



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 6878/1
File Number: 2011/006912-1
Duration of Permit: From 30 April 2016 to 30 April 2023

PERMIT HOLDER

Shire of Wyndham – East Kimberley

LAND ON WHICH CLEARING IS TO BE DONE

Lot 567 on Deposited Plan 404515, Kununurra

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 13.35 hectares of native vegetation within the area hatched yellow on attached Plan 6878/1.

CONDITIONS

1. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 30 April 2018.

2. 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*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

3. Flora management

- (a) Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall engage a *botanist* to conduct a *targeted flora survey* of the Permit Area for the presence of the following *priority flora*:
 - (i) *Heliotropium tachyglossoides*;
 - (ii) *Goodenia brachypoda*;
 - (iii) *Scleria annularis*; and
 - (iv) *Brachychiton tuberculatus*.
- (b) Where *priority flora* are identified under condition 3(a) of this Permit, the Permit Holder shall engage a *botanist* to map the *critical habitat* of the identified *priority flora* within the Permit Area.
- (c) Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall provide the results of the *targeted flora survey* in a report to the CEO.
- (d) If *priority flora* are identified within the Permit Area, the *targeted flora survey* report must include the following:
 - (i) the location of each *priority flora* species identified under condition 3(a) of this permit, either as the location of individual plants, or where this is not practical, the areal extent of the population and an estimate of the number of plants, 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; and

- (ii) the species name of each *priority flora* species identified under condition 3(a) of this permit; and
 - (iii) the methodology, used to survey the permit area and to establish the *critical habitat* of flora; and
 - (iv) the extent of the *critical habitat* of the identified *priority flora* shown on a map; and
 - (v) a site description of the *critical habitat* of *priority flora* found.
- (e) Where *priority flora* are identified under condition 3(a) of this Permit, the Permit Holder shall ensure that:
- (i) no clearing of *critical habitat* of the identified *priority flora* occurs, unless first approved by the CEO; and
 - (ii) no clearing of the identified *priority flora* occurs, unless first approved by the CEO.

4. Retain vegetative material and topsoil, revegetation and rehabilitation

The Permit Holder shall:

- (a) retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.
- (b) Within three months following completion of extraction activities *revegetate* and *rehabilitate* the area cross-hatched yellow on attached Plan 6878/1 by:
 - (i) re-shaping the surface of the land so that it is consistent with the surrounding five metres of uncleared land; and
 - (ii) ripping the ground on the contour to remove soil compaction; and
 - (iii) laying the vegetative material and topsoil retained under condition 4(a) area cross-hatched yellow on attached Plan 6878/1.
- (c) within 18 months of laying the vegetative material and topsoil on the cleared area in accordance with condition 4(b) of this Permit:
 - (i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and
 - (ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 4(c)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.
- (d) Where additional planting or direct seeding of native vegetation is undertaken in accordance with condition 4(c)(ii) of this permit, the Permit Holder shall repeat condition 4(c)(i) and 4(c)(ii) within 24 months of undertaking the additional planting or direct seeding of native vegetation.
- (e) Where a determination by an environmental specialist that the composition, structure and density within areas revegetated and rehabilitated will result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, as determined in condition 4(c)(i) and (ii) of this permit, that determination shall be submitted for the CEO's consideration. If the CEO does not agree with the determination made under condition 4(c)(ii), the CEO may require the Permit Holder to undertake additional planting and direct seeding in accordance with the requirements under condition 4(c)(ii).

5. Records to be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the 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 or decimal degrees;
 - (iii) the date that the area was cleared; and
 - (iv) the size of the area cleared (in hectares).

- (c) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 4 of this Permit:
 - (i) the location of any areas *revegetated* and *rehabilitated*, 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;
 - (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
 - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares);
 - (iv) the species composition, structure and density of *revegetation* and *rehabilitation*, and
 - (v) a copy of the environmental specialist's report.

6. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
 - (i) of records required under condition 5 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.
- (c) Prior to 30 January 2023, the Permit Holder must provide to the CEO a written report of records required under condition 5 of this Permit where these records have not already been provided under condition 6(a) of this Permit.

DEFINITIONS

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

botanist: means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of 2 years work experience in identification and surveys of flora native to the bioregion being inspected or surveyed, or who is approved by the CEO as a suitable botanist for the bioregion;

critical habitat: means any part of the Permit Area comprising of the habitat of flora or fauna species and its population, that is critical for the health and long term survival of the flora or fauna species and its population;

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

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

environmental specialist: means a person who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit, or who is approved by the CEO as a suitable environmental specialist.

local provenance means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared.

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

optimal time means the period from October to December for undertaking *direct seeding*

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

priority flora means those plant taxa described as priority flora classes 1, 2, 3, 4 or 5 in the *Department of Parks and Wildlife's Threatened and Priority Flora List for Western Australia* (as amended);

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

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

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.

targeted flora survey: means a field-based investigation, including a review of established literature, of the biodiversity of flora and vegetation of the Permit Area, focusing on habitat suitable for flora species

that are being targeted and carried out during the optimal time to identify those species. Where target flora are identified in the Permit Area, the survey should also include sufficient surrounding areas to place the Permit Area into local context;

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 Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



Reuben Gregor
A/SENIOR MANAGER
CLEARING REGULATION

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

31 March 2016

Plan 6878/1

1766500

1767000

1767500

8217000

8217000

8216500

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8215500

1766500

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WYNDHAM EAST KIMBERLEY SHIRE OF

OLD DARWIN RD

TORIA HWY

OLD DARWIN RD

Legend

 Areas approved to clear

 Roads

 LGA

 Cadastre

Virtual Mosaic (LGATE-V001)





1:7,498

MGA 94

Geocentric Datum of Australia 1994

Reuben Gregor Date *31/3/16*

Reuben Gregor

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



GOVERNMENT OF
WESTERN AUSTRALIA



1. Application details

1.1. Permit application details

Permit application No.: 6878/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Shire of Wyndham East Kimberley

1.3. Property details

Property: LOT 567 ON PLAN 404515, KUNUNURRA
Colloquial name:
Local Government Authority: WYNDHAM-EAST KIMBERLEY, SHIRE OF
DER Region: North West

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
13.35		Mechanical Removal	Extractive industry

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 31 March 2016

Reasons for Decision: 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 it has been concluded that the proposed clearing may be at variance to principles (a) and (g) and is not likely to be at variance to any of the remaining clearing principles.

The vegetation under application has the potential to contain suitable habitat for priority flora taxa. To mitigate the potential impact to priority flora species a condition has been placed on the permit requiring a targeted flora survey for four potential priority flora species prior to any clearing and subsequent CEO approval is required to clear within critical habitat of any identified priority flora species.

The clearing proposed may be prone to appreciable land degradation in the form of wind erosion. A condition has been placed on the permit requiring the applicant to revegetate the cleared area once extraction activities have finalised to mitigate impacts of appreciable land degradation.

Through assessment it has been determined that the clearing is unlikely to have any other significant environmental impacts. State policies and other relevant policies have been taken into consideration in the decision to grant a clearing permit.

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
Beard vegetation association 909 is described as grasslands, high grass savanna woodland; bloodwood, stringybark & woollybutt over upland tall grass & curly spinifex on sandplain (Shepherd et al. 2001).	The application is to clear 13.35 hectares of native vegetation within Lot 567 on Deposited Plan 404515, Kununurra, for the purpose of extracting subsoil for use as landfill cover material and rehabilitation.	Very Good; Vegetation structure altered; obvious signs of disturbance (Keighery 1994).	The description and condition of the vegetation was determined via aerial imagery.
Beard vegetation association 59 is described as grasslands, high grass savanna sparse tree; bauhinia & coolabah over mitchell, blue & tall upland grasses (Shepherd et al. 2001).		To Degraded; Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994).	

3. Assessment of application against clearing principles

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

Comments

Proposed clearing may be at variance to this Principle

The application is to clear 13.35 hectares of native vegetation within Lot 567 on Deposited Plan 404515, Kununurra, for the purpose of extracting subsoil for use as landfill cover material. The topsoil from the area under application will be retained and be used to revegetate the application area once subsoil has been extracted.

Four fauna species listed as rare or likely to become extinct under the Wildlife Conservation Act 1950 have been recorded within a 10 kilometre radius of the application area (Parks and Wildlife 2007-). The fauna habitats within the area proposed to be cleared are well represented elsewhere within the local and regional area, and no significant loss of habitat for fauna indigenous to Western Australia is expected.

Eighteen priority flora species have been recorded within the local area (10 kilometre radius), of these seven are listed as Priority 3 or Priority 4 flora species. Priority 3 species are known from several locations, and do not appear to be under imminent threat, and Priority 4 species are considered to have been adequately surveyed, and are considered not currently threatened or in need of special protection, but could be if present circumstances change. Given this and that the local area is highly vegetated, the clearing as proposed is not likely to have a significant impact on the conservation status of any of the Priority 3 or Priority 4 flora species recorded within the local area (10 kilometre radius).

One of the abovementioned Priority 3 flora species, *Brachychiton tuberculatus*, species has been recorded within the eastern adjacent property (Botanical North 2013), suitable habitat for this species is likely to be located within the area under application.

Nine Priority 1 flora species have been recorded within the local area (10 kilometre radius), of these five are found within swamps, creek beds, seasonally wet or inundated areas, wetlands or swamps (Western Australian Herbarium 1998-). No wetlands or watercourses have been recorded within the area under application and therefore the clearing as proposed is not likely to impact upon these species.

The sixth Priority 1 flora species has been found on sandstone, steep rocky slopes, crevices, cliffs and ridges (Western Australian Herbarium 1998-). Suitable habitat for this species is not likely to be located within the area under application.

The seventh Priority 1 flora species, *Goodenia brachypoda*, has been recorded on red sand loam (Western Australian Herbarium 1998 -). This species occurs on silt and sandy clay in woodland of *Corymbia*, *Eucalyptus* and *Adansonia gregorii* (Boab). It has also been recorded on sandstone amongst *Triodia* and on cracking clay in open scrub of *Melaleuca viridiflora* over very open grassland of *Eragrostis tenellula* (DEC 2012). A flora survey has been undertaken within the eastern adjacent property. This survey identified seven individuals along the southern boundary of this property approximately one kilometre south west from the application area (Botanical North 2013). Given the close proximity of the application area to known records of this species and that the application area contains similar habitat to that which this species was recorded, this species may occur within the area under application.

The eighth Priority 1 flora species, *Heliotropium tachyglossoides*, has been recorded on cockatoo sand (sandy and loamy soils), there is limited information on the habitat preference of this species and therefore the likelihood of this species occurring within the application cannot be determined (DEC 2012). If this species occurs within the area under application the clearing proposed may have a significant impact on the conservation status of this species.

The ninth Priority 1 flora species, *Scleria annularis*, has been recorded approximately 8.8 kilometres from the area under application and has been recorded on sandy soils in grassland with scattered *Eucalyptus confertiflora* and *Eucalyptus pruinosa* (Western Australian Herbarium 1998-). Suitable habitat for this species may be located within the area under application.

Two Priority 2 flora species have been recorded within the local area (10 kilometre radius). The first species has been identified on skeletal soils over sandstone or quartzite on steep rocky outcrops (Western Australian Herbarium 1998-). The second species has been found on sand, sandstone within valleys and hills, in crevices in rock faces, on sides of gorges and on cliff sides. Suitable habitat for these species is not likely to be located within the area under application.

One rare flora species has been recorded within the local area (10 kilometre radius). Suitable habitat for this species is not likely to be located within the area under application.

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

The area under application may contain priority flora species and therefore may be considered to comprise a high biological diversity.

The clearing as proposed may be at variance to this principle.

A requirement for the applicant to survey the area prior to clearing and avoid priority flora where present will help mitigate impacts to high biodiversity values.

Methodology References:
DEC (2012)
Botanical North (2013)
Parks and Wildlife (2007-)
Western Australian Herbarium (1998-)

GIS databases:
SAC Bio datasets - accessed February 2016

(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 **Proposed clearing is not likely to be at variance to this Principle**
Four species listed as rare or likely to become extinct under the Wildlife Conservation Act 1950 have been recorded within the local area (10 kilometre radius) being: curlew sandpiper (*Calidris ferruginea*), northern quoll (*Dasyurus hallucatus*), grey falcon (*Falco hypoleucos*) and orange leaf nosed-bat (*Rhynonictis aurantia*) (Parks and Wildlife 2007-).

The northern quoll occupies a diversity of habitats across its range which includes rocky areas, eucalypt forest and woodlands, rainforests, sandy lowlands and beaches, shrubland, grasslands and desert (Department of the Environment 2016a). Suitable habitat may be located within the area under application, however given this species diverse range of habitats and that the vegetation under application is well represented within the local area (10 kilometre radius) the clearing as proposed is not likely to have an impact on significant habitat for this species.

The Pilbara leaf-nosed bat is restricted to caves and mine adits (horizontal shafts) with stable, warm and humid microclimates because of its poor ability to thermoregulate and retain water. The roost is usually over pools of water in deeper mines, or deep within the mine or cave structure in an area that maintains elevated temperature and humidity (Department of the Environment 2016b). Suitable habitat for this species is not likely to be present within the application area.

The curlew sandpiper is a waterbird, given that no watercourses or wetlands are located within the area under application the vegetation under application is not likely to contain significant habitat for this species.

The grey falcon has a widespread distribution, the clearing proposed is unlikely to have an impact on significant habitat for this species.

The fauna habitats within the area proposed to be cleared are well represented elsewhere within the local and regional area, and no significant loss of habitat for fauna indigenous to Western Australia is expected.

Given the above the clearing as proposes is not likely to be at variance to this principle.

Methodology References:
Department of the Environment (2016a)
Department of the Environment (2016b)
Parks and Wildlife (2007-)

GIS databases:
SAC Bio datasets - accessed February 2016

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

Comments **Proposed clearing is not likely to be at variance to this Principle**
One rare flora species has been recorded within the local area (10 kilometre radius), approximately 9.5 kilometres north west of the application area.

This species is described as an erect perennial, herb found on dark grey clay and black soil and on sites which are waterlogged in summer and inundated after rain (Brown et al. 1998-). Suitable habitat is not located within the application area for this species.

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

Methodology Reference:
Brown et al. (1998-)

GIS databases:
SAC Bio datasets - accessed February 2016

(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 **Proposed clearing is not likely to be at variance to this Principle**
 No threatened ecological communities (TEC) have been recorded within the local area (10 kilometre radius).

 The nearest TEC is 'Black Spring organic mound spring community' which is located approximately 250 kilometres west of the application area.

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

Methodology GIS databases:
 SAC Bio datasets - accessed February 2016

(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 **Proposed clearing is not likely to be at variance to this Principle**
 The area under application is located within the Victoria Bonaparte Interim Biogeographic Regionalisation of Australia (IBRA) bioregion. This IBRA bioregion has approximately 99 per cent of its pre-European vegetation extent remaining (Government of Western Australia 2014).

 The vegetation under application is mapped as Beard vegetation associations 59 and 909, which have approximately 87 and 99 per cent of their pre-European extent remaining in the Victoria Bonaparte bioregion respectively (Government of Western Australia 2014).

 Digital imagery indicates that the local area (10 kilometre radius) surrounding the area under application retains approximately 90 per cent vegetation cover.

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

 Given the vegetation representation within the local area it is unlikely that the vegetation under application is significant as a remnant in an extensively cleared landscape.

 Therefore, the clearing as proposed is not likely to be at variance to this principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Victoria Bonaparte	1,870,996	1,847,137	99	16
Shire*				
Shire Of Wyndham-East Kimberley	11,189,826	11,016,723	98	13
Beard Vegetation Association in Bioregion*				
59	138,637	120,696	87	12
909	281,415	278,753	99	17

Methodology References:
 Commonwealth of Australia (2001)
 *Government of Western Australia (2014)

 GIS Databases:
 Pre European Vegetation

(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 **Proposed clearing is not likely to be at variance to this Principle**
 No watercourses or wetlands have been recorded within the area under application. An area subject to inundation is located approximately 40 metres east of the area under application. This area is a known Lake Kununurra inundation area (DoW 2016).

Lake Kununurra is located approximately 1.4 kilometres east of the area under application and is mapped as an ANCA wetland and is listed as the Ramsar wetland 'Lake Argyle and Lake Kununurra'.

Given the distance between the area under application and this wetland the clearing as proposed is not likely to impact upon vegetation growing in association with a wetland.

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

Methodology References:
DoW (2016)

GIS Databases:
ANCA wetlands
Hydrography, linear
Ramsar, wetlands

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

Comments **Proposed clearing may be at variance to this Principle**
Mapped soil type B31 is described as 'Gently undulating sandy plains with very small areas of low bouldery sandstone hills: chief soils are deep red and yellow siliceous sands' (Northcote et al 1960 - 1968).

Given the sandy nature of the soil, the application area may be prone to wind erosion. However, the applicant has advised that the area under application will be revegetated post extraction which will reduce impacts of wind erosion in the long term.

The Kimberley region can experience significant rain events which may result in water erosion. However, no watercourses or wetlands are located within the area under application and therefore the clearing proposed is not likely cause appreciable land degradation in the form of water erosion.

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

A requirement for the applicant to revegetate the application post extraction will help mitigate risks of appreciable land degradation.

Methodology References:
Northcote et al (1960 - 1968)

GIS Database:
Soils, statewide

(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 **Proposed clearing is not likely to be at variance to this Principle**
Two conservation areas are located within the local area (10 kilometre radius). Mirima National Park and Darram Conservation Park are located approximately 1.6 kilometres north and 1.8 kilometres west of the application area respectively.

Lake Kununurra is located approximately 1.4 kilometres east of the area under application and is mapped as an ANCA wetland and is listed as Ramsar wetland 'Lake Argyle and Lake Kununurra'.

A large proportion of the vegetation in the Victoria Bonaparte bioregion remains uncleared, approximately 99 per cent (Government of Western Australia 2014). Therefore, it is unlikely that the application area provides an important buffer or ecological linkage to the conservation areas located within the local area (10 kilometre radius).

Therefore, the clearing as proposed is not likely to be at variance to this principle.

Methodology Reference:
Government of Western Australia (2014)

GIS Databases:
ANCA wetlands
Parks and Wildlife Tenure
Pre-European vegetation
Ramsar, wetlands

(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

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

No watercourses or wetlands have been recorded within the area under application. An area subject to inundation is located approximately 40 metres east of the area under application. This area is a known Lake Kununurra inundation area (DoW 2016).

Lake Kununurra is located approximately 1.4 kilometres east of the area under application and is mapped as an ANCA wetland and is listed as the Ramsar wetland 'Lake Argyle and Lake Kununurra'.

The topography of the area under application is flat and a 40 metre vegetated buffer will remain between the application area and the nearby Lake Kununurra inundation area, therefore the clearing as proposed is unlikely to increase runoff or sedimentation into this area.

The Department of Water (DoW 2016) has advised that the proposed clearing is located approximately 30 – 50 metres on the southern and south eastern boundary of the Lake Kununurra inundation area. DoW (2016) considers it best practice to allow a minimum 30 metre buffer between clearance activities from any waterway to minimise erosion and sedimentation into the watercourse.

Given the above, impacts to surface water quality are likely to be short term and minimal.

Groundwater Salinity is mapped between 500-1000 milligrams per litre total dissolved solids which is considered to be marginal. Given the low salinity levels and that the local area is highly vegetated (approximately 90 per cent) the clearing as proposed is not likely to cause deterioration in the quality of surface or underground water.

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

Methodology

References:
DoW (2016)

GIS Databases:
ANCA wetlands
Hydrography, linear
Groundwater Salinity
Ramsar, wetlands

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

Comments

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

Natural flood events may occur in the Kimberley region following cyclonic activity. However, the proposed clearing is not expected to increase the incidence or intensity of flooding.

Based on the above, the proposed clearing is not likely to be at variance to this principle.

Methodology

Planning instruments and other relevant matters.

Comments

DoW (2016) has advised that the application area is located within the Canning-Kimberley Groundwater Area which is proclaimed under the Rights in Water and Irrigation Act 1914 which means any water use and well construction would require a licence. The Shire of Wyndham – East Kimberley has a current groundwater licence (GWL 180042) for 2000 KL per annum. If the applicant intends to use groundwater from this existing licence for any clearing activities the Kununurra licencing team should be contacted to discuss any amendments to licence condition to accommodate this activity use.

DoW (2016) has advised that groundwater levels in the area are approximately nine metres below ground level. Depth of extracted subsoil should not intercept groundwater. DoW considers it best practice to allow a buffer of at least two metres between the groundwater level and the surface clearance area to decrease the risk of any contamination or sedimentation to the groundwater.

The application area is located within the Ord Irrigation District and the Ord River and Tributaries and is proclaimed under the Rights in Water and Irrigation Act 1914. If any surface water is required for clearing activities a 5C licence to take water would be required.

One Aboriginal Site of Significance 'Gunanurreng – Ord River' has been mapped over the application area. The applicant will be notified of their obligations under the Aboriginal Heritage Act 1972.

No submissions have been received in relation to this application.

Methodology

References:
DoW (2016)

4. References

- Botanical North (2013) Priority Flora search on Lot 2465 (Park of Reserve R28875) Kununurra, WA. Western Australia. DER Ref: A639188
- Brown A., Thomson-Dans C. and Marchant N.(1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- DEC (2012) Flora advice for Clearing Permit Application CPS 5431/1. Department of Environment Conservation. Species and Communities Branch. Western Australia. DER Ref:A606715
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