (Keighery 1994); to
- Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

The condition of the vegetation was determined from the DWER site inspection (DWER, 2019).

Soil type

The application area is mapped as the following land subsystems:

- Yanga 9xPhase (213Ya), which covers approximately 53.4 per cent of the application area, and is described as a flat plain with occasional low dunes. Subject to seasonal inundation. Humic and peaty sands, wet and semi-wet soils generally underlain by siliceous / humic pans at depth. *E. rudis, Melaleuca spp*., *reeds* and some *Banksia* on dunes;
- Coonambidgee 1 Subsystem (222Cb), which is mapped across approximately 45.6 per cent of the application area, and is described as gently sloping deep, white sands that occasionally overlies pale yellow sand that maybe weakly clayey below a metre. Low woodland and shrubland, occasional trees. *Banksia prionotes*, some stunted *E. marginata* and *E. todtiana* and *Adenanthos*; and
- Coonambidgee 2 Subsystem (222Cb), which is mapped across approximately 1 per cent of the application area, and is described as gently sloping fringe of pale yellow mainly sands weakly clayey at ~ 1m. Some woodland, but mainly low woodland of, *E. todtiana, B. prionotes, Adenanthos* and *Grevillia* spp. (Schoknecht, 2004).

The land degradation site inspection described the soil type and landscape as, a mixture of flat plain with occasional low dunes and gently sloping deep, white sands. The application area is considered to occupy lower and mid slope position in the landscape (DPIRD, 2019).

Comments

The local area is considered a 10 kilometre radius measured from the perimeter of the application area.

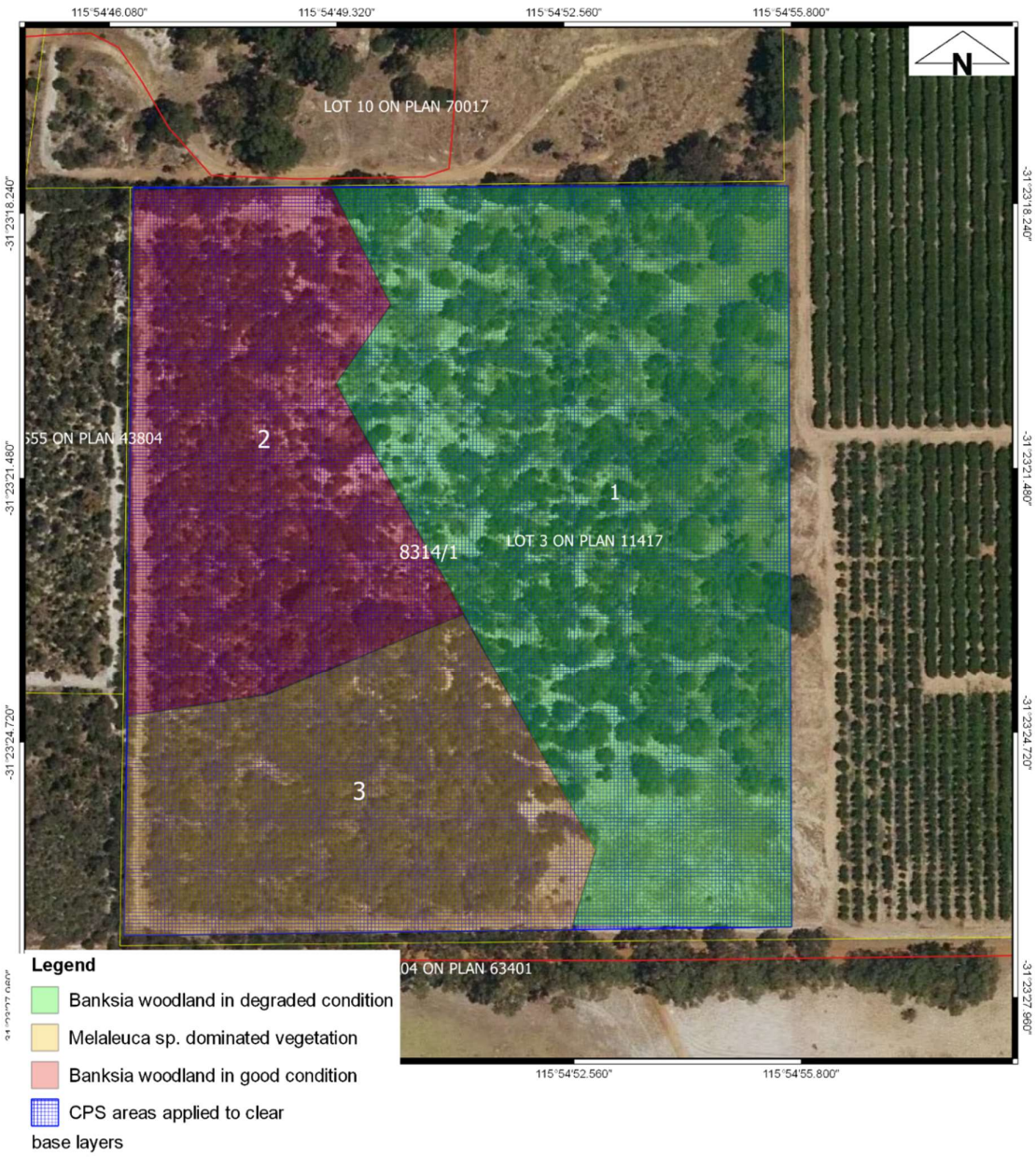


Figure 1: Original Application Area

3. Minimisation and mitigation measures

The applicant stated in the application form: "Investigated soil types for expansion and that soil would be most suitable. Require the use of the land to expand and to make the property more economically viable." (DWER Ref: A1752683).

The applicant has amended the clearing footprint from 7 hectares to 1 hectare. The following assessment is the preliminary assessment of the original 7 hectare area. Section 5 and 6 below outline the amendments made by the applicant and the consideration of the variances made in response to the amendments respectively.

4. Assessment of application against clearing principles

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

Proposed clearing may be at variance with this Principle

The application proposes to clear 7 hectares of native vegetation at Lot 3 on Plan 11417, Lennard Brook, for the purpose of horticulture.

Eighteen priority and five threatened flora species have been recorded within the local area. Threatened flora are discussed further under Principle (c). Of the eighteen priority flora, the following four priority flora species may occur within the application area:

- *Grevillea evanescens* (P1) is an erect, robust shrub, to 4 m high that inhabits brown Spearwood sand (WA Herbarium, 1998). The species is known from 15 records in the Shire of Gingin and flowers in July, August or September. The closest species has been recorded approximately 6.9 kilometres south of the application area.
- *Leucopogon squarrosus* subsp. *trigynus* (P2) is a shrub that grows approximately 150 cm high and 120 cm wide (Hislop, 2011) grows on dry white sand and is typically associated with Banksia woodland with *Banksia attenuata, B. menziesii, B. ilicifolia, Beaufortia elegans* and *Adenanthos cygnorum*. The species is known from 15 records from the Shire of Gingin and Shire of Chittering (WA Herbarium, 1998). The closest species has been recorded approximately 2.8 kilometres south of the application area.
- *Isotropis cuneifolia* subsp. *glabra* (P2) is a 0.05-0.15 m high herb or shrub typically associated with sandy, clay loam soils. The species flowers in September and is known from 17 records from the Shire of Gingin and Shire of Chittering (WA Herbarium, 1998). The closest species has been recorded approximately 1.3 kilometres south of the application area.
- *Caladenia speciosa* (P4) is a 0.35-0.6 m high herb which occurs in scattered localities over a range of 330 kilometres from the City of Busselton to the Shire of Dandaragan and tends to favour areas of white, grey or black sand. This species flowers from September to October (WA Herbarium, 1998). The closest species has been recorded approximately 600 metres north of the application area.

It is noted that much of the regional area has been cleared and given the application area comprises vegetation in a good condition it may comprise suitable habitat for these species. The Department of Biodiversity, Conservation and Attractions (DBCA) advised that a flora survey should be undertaken targeting the above listed species to determine the impact of the proposed clearing on these species (DBCA, 2019).

As discussed in Principle (b), the application area may contain habitat for black cockatoo, *Idiosoma Sigillatum* and *Tarsipes rostratus,* provides an ecological linkage facilitating landscape connectivity and contributing to fauna dispersal between larger isolated bushland fragments. Thus, it is considered that the vegetation within the application area may comprise significant habitat for indigenous fauna.

As discussed in Principle (d), the application area is not likely to comprise any state listed threatened ecological communities (TECs).

According to available datasets, approximately 4 hectares of the application area has been mapped as the ecological community 'Banksia Dominated Woodlands of the Swan Coastal Plain', listed as 'Priority 3(iii)' Priority Ecological Community (PEC) by DBCA, and as an 'Endangered' TEC under the *Environment Protection and Biodiversity Conservation Act 1999 Act* (EPBC Act).

The Approved Conservation Advice for the Banksia woodlands states:

> A number of vegetation communities or floristic community types are encompassed within the Banksia woodland ecological community. Some of these sub-communities within the Banksia woodland are highly restricted and listed as Threatened or Priority ecological communities in Western Australia. These have higher significance than sub-types known to be more common and should be provided specific or additional protection, particularly where assigned a higher threat rank than the Banksia woodland listing (Threatened Species Scientific Committee (TSSC), 2016).

The Banksia woodland typically occurs over sandy soils from Jurien Bay to Dunsborough, and extend to the Whicher and Darling escarpments (TSSC, 2016). Conservation advice for this TEC states that the principal structural features of the community are a distinctive upper sclerophyllous layer of low trees, typically dominated or codominated by one or more listed *Banksia* species, including *Banksia attenuata* (TSSC, 2016). The community may also have an emergent tree layer of jarrah and marri (TSSC, 2016).

The Approved Conservation Advice for this TEC specifies a number of key diagnostic criteria for vegetation to be considered representative of this TEC (TSSC, 2016). The site inspection undertaken by DWER Officers noted that with the exception of the area with the *Melaleuca* sp., the area appeared representative of the Banksia woodland TEC in a degraded to good condition (Keighery, 1994) (DWER, 2019).

The disturbance caused by the proposed clearing may impact adjacent native vegetation through an increase of weeds and dieback. Weed and dieback management practices will assist in mitigating this risk.

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

A flora survey of the north-western portion of the application area containing Banksia Woodland in good condition (Keighery, 1994), and a fauna survey for the portion of the application area that contains Banksia Woodland (good to degraded) is required to determine the impacts to conservation significant flora and fauna.

(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, fifteen fauna species listed as being of conservation significance under the *Biodiversity Conservation Act 2016* (BC Act) have been recorded within the local area. These include

- Forest red-tailed black cockatoo (*Calyptorhynchus banksia* subsp. *naso*);
- Carnaby's cockatoo (*Calyptorhynchus latirostris*);
- Baudin's cockatoo (Calyptorhynchus baudinii);
- Chuditch, Western Quoll (*Dasyurus* geoffroii);

- Mud minnow, Western dwarf galaxis (*Galaxiella* munda);
- Bilby, Dalgyte, Ninu (*Macrotis* lagotis);
- Carter's freshwater mussel (*Westralunio carteri*);
- Pectoral Sandpiper (*Calidris melanotos*);
- Wood Sandpiper (*Tringa glareola*);
- Common Greenshank, greenshank (*Tringa nebularia*);
- Swan Coastal Plain shield-backed trapdoor spider (*Idiosoma sigillatum*);
- Black-striped Snake, black-striped burrowing snake (*Neelaps calonotos*);
- Western Brush Wallaby (*Notamacropus Irma*);
- Blue-billed Duck (*Oxyura australis*); and
- Hooded Plover, Hooded Dotterel (*Thinornis rubricollis*) (DBCA, 2007-).

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). Potential nesting trees for black cockatoos are defined as "trees of species known to support breeding within the range of the species which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species, suitable DBH is 500 millimetres". The site inspection conducted by DWER officers identified that a high proportion of the trees within the application area were younger trees that are not likely to be suitable as habitat trees. The older growth trees identified, did not contain suitable hollows for nesting black cockatoos (DWER, 2019).

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). Noting the vegetation types present within the application area, the application area comprises of suitable foraging habitat for black cockatoos. Evidence of Black cockatoo foraging was observed during site inspection (DWER, 2019) by the way of chewed marri nuts.

DBCA (2019) advised that the Coonambidgee vegetation complex is suitable habitat for Priority 3 fauna, *Idiosoma sigillatum* (Swan Coastal Plain shield-backed trapdoor spider) and is foraging habitat for the *Tarsipes rostratus* (honey possum). While not threatened, the honey possum's habitat is being reduced significantly due to clearing, *Phytophthora* disease, severe intensity wildfires and effects of hydrological changes, i.e. sudden autumn death syndrome in *Banksia's*.

DBCA advised that a fauna survey is required to determine the impact of the proposed clearing on Black Cockatoos, shield-backed trapdoor spider and the honey possum (DBCA, 2019).

Suitable habitat for the remainder of the species recorded within the local area is not likely to occur within the application area or is not deemed to impact on the species survival within the local or regional area.

The application area is mapped within the Gnangara Sustainability Strategy Area for Ecological Linkages, which is described as an area that requires more work to determine the preferred alignment of the linkage through that landscape (Brown et al., 2009). This linkage runs east-west and is a conceptual linkage along the Moore River and Gingin Brook Catchments. The vegetation within the application area is considered to support fauna of conservation significance that use the surrounding conservation areas and support fauna movement throughout the local area.

Noting the above, the application area forms part of a significant linkage and may comprise significant habitat for black cockatoos, shield-back trapdoor spider and the honey possum.

Given 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 may be at variance with this Principle

According to available databases, five threatened flora species have been recorded within the local area:

- *Chamelaucium* sp. Gingin (N.G. Marchant 6) (T) is a shrub growing 1 to 2 m high confined to the Gingin/Chittering area, where it has a range of only 3 km and tends to favour white/yellow sand supporting open low woodland with *Eucalyptus todtiana* (Pricklybark), *Banksia attenuata* (Coast Banksia), and *Hibbertia* sp. Flowering occurs September to December (Department of the Environment, 2019a). The closest species has been recorded approximately 6.9 kilometres south of the application area.
- *Grevillea curviloba* subsp. *curviloba* (T) can occur as either a prostrate, ground-covering shrub or a tall erect shrub with broad, dark green leaves that are oval/wedge shaped and around 1.5-5 cm long (Nistelberger, 2006). The species is known from 19 records from the Shire of Gingin, Shire of Chittering and City of Swan (WA Herbarium, 1998) and is typically associated with red-brown sandy clay soils and other species such as *Melaleuca huegelii*, *M. systena* and *Acacia saligna*. Flowering occurs between September and October (Nistelberger, 2006). The closest species has been recorded approximately 7.1 kilometres south of the application area.
- *Grevillea curviloba* subsp. *incurva* (T) occurs as a ground covering or tall erect shrub (Nistelberger, 2006). This species is known from 41 records from the Shire of Gingin, Shire of Chittering and City of Swan and is typically associated with red silty clay loam and flowers August to September (WA Herbarium, 1998). The closest species has been recorded approximately 7.2 kilometres south of the application area.
- *Ptychosema pusillum* (T) is an erect herb-like plant, growing to 10 cm tall (Approved Conservation Advice for *Ptychosema pusillum* (Dwarf Pea), 2008). The species is known from 5 records from the Shire of Gingin and is typically associated with white sandy soils. Flowering occurs August to October (WA Herbarium, 1998). It occurs on the upper

slopes of a high sand ridge. Near Gingin, one population occurs adjacent to a paperbark swamp and the other is found throughout open vegetation and firebreaks (Approved Conservation Advice for *Ptychosema pusillum* (Dwarf Pea), 2008). The closest species has been recorded approximately 7.5 kilometres southwest of the application area.
- *Eleocharis keigheryi* is known from one record in the local area which has been recorded approximately 4.5 kilometers south west of the application area. It is typically associated with freshwater creek and claypans (Western Australia (WA) Herbarium, 1998).

Noting that the application area does not contain vegetation associated with a watercourse or a wetland, *Eleocharis keigheryi* is not likely to occur in the application area.

DBCA advised that given the soil and vegetation types within the application area there is a potential for *Chamelaucium* sp. Gingin, *Grevillea curviloba* subsp. *curviloba*, *Grevillea curviloba* subsp. *incurva* and *Ptychosema pusillum* to occur within the application area (DBCA, 2019). It is noted that much of the regional area has been cleared and given the application area comprises vegetation in a good condition it may comprise suitable habitat for these species. DBCA advised that a flora survey should be undertaken targeting the above listed species to determine the impact of the proposed clearing on these species (DBCA, 2019).

Given the above, the proposed clearing may be at variance with 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 available datasets, three state-listed TECs have been mapped within the local area, being 'Herb rich saline shrublands in clay pans' (vulnerable) located 1.5 km south of the application area, 'Perth to Gingin Ironstone Association' (Critically Endangered) located 6.2 kilometres south of the application area, and 'Perth to Gingin Ironstone Association' (Vulnerable) located approximately 4.2 kilometres south of the application area. Noting the distance from the application area, the species composition of these TECs and the type and condition of the vegetation within the application area, the application area is not likely to comprise the above mentioned TECs.

Given the above, 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 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).

The application area is located within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion. This IBRA bioregion has approximately 38.6 per cent of its Pre European vegetation extent remaining (Government of Western Australia, 2018).

The application area is also mapped in the following Swan Coastal Plain vegetation complexes:
- Coonambidgee Complex which is mapped across approximately 67 per cent of the application area, and retains approximately 45.4 per cent pre-European vegetation; and
- Gingin Complex which is mapped across approximately 33 per cent of the application area, and retains approximately 11 per cent pre-European vegetation.

The local area retains approximately 78 per cent native vegetation (approximately 25,492 hectares).

Given that the application are may contain suitable habitat for conservation significant fauna and flora species and a TEC, and the extensively cleared Gingin vegetation complex, the application area is considered a significant remnant.

Given the above, the proposed clearing is at variance with this Principle.

Table 1 Native vegetation statistics

	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:					
Swan Coastal Plain	1,501,222	578,997	38.6	222,767	14.8
Swan Coastal Plain Vegetation complex:					
Coonambidgee Complex	6,273	2,848	45.4	657	10.5
Gingin Complex	7,114	823	11.6	266	3.7

*Government of Western Australia. (2018) *2017 South West Vegetation Complex Statistics. Current as of October 2017.* WA Department of Biodiversity, Conservation and Attractions, Perth.

(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 at variance with this Principle

Approximately 0.35 hectares of the south-western corner of the application area has been mapped as a multiple use wetland. Multiple use category wetlands are wetlands with few important ecological attributes and functions remaining. Use, development and management should be considered in the context of ecologically sustainable development and best management practice catchment planning through landcare (Water and Rivers Commission, 2001).

The closest mapped watercourse is an unnamed minor river (ID 55591) located approximately 450 metres west from the western side of the application area. The area between the watercourse and the application area has been highly cleared and the vegetation within the application area is not likely growing in association with this watercourse.

The DWER site inspection noted that the application area contains vegetation commonly associated with wetlands and watercourses, including *Melaleuca* sp. or sedges, such as *Dasypogon bromeliifolius*. Noting the type and condition of the vegetation within the application area and the extent of the proposed clearing, the proposed clearing will impact vegetation growing in association with a wetland.

Given the above, the proposed clearing is 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 described within Section 2, primary soils within the application area are mapped by the DPIRD (DPIRD, (2019). The two primary soils mapped within the application area is Coonambidgee 1 Subsystem (222Cb) and Yanga 9xPhase (213Ya).

Table 2 Risk degradation summary

Risk categories	Yanga 9x Phase (% map unit)	Coonambidgee 1 Subsystem (% map unit)
Wind erosion	10-30% of map unit has a high to extreme wind erosion risk	>70% of map unit has a high to extreme wind erosion risk
Water erosion	50-70% of map unit has a high to extreme water erosion risk	<3% of map unit has a high to extreme water erosion risk
Salinity risk	10-30% of map unit has a moderate to high salinity risk or is presently saline	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	>70% of map unit has a high subsurface acidification risk or is presently acid
Flood risk	>70% of the map unit has a moderate to high flood risk	<3% of the map unit has a moderate to high flood risk
Water logging	>70% of map unit has a moderate to very high waterlogging risk	<3% of map unit has a moderate to very high waterlogging risk
Phosphorus export risk	>70% of map unit has a high to extreme phosphorus export risk	50-70% of map unit has a high to extreme phosphorus export risk

Coononga 1 Subsystem that is predominant within the application area has a high to extreme wind erosion risk and a high subsurface acidification risk or is presently acid. Yanga 9x phase that covers 45 per cent of the application area has a high to extreme eutrophication risk, a moderate to very high waterlogging risk and moderate to high flood risk.

The land degradation site inspection of the property indicates that the risk of land degradation (including, salinity, eutrophication, wind erosion, water erosion, waterlogging and flooding) occurring as a result of the proposed clearing is low (DPIRD, 2019). Based on this, the Deputy Commissioner for Soil and Land Conservation (DPIRD, 2019) advised that the proposed clearing is not at variance to this Principle.

Given the above, and the mapped soil types within the application area, the proposed clearing is not likely to cause appreciable land degradation, and 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 may be at variance with this Principle

There is six conservation reserves within the local area, being Nullilla Nature Reserve located approximately 1.3 kilometres south-west, Bambanup Nature Reserve located approximately 4 kilometres south-west, Yeal Nature Reserve located approximately 5.5 kilometres south-west, Breera Road Nature Reserve located approximately 7.1 kilomtres south east, and Timaru Nature Reserve located approximately 7.1 kilometres south of the application area.

The application area is mapped within the Gnangara Sustainability Strategy Area for Ecological Linkages, which is described as an area that requires more work to determine the preferred alignment of the linkage through that landscape (Brown et al., 2009). This linkage runs east-west and is a conceptual linkage along the Moore River and Gingin Brook Catchments. The vegetation within the application area is considered to support fauna of conservation significance that use the surrounding conservation areas and support fauna movement throughout the local area.

Therefore, it is considered that the proposed clearing may impact on the environmental values of the nearby conservation areas by limiting fauna movement throughout the local area.

Given the above, the proposed clearing may 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
According to available databases, the application area is mapped within a multiple use wetland of Ellenbrook Floodplain and a minor non perennial watercourse is mapped approximately 480 metres west from the application area.

The proposed clearing may increase run-off and sedimentation within the mapped wetland and possible watercourse, however this impact is likely to be minimal and short-term.

Groundwater salinity within the application area is mapped between 1000-3000 and 500-1000 milligrams per litre total dissolved solids which is considered to be brackish and marginal, respectively. Given the low salinity levels and the mapped soli types within the application area, the proposed clearing is not likely to cause deterioration in the quality of underground water in the form of salinity. A DPIRD land degradation report advised that the proposed clearing will not cause significant change on or off site salinity; and thus, the risk of salinity causing land degradation is low (DPIRD, 2019).

Given the above, 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
According to available databases, the application area is mapped within a multiple use wetland of Ellenbrook Floodplain and a minor non perennial watercourse is mapped approximately 480 metres west from the application area.

The proposed clearing may increase run-off and sedimentation within the mapped wetland and possible watercourse, however this impact is likely to be minimal and short-term.

Groundwater salinity within the application area is mapped between 1000-3000 and 500-1000 milligrams per litre total dissolved solids which is considered to be brackish and marginal, respectively. Given the low salinity levels and the mapped soli types within the application area, the proposed clearing is not likely to cause deterioration in the quality of underground water in the form of salinity. A DPIRD land degradation report advised that the proposed clearing will not cause significant change on or off site salinity; and thus, the risk of salinity causing land degradation is low (DPIRD, 2019).

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

Planning instruments and other relevant matters.

A DPIRD land degradation report advised that the proposed clearing has a low to moderate capability for the proposed land use (DPIRD, 2019).

On 24 January 2019, the Shire of Gingin (the Shire) advised that the Shire does not support the application to clear native vegetation. The Shire further explained that an expansion to the existing Agriculture Intensive (horticulture) use on the property requires development approval in accordance with Local Planning Scheme No.9 (LPS 9). The Shire advised that "the proponent has not received development approval and therefore the application to clear native vegetation does not relate to an authorised land use" (Shire of Gingin, 2019a).

On 23 December 2019, the Shire approved development approval within Lot 3 on Plan 11417 for the expansion of existing agricultural intensive (perennial horticulture – orchard) use limited to a maximum area of 1 hectare (Shire of Gingin, 2019b).

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

The clearing permit application was advertised on the DWER website on 17 January 2019 with a 21 day submission period.

During the submission period, two public submissions have been received in relation to this application.
The first Submission states: "Looking at a satellite map of the area, this bushland appears to be the end part of a small strip of bushland in the region. The total area must be of local significance. Modern environmental standards should be higher than when other parts of the region were cleared. A whole strip of land should have been kept to link with the Julimar forest. Thus, all remaining land should be preserved and properly managed. Therefore I oppose the clearing application (Submission, 2019a).

The second submission states: "There is no flora, vegetation or fauna data provided for this proposed clearing in an area that has already been extensively cleared and may support Threatened flora, vegetation communities and fauna. In summary, I strongly recommend that this Clearing Permit application not be granted until a flora, vegetation and fauna survey has been undertaken to determine whether any of the currently recognised Threatened, Priority or significant species may be impacted and so that DWER can properly assessing the impacts of the proposed clearing in relation to the Clearing Principles (Submission, 2019b).

The submitters concerns have been addressed during the assessment of clearing principles (a), (b), (c), (d) and (e) and following the applicant's submissions within Sections 5 and 6 of this report. The applicant has reduced the application area from 7 hectares to 1 hectare to avoid areas of vegetation in good (Keighery, 1994) condition which may contain priority and threatened flora, significant habitat for fauna and comprise of a commonwealth listed TEC.

5. Applicant's Submissions

On 6 May 2019, DWER wrote to the applicant, outlining the impacts identified during the assessment of the application, and inviting the applicant to provide additional advice addressing these matters.

On 1 June 2019, the applicant amended the application by reducing the clearing area from 7 hectares to 3.53 hectares. On 19 July 2019, DWER wrote to the applicant and advised that the amended application area avoided and minimised the impacts to threatened flora and TEC however the proposed clearing was still likely to have a significant impact on black cockatoo habitat. DWER requested that the applicant provide an offset that suitably counterbalances the significant residual impact to 3.53 hectares of black cockatoo foraging habitat.

On 24 September 2019, the applicant amended the application by reducing the clearing area to 1 hectare (Figure 2). The amended application area comprises of vegetation in a degraded (Keighery, 1994) condition, with smaller Banksia sp. throughout the mid storey with an understorey dominated by weeds (Figures 3 and 4).

Figure 2: Amended Application Area

Figure 3: Photo showing the vegetation within the amended application area

Figure 3: Photo showing the vegetation within the amended application area

6. Consideration of variances following applicants submission / further information

The reduced clearing area avoids the remaining 6 hectares of native vegetation including the areas of vegetation in a good (Keighery, 1994) condition and areas considered to potentially contain threatened and priority flora. The amended application area is in a degraded (Keighery, 1994) condition and contains an understorey dominated by weeds and is not likely to contain threatened and priority flora.

Given the degraded (Keighery, 1994) condition and size (1 hectare) of the application area, the proposed clearing area does not meet the key diagnostic criteria for vegetation to be considered representative of the Banksia Dominated Woodlands of the Swan Coastal Plain federally listed TEC and therefore the proposed clearing is not likely to impact upon any PECs or TECs.

In regards to Principle (b), the amended clearing area avoids the remaining 6 hectares of native vegetation within Lot 3 and avoids areas of vegetation in good (Keighery, 1994) condition. The clearing of 1 hectare of native vegetation in a degraded (Keighery, 1994) condition is not likely to impact upon significant habitat for black cockatoos, shield-back trapdoor spider and the honey possum. The vegetation remaining within Lot 3 adjacent to the amended application area will provide habitat for these species and provide an ecological linkage allowing fauna to move across the landscape.

In regards to Principle (h), the impacts on the environmental values of the nearby conservation areas by limiting fauna movement throughout the local area has been reduced. The clearing of one hectare of native vegetation in a degraded (Keighery, 1994) condition adjacent to a 6 hectare remnant in better condition is not likely to have a significant impact upon fauna movement across the landscape. Weed and dieback management practices will help minimise impacts to adjacent remnant vegetation.

In regards to Principle (e), noting the condition and type of the vegetation proposed to be cleared, the vegetation does not represent the extensively cleared Gingin Complex. Noting the reduced application area does not contain suitable habitat for threatened and priority flora, significant fauna habitat or a TEC, the proposed clearing is not considered to be a significant remnant.

In regards to Principle (f), the amended application area avoids the multiple use wetland mapped within the south west corner of Lot 3 and the riparian vegetation identified in the site inspection undertaken by DWER officers (DWER, 2019). Therefore the proposed clearing is not considered to be growing in association with a wetland or watercourse.

Considering the reduced application area, the proposed clearing is not likely to be at variance with principles (a), (b), (c), (e), (f) and (h).

There is no change to the remaining clearing principles following the reduction in the application area.

7. References

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GIS databases:

- CPS Areas applied to clear
- NatureMap (conservation significant fauna)
- DAFWA Subsystems V5
- Soils of WA
- Vegetation Complexes – Swan Coastal Plain
- Managed Tenure
- Environmentally Sensitive Areas
- TPFL Data March 2018
- WAHerb Data March 2018
- Aboriginal Sites Register
- IBRA Vegetation WA
- WA TECPEC

Land Degradation Hazards