



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose permit number:	2924 / 1
Permit holder:	Julyan Richard Sumner Susan Sumner
Duration of permit:	26 April 2009 – 26 April 2017

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 silviculture.

2. Land on which clearing is to be done

LOT 2508 ON PLAN 229100 (DINNINUP 6244)

LOT 2509 ON PLAN 229100 (DINNINUP 6244)

3. Area of Clearing

The permit holder must not clear more than 80 hectares of native vegetation within the area hatched yellow on attached Plan 2924/1.

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.

5. Compliance with Assessment Sequence and Management Procedures

Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the permit holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

6. Type of clearing authorised

(a) The Permit Holder may undertake the following activities:

- (i) clearing of *understorey* within the areas cross-hatched yellow on Plan 2924/1;
- (ii) clearing for the establishment of a *log landing* no larger than 0.1 hectares in size;
- (iii) *thinning* of Wandoo (*Eucalyptus wandoo*) trees;
- (iv) *culling* of unsaleable trees; and
- (v) burning of cleared *understorey* and *culled* trees.

(b) Clearing authorised under this Permit must be completed by 19 April 2013, being four years from the date from which this Permit becomes valid.

7. Avoid, minimise etc 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.

8. 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) shall not move soils in wet conditions;
- (c) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (d) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

9. Vegetation management

- (a) Prior to undertaking any clearing authorised under this Permit, an *environmental specialist* must determine the species composition, structure and density of the understorey of areas proposed to be *thinned*.
- (b) The Permit Holder must retain a minimum of 3 *habitat trees* within the area of clearing authorised under this Permit.
- (c) A minimum retention rate of 8m²/ha *basal area* is required within the area of clearing authorised under this Permit.
- (d) Prior to undertaking any clearing authorised under this Permit, the Permit Holder must exclude all *stock* from the areas subject to *thinning* activities.
- (e) Within two years of completing clearing of native vegetation authorised under this Permit, the Permit Holder must:
 - (i) determine the species composition, structure and density of the *understorey* of areas subject to *thinning*; and
 - (ii) where, in the opinion of an *environmental specialist*, there is evidence that *understorey* will not recover and develop towards its pre-clearing composition, structure and density determined under condition 9(e)(i), the Permit Holder must undertake *remedial action* at an *optimal time* within the next 12 months to ensure re-establishment of *understorey* prior to expiry of this Permit.

10 Fauna management

- (a) Prior to undertaking any clearing authorised under this Permit, the area(s) shall be inspected by a *fauna specialist* who shall identify tree(s) that contain hollows suitable to be utilised as habitat by fauna listed in the *Wildlife Conservation (Specially Protected Fauna) Notice 2008(2)*.
- (b) Prior to clearing, any *habitat tree(s)* identified by condition 10(a) shall be inspected by a *fauna specialist* for the presence of fauna listed in the *Wildlife Conservation (Specially Protected Fauna) Notice 2008(2)*.
- (c) Prior to clearing, the Permit Holder shall ensure that any fauna identified by condition 10(b) shall be removed and relocated by a *fauna clearing person*, in accordance with a licence issued by the Department.

11. Vegetation management – watercourse

The Permit Holder shall not clear native vegetation within 30 metres of the *riparian vegetation* of any *watercourse* within the area cross-hatched yellow on Plan 2924/1.

PART III - RECORD KEEPING AND REPORTING

12. Records must be kept

- (a) In relation to the clearing of native vegetation undertaken pursuant to this Permit:
- (i) the species composition, structure and density of the cleared area;
 - (ii) 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;
 - (iii) the date that the area was cleared; and
 - (iv) the size of the area cleared (in hectares).
- (b) In relation to vegetation management pursuant to condition 9 of this Permit:
- (i) prior to clearing native vegetation authorised under this Permit, the species composition, structure and density of *understorey*;
 - (ii) the species and number per hectare of *habitat trees* retained;
 - (iii) the location of *habitat trees* retained, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (iv) monitoring undertaken to ensure that the specified minimum *basal area* is retained;
 - (v) photographs of the *understorey* taken at one year, two years and three years after completing clearing authorised under this Permit; and
 - (vi) a detailed description of the nature and extent of any *remedial actions* undertaken.
- (c) In relation to fauna management pursuant to condition 10 of this Permit:
- (i) the location of each tree that contains hollows, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (ii) the species of fauna reasonably likely to utilise, or that have been observed utilising, the trees that contain hollows;
 - (iii) the location of surrogate trees for relocation with vacant hollows, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings; and
 - (iv) the location and date where relocated fauna was released, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings.

13. Reporting

- (a) The Permit Holder must provide to the CEO, on or before 30 June of each year, a written report of records required under condition 12 of this Permit and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.
- (b) Prior to 26 January 2017, the Permit Holder must provide to the CEO a written report of records required under condition 12 of this Permit where these records have not already been provided under condition 13(a) of this Permit.

Definitions

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

basal area is the method of expression of tree cover density in an area where the total area of tree trunk, measured at average adult human breast height, is expressed as square metres per hectares of land area;

dieback means the effect of *Phytophthora* species on native vegetation;

culled/ing means the selective removal and/or killing of unsaleable trees for *thinning*, using methods including notching, felling or machine pushing;

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or

equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

fauna clearing person means a person who has obtained a licence from the Department, issued pursuant to the *Wildlife Conservation Regulations 1970* authorising them to take fauna;

fauna specialist means a person with training and specific work experience in fauna identification or faunal assemblage surveys of Western Australian fauna;

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

habitat tree(s) means trees that have a diameter, at average adult human chest height, of greater than 70cm, healthy but with dead limbs and broken crowns that are likely to contain hollows and roosts suitable for native fauna, or where these are not present then healthy but with the potential to contain hollows and roosts;

log landing/s means an area established for the purpose of stockpiling commercially harvested trees, to enable loading for collection;

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

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

thinned/ing describes a silvicultural activity to promote the growth of selected trees by removing competing trees;

remedial action/s means for the purpose of this Permit, any activity that is required to ensure successful re-establishment of *understorey* to its pre-clearing composition, structure and density, and may include a combination of soil treatments and *revegetation*.

riparian vegetation has the meaning given to it in Regulation 3 of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004;

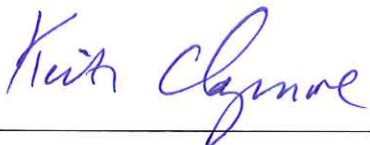
stock means the horses, cattle, sheep, pigs and other non-indigenous grazing animals kept or bred on a property;

watercourse has the meaning given to it in section 3 of the *Rights in Water and Irrigation Act 1914*;

weed means a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the Agricultural and Related Resources Protection Act 1976.

wetland/s means an area of seasonally, intermittently or permanently waterlogged or inundated land, whether natural or otherwise, and includes a lake, swamp, marsh, spring, dampland, tidal flat or estuary

understorey means, for the purpose of this Permit, all native vegetation that does not include trees to be *culled* or subject to harvest



Keith Claymore
A/ ASSISTANT DIRECTOR
NATURE CONSERVATION DIVISION

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

26 March 2009

CPS 2924/1, 26 March 2009

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Plan 2924/1



LEGEND

- Clearing Instruments
- Areas Approved to Clear
 - Cadastre
 - Dinninup 50cm Orthomosaic - Landgate 2004



Scale 1:28592
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

Karl Claymore Date *26/3/09*
K. Claymore

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

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



Department of Environment and Conservation

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1. Application details

1.1. Permit application details

Permit application No.: 2924/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: MR Julyan Richard and Mrs Susan Sumner

1.3. Property details

Property: LOT 2508 ON PLAN 229100 (DINNINUP 6244)
 LOT 2509 ON PLAN 229100 (DINNINUP 6244)
 LOT 2508 ON PLAN 229100 (DINNINUP 6244)
 LOT 2508 ON PLAN 229100 (DINNINUP 6244)
 LOT 2509 ON PLAN 229100 (DINNINUP 6244)
 LOT 2509 ON PLAN 229100 (DINNINUP 6244)

Local Government Area: Shire Of Boyup Brook

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
80		Mechanical Removal	Timber Harvesting

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
The following Beard vegetation associations exist within the application area:-	The property under application consists predominately of wandoo forest (approx 200 ha) with some areas dominated by jarrah (approx 50 ha).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The condition and description of the vegetation under application was determined via the use of aerial imagery an applicant supplied management plan and a DEC conducted site inspection.
Beard 3 - Medium forest; jarrah-marri			
Beard 4 - Medium woodland; marri & wandoo	The vegetation is considered to be in a good to very good (Keighery 1994) condition. The application area has been subjected to silvicultural activities since the 1950's.		
The following Matiske complexes are present within the application area:-	The understory is relatively weed free apart from the external boundaries where the grass from neighbouring pastures has invaded (Bradshaw, 2005).		
Dalmore 2 - Woodland of Eucalyptus wandoo with a weak admixture of Corymbia calophylla.			
Lukin 2 - Woodland to Open Forest of Eucalyptus marginata subsp. marginata and Corymbia calophylla			
Some areas of Kulikup 2 and Darkin 3 & 1 are also present.			
Kulikup 2 - Open forest of Eucalyptus marginata subsp. marginata (Jarrah) -			

Corymbia calophylla (Marri) with some Eucalyptus wandoo (Wandoo) and occasional Eucalyptus astringens (near breakaways) over Acacia microbotrya on undulating uplands in the semiarid zone.

Darkin 3 -Open woodland of Allocasuarina huegeliana (Rock Sheoak) - Acacia acuminata (Jam) with occasional Eucalyptus rudis (Flooded Gum) and Eucalyptus wandoo (Wandoo) on variable slopes near granite outcrops and woodland of Eucalyptus astringens - Eucalyptus wandoo (Wandoo) on breakaways in the arid zone.

Darkin 1 - Woodland of Eucalyptus marginata subsp. marginata (Jarrah) - Eucalyptus wandoo (Wandoo) - Corymbia calophylla (Marri) over Banksia sessilis (Parrotbush) on uplands in the arid zone.

3. Assessment of application against clearing principles

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

Comments Proposal may be at variance to this Principle

The 232 hectares of wandoo woodlands and Jarrah forest under application are considered to be in a good to very good (Keighery 1994) condition. The proposed clearing is to occur within an area of 80 hectares and will target only wandoo trees which will be thinned in accordance with CALM guidelines (Bradshaw, 2005; CALM, 2004). The vegetation is significant as a remnant in a highly cleared area, with aerial imagery showing that approximately 15% of native vegetation remains in the local area (10km radius). The vegetation could be important habitat for fauna species and due to the large size of the application area (DEC, 2009a; DEC, 2009b).

The application area is comprised of several vegetation types, including 2 Beard vegetation associations and 4 Mattiske complexes, although the majority of the area is comprised of Mattiske DM2, Lk2 and Beard 3 (DEC, 2009c).

Given the size of the proposed clearing coupled with no flora survey having been undertaken within the application area, rare/priority species may occur within the application area. However the priority species found in the area have multiple occurrences, thus their conservation status would not change as a result of the proposed clearing. (DEC, 2009a).

While some of the vegetation types present within the application area have percentages of remaining vegetation below that of the recommended 30% threshold for retaining pre-European levels of native vegetation (Commonwealth 2001), the two dominate vegetation associations within the application area (Beard 3 & Mattiske DM2) are well represented. The area will be selectively harvested to maintain the overstorey and understorey (Bradshaw, 2005) and follow CALM guidelines for sustainable forest management (CALM, 2004).

Given the implementation of the aforementioned management guidelines, the impacts of silvicultural activities will be kept to a minimum. To further decrease any negative impacts clearing activities may have on the local area, weed and dieback control and vegetation management conditions will be imposed on the permit. Habitat trees will also be retained as a condition of the permit.

CALM (2004)
 Commonwealth (2001)
 DEC (2009a)
 DEC (2009b)
 DEC (2009c)
 Dinniup 50cm Orthomosaic (9/10/07)
 Keighery (1994)
 GIS DataSets:
 - Clearing Regulations, Environmentally Sensitive Areas 30 May 2005
 - CALM Managed Lands and Waters - CALM 01/06/05
 - Mattiske Vegetation (01/03/1998)
 - SAC Biodatasets - accessed 9 Feb 09

(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.

Comments Proposal may be at variance to this Principle

The 232 hectares of vegetation under application, of which the 80 hectares of wandoo to be thinned is within, is considered to be in good to very good (Keighery 1994) condition. Within the local area (10km radius) 4 fauna species were recorded. *Macropus irma* (Western brush wallaby) was recorded 8 km north and utilizes habitats similar to that of the application area (DEC, 2007; DEC, 2009c). *Calyptorhynchus banksii naso* (Forest - red tailed black cockatoo) was also recorded 8km north of the application area, this species prefers jarrah/marri tree hollows (DEC, 2007). The majority of the vegetation within the application area consists of wandoo woodlands, however, some jarrah trees do remain within the application area. *Dasyurus geoffroii* (Chuditch) has been recorded in the local area, this species can utilise hollow ground logs as refuge sites (DEC, 2009b).

Due to the local area being extensively cleared, the proposed clearing of 80 hectares of native vegetation within an environment that has only approximately 25% remaining vegetation may reduce the potential habitat for fauna species. The proposed clearing is likely to displace fauna species in a highly cleared landscape.

To ensure that the proposed clearing has minimal impacts on any fauna, habitat trees will be retained as a condition of the permit. The recommended retention rate for habitat trees within the wandoo woodlands is 3 per hectare, (CALM, 2004; DEC, 2009b). Fauna and vegetation management conditions will therefore be imposed on the clearing permit.

Methodology CALM (2004)
 DEC (2007)
 DEC (2009b)
 DEC (2009c)
 Bradshaw (2005)
 Keighery (1994)
 GIS DataSets:
 - SAC Biodatasets - accessed 9 Feb 09
 - Mattiske Vegetation (01/03/1998)

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

Comments Proposal is not likely to be at variance to this Principle

There are no recorded rare or priority listed flora species within the application area, although no flora survey has been conducted within the application area (Bradshaw, 2005). The closest recorded rare flora species, *Rulingia sp* Trigwell Bridge, was 4.2km north of the application area and was found within a nature reserve. Within the local area (10km radius) the rare flora species *Drakaea confluens* was recorded, however this species is not found within wandoo woodlands and is unlikely to occur within the areas of jarrah forest within the application area (DEC, 2009a; DEC. 2009b).

The use of snig tracks will minimise the disturbance of understorey habitats. The method of clearing will involve the use of a chainsaw, rear-end loader and a truck to transport the logged trees directly to mill, further reducing the impacts on understorey species.

Methodology Bradshaw (2005)
 DEC (2009a)
 DEC (2009b)
 GIS DataSets:
 - Dinniup 50cm Orthomosaic (9/10/07)
 - SAC Biodatasets - accessed 9 Feb 09
 - Soils, Statewide DA 11/99

(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.

Comments Proposal is not likely to be at variance to this Principle

No known Threatened Ecological Communities (TECs) occur within the application area or the local area (10km radius).

The proposed clearing is considered unlikely to be at variance to this principle.

Methodology GIS DataSets:

- SAC Biodatasets - accessed 9 Feb 09

(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.

Comments Proposal may be at variance to this Principle

The Local Shire has 44.98 % of pre-European levels of vegetation remaining, with the bioregion having 80.85% remaining. The application area is comprised of several vegetation types. The beard vegetation associations present includes beard 3, which has 69.32 % of pre-European levels of vegetation remaining within the Warren bioregion and 58.31% within the local Shire. Beard vegetation association 4 has 24.24% of pre-European vegetation remaining within the Warren Bioregion and 29.1% remaining within the local Shire (Shepherd et al. 2007). The dominate beard vegetation association present within the application area is Beard 3 (DEC, 2009c).

The application area has been mapped as having 4 different Mattiske vegetation complexes, although the majority of the area is comprised of Mattiske DM2. Mattiske DM2 has 34% of pre-European levels of vegetation remaining. The other Mattiske vegetation complexes found within the application area Ku2, Dk3 & Dk1 have 19.7%, 11.7% & 29.1% of pre-European level of vegetation remaining respectively (Mattiske 1998). However, these complexes represent only a small portion of the applied area and the implementation of management practises will minimise the impacts on the aforementioned Mattiske complexes.

The application area is considered to be a significant remnant in a highly cleared landscape, as aerial imagery shows that approximately 25% of native vegetation remains within the local area (10km radius). The application area is also within an area covered by the EPA Position Paper No. 2, where by the clearing of native vegetation for the purpose of agriculture is not supported (EPA, 2000). It is noted that the purpose of the proposed clearing is for silviculture and will not result in broad scale clearing.

While some of the vegetation types present within the application area have percentages of remaining vegetation below that of the recommended 30% threshold for the retention of pre-European levels of native vegetation (Commonwealth 2001), the area will be selectively harvested to maintain the overstorey and understorey (Bradshaw, 2005) and follow sustainable forest management guidelines (CALM, 2004).

As mentioned the area is not to be clear-felled but selectively harvested to retain habitat trees and understorey and managed in accordance with DEC's sustainable forest management guidelines and on this basis an offset condition will not be imposed.

Management practise should also see that the area remains a viable remnant that can be utilised by flora and fauna species in the future. To minimise the impacts of the proposed clearing vegetation management conditions will be imposed on the permit.

Methodology Bradshaw (2005)

CALM (2004)

Commonwealth (2001)

DEC (2009c)

EPA (2000)

Mattiske (1998)

Shepherd et al (2007)

GIS DataSets:

- Mattiske Vegetation (01/03/1998)

- SAC Biodatasets - accessed 9 Feb 09

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

Comments Proposal may be at variance to this Principle

The Blackwood River is located 1.6km east of the application area. There is also a non-perennial watercourse and an area subject to inundation located 1km east of the application area. Two minor non-perennial watercourses exist within the application area, one in the north west corner, the other in the central eastern section. The vegetation adjacent to the watercourse (gully vegetation) is considered to be in a very good (Keighery 1994) condition (DEC, 2009c). As outlined in the management plan, all wet areas and areas adjacent

to watercourses will be kept free from disturbance (Bradshaw, 2005). The proposed clearing is to target only wandoo species. It is recommended that a 30 metre vegetated buffer be imposed on the permit to ensure watercourses within the application area and adjacent are adequately protected (DEC, 2009b).

Methodology Bradshaw (2005)
DEC (2009b)
DEC (2009c)
GIS DataSets:
- CALM Managed Lands and Waters - CALM 01/06/05
- Hydrography linear - DOW 13/7/06
- Hydrography linear (hierarchy) - DoW 13/7/06

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

Comments **Proposal is not likely to be at variance to this Principle**
The soils are described as being low hilly to hilly portions of dissected lateritic plateau with gently undulating ridge crests and narrow incised valleys: chief soils are hard acidic yellow mottled soils containing moderate to large amounts of ironstone gravel (Northcote et al 1960 - 1968). Due to the presents of gravel in the soil water logging is unlikely to occur.

Areas of salinity occur within the property boundaries, in the south west corner. This site is also subject to waterlogging. If management guidelines are followed it is considered unlikely that the proposed thinning will cause appreciable land degradation, particularly for salinity (DAFWA, 2009). Vegetation management conditions will be imposed on the permit in accordance with DEC Sustainable Forest Management documents (CALM 2004).

Methodology CALM (2004)
DAFWA (2009)
DEC (2009)
Northcote et al (1960 -1968)
GIS DataSets:
- Hydrogeology, statewide - DOW 13/07/06
- Soils, Statewide DA 11/99
- Topographic contours statewide - DOLA and ARMY

(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.

Comments **Proposal may be at variance to this Principle**
The closest conservation areas, the Trigwell and Haddleton Springs Nature Reserves are located 7.7km and 8.5km from the application area respectively. The local area (10km radius) is extensively cleared, with very little connecting vegetation between the application area and the nature reserves. The application area is a registered Land for Wildlife site (Trim Ref: DOC78011). It is considered unlikely that the selective harvesting of the vegetation within the application area will have a significant impact on the conservation values within the property or significantly reduce the habitat potential of the existing vegetation.

Methodology GIS DataSets:
- CALM Managed Lands and Waters - CALM 01/06/05
- Dinniup 50cm Orthomosaic (9/10/07)

(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.

Comments **Proposal is not likely to be at variance to this Principle**
The elevation ranges from 220 to 255 metres (AHD). Groundwater salinity is between 7000 - 14000 mg/L. The application area falls within the Hardy Estuary- Blackwood River catchment.

Two minor non-perennial watercourses exist within the application area, one in the north west corner, the other in the central eastern section. Vegetated buffers of 30 metres around watercourses will reduce sedimentation and erosion occurring within these systems.

. If management guidelines are followed it is considered unlikely that the proposed thinning will cause appreciable land degradation, particularly for salinity (DAFWA, 2009). The regeneration of stocked stands for continued growth and measures to protect retained trees from damage through harvesting and regeneration operations (CALM, 2004) will further reduce the risk of deterioration in water quality.

Methodology CALM (2004)
GIS DataSets:
- Groundwater Salinity Statewide DoW 13/07/06

- Hydrographic catchments, catchments - DoW 01/06/07
- Topographic Contours, Statewide - DOLA 12/09/02

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

Comments Proposal is not likely to be at variance to this Principle

The mean annual rainfall for the local area is 600mm. Due to the topography, the regeneration of stocked stands for continued growth and measures to protect retained trees from damage through harvesting and regeneration operations (CALM, 2004) it is considered unlikely that the proposed clearing will cause an increase in the intensity or incidence of flooding.

Methodology CALM (2004)

GIS DataSets:

- Mean Annual Rainfall Isohytes (1975 - 2003) - DEC 02/08/05
- Topographic Contours, Statewide - DOLA 12/09/02

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments

A commercial producers licence has been obtained (Trim Ref: DOC72096).

Methodology

4. Assessor's comments

Comment

The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986 and has found:

- Principles (a), (b), (e) & (f) may be at variance
- Principles (c), (d), (g), (h), (i) and (j) are not likely to be at variance

5. References

- Bradshaw (2005) Managing private native forests and woodlands in the south west of Western Australia: Combining wood production and conservation
- Commonwealth of Australia (2001) National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.
- DEC (2007) DEC Fauna Habitat Notes.xls. February 2007. Department of Environment and Conservation, Western Australia.
- DEC (2009a) Flora advice. Department of Environment and Conservation Trim Ref DOC76188
- DEC (2009b) South West Regional Advice. Department of Environment and Conservation Trim Ref DOC76041
- DEC (2009c) Site Inspection Report for Clearing Permit Application CPS 2924/1, Lot 2508 & 2509, Boyup Brook. Site inspection undertaken 09/03/2009. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC79034).
- Department of Conservation and Land Management 2004 (a) Silvicultural Practice in Wandoo Forest and Woodland, Department of Conservation and Land Management, Sustainable Forest Management Series, SFM Guidelines No. 2.
- EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
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6. Glossary

Term	Meaning
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BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)