GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8361/1
Permit Holder:	Tunney Cattle Co Pty Ltd
Duration of Permit:	13 June 2020 to 13 June 2025

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I –CLEARING AUTHORISED

1. **Purpose for which clearing may be done**
   Clearing for the purpose of grazing.

2. **Land on which clearing is to be done**
   Lot 2 on Plan 14204, Yardarino

3. **Area of Clearing**
   The Permit Holder must not clear more than 25 hectares of native vegetation within the area shaded yellow on attached Plan 8361/1.

4. **Application**
   This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

PART II –MANAGEMENT CONDITIONS

5. **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.

6. **Weed and Dieback 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 *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.

PART III – RECORD KEEPING AND REPORTING

7. Records must 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 extent of clearing in accordance with condition 5 of this Permit.
(e) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 6 of this Permit.

8. Records must be kept

(a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
    (i) of records required under condition 7 of this Permit; and
    (ii) concerning activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding calendar year.
(b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.
(c) Prior to 13 March 2025 the Permit Holder must provide to the CEO a written report of records required under condition 7 of this Permit where these records have not already been provided under condition 8(a) of this Permit.

DEFINITIONS

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

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 species-led ecological impact and invasiveness ranking summary, regardless of ranking; or
(c) not indigenous to the area concerned.

Richard Newman
DIRECTOR
NATIVE VEGETATION PROTECTION

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

13 May 2020

Plan 8361/1

29.256573°S 29.256573°S

114.990103°E 115.022941°E

114.990103°E 115.022941°E

29.283932°S 29.283932°S

Legend

- Imagery
- Clearing Instruments Activities
- Localities
- Local Government Authority

N

0 500m

1:16,910

(Approximate when reproduced at A4)

GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

..... Date 13 May 2020

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.:	8361/1
Permit type:	Purpose Permit

1.2. Applicant details

Applicant's name:	Tunney Cattle Co Pty Ltd

1.3. Property details

Property:	Lot 2 on Plan 14204, Yardarino
Local Government Authority:	IRWIN, SHIRE OF
DWER Region:	Midwest
DBCA District:	MOORA
Localities:	YARDARINO

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
25 (as revised)		Mechanical Removal	Grazing

1.5. Decision on application

Decision on Permit Application:	Granted
Decision Date:	13 May 2020
Reasons for Decision:	The clearing permit application was received on 11 February 2019 and has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*. It has been concluded that the proposed clearing may be at variance with principle (g) and is not likely to be at variance with the remaining clearing principles. The Delegated Officer noted that the proposed clearing may increase land degradadtion from wind erosion. The Delegated Officer also noted that the proposed clearing may increase the risk of weeds being introduced or spread into adjacent areas. Weed management measures will minimise impacts to adjacent areas.

Site Information

Clearing Description:	The revised application is to clear up to 25 hectares of native vegetation within Lot 2 for the purpose of grazing.
Vegetation Description:	The application area is mapped as Beard vegetation association 433: described as mosaic: Shrublands; *Acacia rostellifera* (**summer-scented wattle**) and *Melaleuca cardiophylla* (tangling Melaleuca) thicket / Sparse low woodland; *Eucalyptus erythrocorys* (illyarrie) (Shepherd et al., 2001). A site inspection of the areas under application identified the application areas comprised mainly of *Melaleuca uncinata* and *Acacia ligulata* with no native understorey (DWER, 2019). There is numerous African boxthorn (*Lycium ferocissimum)* spread out through the application footprint.
Vegetation Condition:	Degraded; Basic vegetation structure is severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management (Keighery, 1994). To Completely Degraded; The structure of the vegetation is no longer intact, and the area is completely or almost completely without native vegetation (Keighery, 1994). The majority of the vegetation within the application area is in a degraded (Keighery 1994) condition. A site inspection of the application area indicates that the application area has been subject to previous farming activities such as cropping and grazing with a large presence of weeds. There are no signs of a native mid-storey or groundcover during the site inspection. The condition of the vegetation under application was obtained from a site inspection undertaken by Officers from the Department of Water and Environmental Regulation on the 18 June, 2019.
Soil and Landform Type:	The application area is mapped within the following land subsystem: • Tamala South 4 Subsystem (Map Unit 221Ta_4) is described as low hills with relict dunes and some limestone outcrop, yellow sand with limestone outcrops and yellow deep sand.
Comment:	The local area referred to in this assessment is defined as the area within a 10 kilometre radius of the application area. Aerial imagery indicates that the local area retains approximately 45 per cent native vegetation cover.

Figure 1: Map of application area

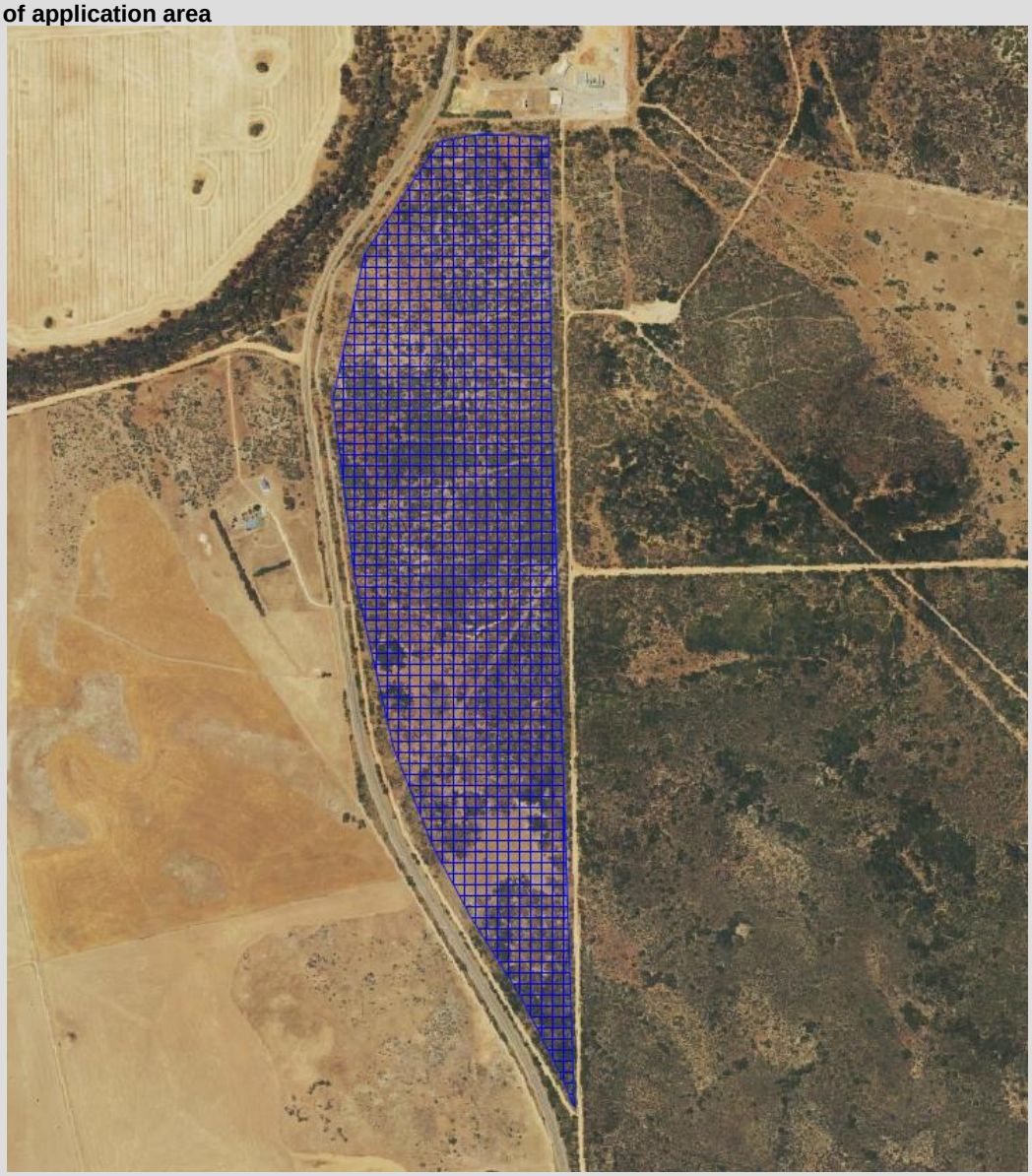

Figure 2: Photographs of vegetation within the application area

Photo 1: Is representative of the vegetation within the application.

Photo 2: Is representative of the vegetation within the application.

Photo 3: Is representative of the vegetation within the application.

Photo 4: Boxthorn within the application area.

2. Assessment of application against clearing principles

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

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

The revised application is to clear up to 25 hectares of native vegetation within clearing footprint of 57.1 hectares. The application areas appear to be substantially impacted through past agricultural activities.

The vegetation within the application area comprises of an open shrubland, the majority of which is in degraded (Keighery, 1994) condition.

According to the available datasets, three threatened fauna, 12 fauna protected under international agreement and two priority fauna have been recorded within the local area (DBCA, 2007). The application area is unlikely to provide significant habitat for these species. Fauna habitat and conservation significant fauna species are discussed under Principle (b).

According to available datasets from the Department of Biodiversity, Conservation and Attractions (DBCA), 13 priority flora and two threatened flora species have been recorded in the local area. Of these, four Priority flora species have been recorded from similar soil and vegetation types as mapped within the application area, as discussed below. Threatened flora are discussed under Principle (c).

- *Eucalyptus zopherophloia* (Priority 4) is known from 51 records at sites generally supporting grey/white sand with limestone rubble, coastal areas (Western Australian Herbarium, 1998). The nearest record of this species occurs approximately 2.3 south east of the application area.
- *Dampiera tephrea* (Priority 2) is known from 28 records at sites generally supporting sand, gravelly loam soils amongst Open *Eucalypt* woodland with *Conostylis sp., Dampiera sp., Eucalyptus wandoo*, *Hypocalymma angustifolium*, *Petrophile sp*., medium trees and tall shrubland with *Acacia, Melaleucas*, River gums and Zamia (Western Australian Herbarium, 1998). The nearest record of this species occurs approximately 2.6 kilometres south of the application area.
- *Scholtzia calcicola* (Priority 2) is known from six records at sites generally supporting yellow sands over limestone amongst *Acacia spathulifolia*, *Melaleuca systena*, *Jacksonia hakeoides* heathland. With *Banksia leptophylla*, *Jacksonia calcicola*, *Hibberia hypericoides*, *Stenanthemum notiale subsp. notiale* (Western Australian Herbarium, 1998). The nearest record of this species occurs approximately 4.8 kilometres east of the application area.
- *Acacia telmica* (Priority 3) is known from 27 records at sites generally supporting wet areas and moist soils, amongst Dense to open shrubland with *Acacia saligna*, *Eucalyptus loxophleba*, *Hakea sp., Melaleuca sp.* and *Thryptomene sp.Mingenew* (Western Australian Herbarium, 1998). The nearest record of this species occurs approximately 2.6 kilometres north west of the application area. The site inspection for this assessment recorded a single specimen of this species (DWER, 2019). A search was undertaken within the vicinity of the identified individual, however there was no evidence of other individuals in the area. The clearing of one individual is unlikely to impact on the conservation status of the species. Additionally, the application area does not consist of wet areas or permanent wet moist soils and the vegetation is not consistent with Dense to open shrubland, the preferred habitat for the species.

Noting the vegetation was in a degraded to completely (Keighery, 1994) condition (DWER, 2019), and the application area is highly disturbed from historical grazing activities, evident of the ground cover consisting of grasses and no native species, it is highly likely that the application areas does not contain suitable habitat for the abovementioned priority flora species. Furthermore, the soil, vegetation and habitat preference of the priority species listed above is not represented within the application area.

The Delegated Officer has determined that the application does not comprise a high level of biological diversity as the vegetation under application is in a degraded to completely degraded (Keighery, 1994) condition (DWER, 2019), does not represent a threatened or priority ecological community, does not comprise of significant habitat for threatened flora or conservation significant fauna and does not contain a wetland or watercourses of conservation value..

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

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

According to the available datasets, three threatened fauna species, two priority fauna species and 12 fauna species that are protected under international agreement have been recorded within the local area (DBCA, 2007). The three threatened fauna species are Carnaby's cockatoo (*Calyptorhynchus latirostris*), Australian Lesser noddy *(Anous tenuirostris subsp. melanops)* both listed as endangered under the *Biodiversity Conservation Act 2016* (**BC Act**) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**), and Chuditch (*Dasyurus geoffroii*) listed as vulnerable under the **BC Act** and the EPBC Act. The majority of fauna protected under international agreement and one of the priority fauna species are water-based species that occur within the local area. Noting the absence of hydrological features and the terrestrial vegetation that occurs within the application area, suitable habitat is not likely to occur within the application area for these fauna species.

The Australian Lesser noddy is generally associated with marine environments, and the application area is not preferred habitat for this species.

The chuditch was one present across mainland Australia, however it is now present in approximately five per cent of its former range. Most chuditch are now found in varying densities throughout the jarrah forest and south coast of Western Australia (DEC, 2012). They also occur at lower densities in the Goldfields and Wheatbelt, as well as in Kalbarri National Park (translocated). Chuditch use a range of habitats including forest, mallee shrublands, woodland and desert. The most dense populations have been found in riparian jarrah forest (DEC, 2012). Based on the known populations of chuditch and their preferred habitat, the application area is unlikely to provide habitat for the species.

Carnaby's cockatoo has 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 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 (*Eucalyptus diversicolor*), marri, wandoo, tuart (*Eucalyptus gomphocephala*), salmon gum (*Eucalyptus salmonophloia*), jarrah, flooded gum, York gum (*Eucalyptus loxophleba*), powder bark (*Eucalyptus accedens*), bullich (*Eucalyptus megacarpa*) and blackbutt (Eucalyptus spp.) (Commonwealth of Australia, 2012). To be suitable as a black cockatoo breeding site, trees require a suitable nest hollow or need to be of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species, a suitable DBH is 500 millimetres (Commonwealth of Australia, 2012). The application areas comprises mainly of *Acacia rostellifera* (fabaceae species) and *Melaleuca cardiophylla* (Myrtaceae species), this type of habitat is not the preferred foraging, breeding or roosting habitat for Carnaby's cockatoo. The proposed clearing is highly unlikely to impact the species as there are no confirmed nesting sites in proximity to the application area, there were no potentially suitable hollows identified within the application area and there was no evidence of cockatoo foraging when the site was inspected.

Noting the application is in a degraded (Keighery, 1994) to completely degraded (Keighery, 1994) condition, contains no native understorey or ground cover, it is unlikely to provide suitable habitat for other terrestrial fauna species that occurs within the local area.

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

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

According to the available datasets, only two threatened flora species have been recorded within the local area (10 kilometre radius), both species have been mapped as occurring within different soil of vegetation type as the application area.

Conostylis dielsii subsp. *teres* has been recorded approximately 8.7 kilometres away from the application area. There are 24 records of the species within florabase (WA Herbarium, 1998). It is found on white, pale yellow or grey sand with lateritic gravel, in heath, open scrub, low open heath and low open woodland, in upland areas. Associated species include *Allocasuarina* species*, Hibbertia hypericoides, Dryandra fraseri, Banksia scabrella, Ecdeiocolea monostachya* and *Hakea* species (Approved Conservation Advice, 2016).

Wurmbea tubulosa has been recorded approximately 9.1 kilometres from the application area. There are 24 records of the species within florabase (WA Herbarium, 1998). The species grows in clay and sandy-clay, clay-loam or brown loam under shrubs on riverbanks, along drainage lines and in seasonally wet places in woodland of *Eucalyptus loxophleba* (york gum), with an open shrub layer including *Acacia* and *Hakea* species (Approved Conservation Advice).

The vegetation within the application area comprised mainly of *Melaleuca uncinata* and *Acacia ligulata* with no native understorey (DWER, 2019), and the mapped soils within the application area are described as described as low hills with relict dunes and some limestone outcrop, yellow sand with limestone outcrops and yellow deep sand.

These mapped soil types and predominant species are inconsistent with the soil types and vegetation associations in which the threated species, *Conostylis dielsii* subsp. *teres* and *Wurmbea tubulosa*, are found.

Noting the above and condition of the vegetation within the application area including extensive weed invasion, the application area is not likely to include, or be necessary for the continued existence of, threatened flora including the conservation significant species within the local area.

(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 databases, no threatened ecological communities are mapped within the local area (10 kilometre radius). Noting this and that the application area is historically disturbed with the presence of a variety of weed species, including African boxthorn, and that the vegetation is in degraded (Keighery, 1994) to completely degraded (Keighery, 1994) condition, the application area is not likely to comprise the whole or part of, or be necessary for the maintenance of a threatened ecological community.

(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).

As indicated in Table 1, the remaining extents of native vegetation within the bioregion and mapped vegetation association are above the 30 per cent threshold.

Aerial imagery indicates that the local area retains approximately 45 per cent native vegetation cover, with a large proportion of this vegetation occurring within conservation areas.

Noting the vegetation extents, and that the application area does not contain significant fauna habitat or contain rare and priority flora, the application area is unlikely to be significant as a remnant within an extensively cleared area.

Table 1: Vegetation extents

	Pre-European	Current Extent	Remaining	Current Extent in DCBA Managed Lands	
	(ha)	(ha)	(%)	(ha)	(%)
IBRA Bioregion*					
Geraldton Sandplains	3,136,037	1,404,431	45	568, 223	40.5
Beard vegetation association*					
433	32,460	14,746	45.5	1,603	11
Beard vegetation association in IBRA bioregion:					
433 (Geraldton Sandplains)	32,460	14,746	45.5	1,603	11

(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

According to available databases, no wetlands or watercourses are recorded within the application area. Un-named watercourses are mapped 216 metres east of the application area and another 809 metres of the application area. The Irwin River is located approximately 170 metres from the application area.

Noting the above, the vegetation under application is not growing in, or in association with, an environment associated with a watercourse or wetland.

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

Proposed may be at variance with this Principle

The application area is located within the Tamala South 4 land subsystem (Schoknecht et al., 2004).

The land degradation report advised of areas assessed to have high to very high susceptibility to wind erosion, and that the risk of wind erosion associated with the proposed clearing and proposed land use is due to a combination of the sandy nature of the soils. Noting this, the proposed clearing is likely to increase this risk of wind erosion, however a large extent of vegetation will remain within the clearing footprint and the increased risk associated with wind erosion is unlikely to be significant.

The risk of land degradation in the form of waterlogging, water erosion, flooding, eutrophication and salinity from the proposed clearing is low (Deputy Commissioner of Soil and Land Conservation, 2016).

Noting the above there is a possible increase risk of wind erosion from the proposed clearing, however any increased wind erosion in unlikely to be significant.

(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

According to available datasets, the local area (10 kilometre radius) contains a number of conservation areas, including the following;

- Yardanogo Nature Reserve, approximately 7.6 kilometres south-east;
- Beekeepers Nature Reserve, approximately 5.2 kilometres south-west; and
- Dongara nature reserves, approximately 8.8 kilometres north-west.

As the application area is not within close proximity to a managed conservation area, it is unlikely the proposed clearing will have a direct impact on the known conservation areas through the spread of weeds and dieback. However, the site inspection noted the application area is adjacent to vegetation in good or better condition and the proposed clearing could introduce weeds and dieback into these areas. A Weed and dieback condition in the Clearing Permit will help mitigate this risk.

Based upon the location of the conservation areas that occur in the local area, the application is not considered to act as a linkage facilitating the movement fauna movement across the landscape.

(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 under Principle (f), no watercourses or wetlands occur within the application area.

The Commissioner of Soil and Land Conservation advised that the proposed clearing is unlikely to contribute to nutrient enrichment of surface and/or groundwater bodies in the applied area given the soil types present within the application area (Deputy Commissioner of Soil and Land Conservation, 2019).

The groundwater salinity within the application area ranges between 1,000-7,000 total dissolved solids per milligram per litre. The Commissioner of Soil and Land Conservation advised that there were no signs of salinity on site or in the general area, and that no significant changes to groundwater salinity are expected as a result of the proposed clearing (Deputy Commissioner of Soil and Land Conservation, 2019).

(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

The Commissioner of Soil and Land Conservation advised that the risk of flooding occurring as a result of the proposed clearing is low (Deputy Commissioner of Soil and Land Conservation, 2019).

Given the above, the proposed clearing is unlikely to cause, or exacerbate, the incidence or intensity of flooding.

3. Planning instruments and other relevant matters.

The application originally sought the clearing of 65.94 hectares of native vegetation, including a 8.82 hectares remnant patch of vegetation that was predominately in an excellent (Keighery, 1994) condition (DER, 2019). The Department of Water and Environmental Regulation (DWER) advised the applicant that additional information would be required to inform the assessment of clearing impacts in relation to larger remnants of vegetation, including possible fauna, flora and vegetation surveys. The applicant subsequently requested that the application area be revised to avoid this area, thereby reducing the clearing size to 25 hectares comprising of vegetation being in a degraded (Keighery, 1994) to completely degraded (Keighery, 1994) condition as shown in Figure 2.

The application area is located adjacent to an area under a conservation covenant, covering an area of approximately 1,217 hectares. Given the close proximity of the application area to covenant, there is potential for weeds and dieback to spread or be introduced into this area as a result of the proposed clearing. A weed and dieback condition in the Clearing Permit will help mitigate this risk.

One Aboriginal Site of Significance: Irwin River (registered site) overlaps the application area. It is the applicant's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

The application area falls within Arrowsmith groundwater area, a proclaimed groundwater resource under the Rights in Water and Irrigation Act 1914. It is the applicant responsibility to acquire licence take groundwater should it be needed for the purpose of the application.

The application area is zoned as General Farming under the Town Planning Scheme.

The clearing permit application was advertised on the DWER website on 08 April 2019 with a 21 day submission period. No public submissions were received in relation to this application.

4. References

Approved Conservation Advice (2016). *Conostylis dielsii subsp. teres*. The Minister's delegate approved this conservation advice on 01/04/2016. **Established under the *Environment Protection and Biodiversity Conservation Act 1999***

Approved Conservation Advice (2016). *Wurmbea tubulosa.* The Minister's delegate approved this conservation advice on 01/04/2016. **Established under the *Environment Protection and Biodiversity Conservation Act 1999***

Deputy Commissioner of Soil and Land Conservation (2019) Land Degrad ation Assessment Report for Clearing Permit Application CPS 8361/1 (DWER Ref A1789416).

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

Commonwealth of Australia (2012) EPBC Act referral guidelines for three threatened black cockatoo species. Department of Sustainability, Environment, Water, Populations and Communities, Canberra.

Department of Biodiversity Conservation and Attractions (DBCA) (2007) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: http://naturemap.dpaw.wa.gov.au/. Accessed March 2020

Department of Environment and Conservation (2012). Chuditch (Dasyurus geoffroii) Recovery Plan. Wildlife Management Program No. 54. Department of Environment and Conservation, Perth, Western Australia

Department of Water and Environmental Regulation (DWER) (2019) Site visit report for clearing permit application CPS 8361/1, 18 June 2019. Department of Water and Environmental Regulation, Western Australia (DWER Ref:A1882824).

Government of Western Australia (2018). 2017 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of December 2017. WA Department of Parks and Wildlife, Perth.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Schoknecht, N., Tille, P. and Purdie, B. (2004) Soil-landscape mapping in South-Western Australia – Overview of Methodology and outputs' Resource Management Technical Report No. 280. Department of Agriculture.

Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Biodiversity, Conservation and Attractions. http://florabase.dpaw.wa.gov.au/ (accessed March 20120).

GIS Databases:
Aboriginal Sites of Significance
DBCA Estate
DEC Covenant
Groundwater salinity
Hydrography, linear
Remnant vegetation
SAC bio datasets (accessed March 2020)
Soils, Statewide
Topographic contours
Wetlands