



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 3605/1
Permit Holder:	Shire of Exmouth
Duration of Permit:	22 May 2010 – 22 May 2015

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 flood mitigation works.

2. Land on which clearing is to be done

LOT 959 ON DEPOSITED PLAN 215756 (PATTERSON WAY, EXMOUTH 6707)
UNALLOCATED CROWN LAND (EXMOUTH 6707)
LOT 1135 ON DEPOSITED PLAN 217620 (REID STREET, EXMOUTH 6707)
LOT 1469 ON DEPOSITED PLAN 41058 (WELCH STREET, EXMOUTH 6707)
ROAD RESERVE (REID STREET, EXMOUTH 6707)

3. Area of Clearing

The Permit Holder must not clear more than 14.55 hectares of native vegetation within the area hatched yellow on attached Plan 3605/1.

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. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for activities to the extent that the Permit Holder has the power to clear native vegetation for those activities under the *Local Government Act 1995* or any other written law.

6. 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

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. Weed control

(a) 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*:

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

(b) At least once in each 12 month period for the *term* of this Permit, the Permit Holder must remove or kill any *weeds* growing within areas cleared under this Permit.

9. Wind erosion management

The Permit Holder shall not clear native vegetation under conditions 1, 2 and 3 on this Permit unless flood mitigation work begins within 1 week of the clearing being undertaken.

PART III - RECORD KEEPING AND REPORTING

10. 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 species composition, structure and density of the cleared area;
- (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
- (c) the date that the area was cleared; and
- (d) the size of the area cleared (in hectares).

11. 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 10 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 22 February 2015, the Permit Holder must provide to the CEO a written report of records required under condition 10 of this Permit where these records have not already been provided under condition 11(a) of this Permit.

Definitions

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

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;

term means the duration of this Permit, including as amended or renewed;

weed/s 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 *Agriculture and Related Resources Protection Act 1976*.

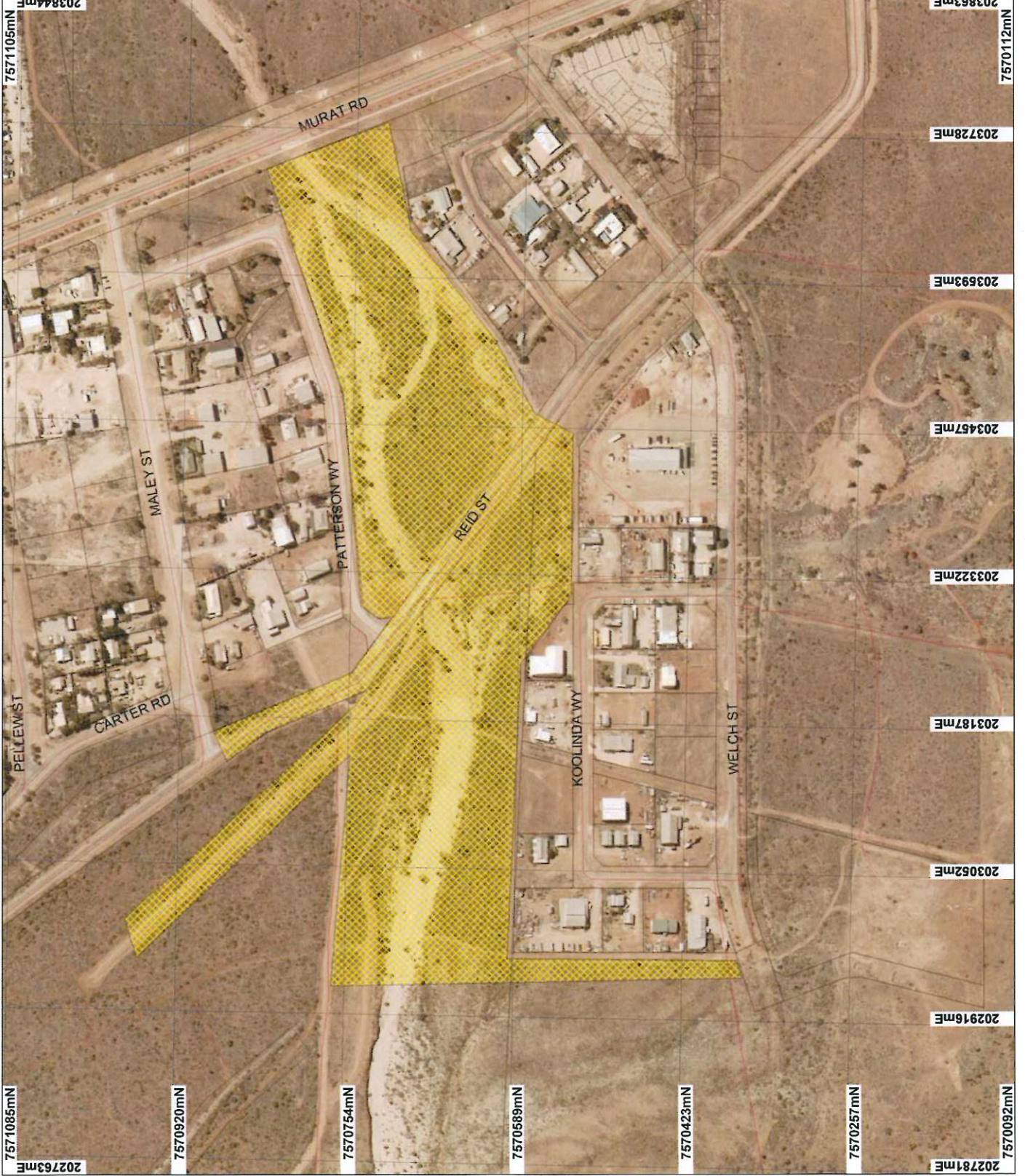


Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

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

22 April 2010

Plan 3605/1



LEGEND

- Clearing Instrument
- Areas Approved to Clear
- Road Centrelines
- Cadastral_1
- Exmouth Townsite Landgate 2003



Scale 1:5000
 (Approximate when reproduced at A4)

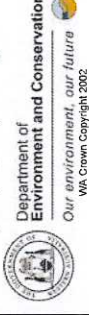
Geocentric Datum Australia 1994

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

K Faulkner
 Date: 22/4/10

K Faulkner
 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.





1. Application details

1.1. Permit application details

Permit application No.: 3605/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Shire of Exmouth

1.3. Property details

Property: LOT 959 ON DEPOSITED PLAN 215756 (PATTERSON WAY, EXMOUTH 6707)
UNALLOCATED CROWN LAND (EXMOUTH 6707)
LOT 1135 ON DEPOSITED PLAN 217620 (REID STREET, EXMOUTH 6707)
LOT 1469 ON DEPOSITED PLAN 41058 (WELCH STREET, EXMOUTH 6707)
ROAD RESERVE (REID STREET, EXMOUTH 6707)
Local Government Area: SHIRE OF EXMOUTH

1.4. Application

Clearing Area (ha)	Method of Clearing	For the purpose of:
14.55	Mechanical Removal	Flood mitigation works

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: 663 - Hummock grasslands, shrub steppe; waterwood (Acacia coriacea) over soft spinifex.	The vegetation under application comprises approximately 14.55ha of native vegetation adjacent to a minor, non-perennial watercourse which flows through the Exmouth town site. There is some disturbance within the site including weed encroachment (patches of Buffel grass (Cenchrus ciliaris)) and some already cleared areas including existing tracks (DEC, 2010a). The existing vegetation however, is overall in a 'good' to 'very good' (Keighery, 1994) condition (DEC, 2010a).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994) Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The vegetation condition was confirmed through aerial photography (Exmouth Townsite 20cm Orthomosaic - Landgate 2006) and during a DEC site visit undertaken on the 16 April 2010 (DEC, 2010a).

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 vegetation under application lies within the Cape Range Province which has significant environmental attributes including a high biological diversity compared with other comparable arid and semi-arid karst areas of Western Australia, a rich variety of landforms and landscapes and a high degree of endemic fauna (particularly subterranean) and flora species richness (EPA, 1999).

The vegetation under application is mapped as Beard Vegetation Association 663, described as hummock grasslands, shrub steppe; waterwood (Acacia coriacea) over soft spinifex (Hopkins et al, 2001). There is some disturbance within the site including weed encroachment (patches of Buffel grass (Cenchrus ciliaris)) and some already cleared areas including existing tracks. The existing vegetation however, is overall in 'good' to 'very good' (Keighery, 1994) condition (DEC, 2010a).

Fifteen priority flora species have been recorded within the local area (20km radius) of the applied clearing area, with the closest records being *Corchorus congener* (P3) and *Eremophila youngii* subsp. *lepidota* (P4), approximately 615m north. Based on previous records and mapped soil and vegetation types (WA Herbarium, 1998-2010) these species have the potential to occur within the applied clearing area (DEC, 2010b).

Two priority two species, *Acanthocarpus rupestris*, known to inhabit red sand and limestone, and *Tinospora esiangkara*, which inhabits pebbly orange-brown calcareous loam, limestone outcrops or ridges and near creek banks (WA Herbarium 1998-2010), also have the potential to occur within the applied clearing area based on being recorded within similar habitat types to the area under application (DEC, 2010b & WA Herbarium 1998-2010).

Although these four priority species have the potential to occur within the applied clearing area and are highly restricted, all these species are represented within conservation estate and therefore it is unlikely that the proposed clearing will significantly impact upon the conservation status of these species (DEC, 2010b).

The applied clearing area, particularly the karst features and limestone on which the vegetation exists, may provide habitat for subterranean fauna including threatened and priority species such as Blind Gudgeon (*Milyeringa veritas*, listed as Vulnerable under the EPBC Act 1999), Blind Cave Eel (*Ophisternon candidum*, listed as Vulnerable under the EPBC Act 1999), Lance beaked Cave Shrimp (*Stygiocaris lancifera*, Vulnerable) and Spear-beaked Cave Shrimp (*Stygiocaris stylifera*, Priority 4). The roots of the vegetation proposed to be cleared may provide a food source and organic matter for subterranean fauna, such as shrimps and aquatic larvae, which in turn are a food source for the vertebrate species such as the Blind Gudgeon and Blind Cave Eel (DEWHA, 2009).

DEC advised the applicant in 2009 that "weed hygiene and control measures should be followed to ensure that weeds are not introduced to the site" and that the applicant is to "ensure that basecourse gravel materials are not sourced from areas known to contain weeds" (DEC, 2009). Given the sensitivity of the site, it is therefore a condition of the permit that weed hygiene measures and management are implemented.

Methodology

References:

- DEC (2009)
- DEC (2010a)
- DEC (2010b)
- DEWHA (2009)
- EPA (1999)
- Hopkins et al (2001)
- Keighery (1994)
- WA Herbarium (1998-2010)

GIS Databases:

- SAC Biodatasets - Accessed 25 March 2010

(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**

Thirteen threatened and priority fauna species have been recorded on the mainland within the local area (20km radius) of the applied clearing area, with the closest records being Blind Gudgeon (*Milyeringa veritas*, Vulnerable), Blind Cave Eel (*Ophisternon candidum*, Vulnerable), Lance beaked Cave Shrimp (*Stygiocaris lancifera*, Vulnerable) and Spear-beaked Cave Shrimp (*Stygiocaris stylifera*, Priority 4) all recorded within karst systems approximately 1.5km north of the applied clearing area within the Cape Range National Park.

In view of the proposal being on limestone, consideration may need to be given to subterranean fauna such as stygofauna and troglofauna species. Stygofauna are aquatic subterranean animals that inhabit groundwater systems associated with karst (limestone caves/fissures) and troglofauna are fauna that inhabit air chambers in caves and/or rock fissures above such systems (Humphreys, 2006 & Humphreys, 2008). According to Humphreys (2006) the identified fauna "are constrained to small geographic areas." Although the clearing of native vegetation may not directly impact subterranean fauna, the removal of trees may have a detrimental impact on stygofauna and troglofauna if the tree roots and associated organic matter had been utilised as a food source. In addition, the activities associated with the flood mitigation works could impact these species if they are present in this location.

It is noted that development associated with the Exmouth townsite has already had some impact on the local area, surrounding the area under application. However, there is the potential for the applied clearing area to provide habitat for threatened and/or priority fauna.

The local area (20km radius) of the applied clearing area is highly vegetated and although the vegetation under application provides a vegetated corridor along the watercourse between the Cape Range and the coast, which is likely to be used by indigenous fauna, other areas of vegetation north and south of the Exmouth town site provide access and habitat for indigenous species.

Methodology References:
- Humphreys (2006)
- Humphreys (2008)
GIS Databases:
- Exmouth Townsite 20cm Orthomosaic - Landgate 2003
- SAC Biodatasets - Accessed 25 March 2010

(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**
One declared rare flora species has been recorded within the local area (20km radius). *Grevillea bracteosa* is known from one 1978 record, approximately 15.7km N of the applied clearing area.

This species was mapped on the similar soil type to the applied clearing area however, this species was found in habitat consisting of very low shrubs, predominantly *Banksia* and other Proteaceae species on red sand hills (WA Herbarium, 1998-2010), different to the mapped vegetation type attributed to the applied clearing area.

It is therefore unlikely that the proposed clearing area includes, or is necessary for the continued existence of, rare flora species known to occur within the local area.

Methodology References:
- WA Herbarium (1998-2010)
GIS Databases:
- SAC Biodatasets - Accessed 25 March 2010
- Soils, Statewide - DA

(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**
One threatened ecological community (TEC) has been recorded within the local area (20km radius) of the applied clearing area, Camerons Cave Troglitic Community, approximately 2.0km south.

This TEC is known only from one location on the Cape Range Peninsula and is recognisable by its unique composition of species, of which at least eight species are known only from this location (Black et al., 2001). The community is reliant on the humid conditions in Camerons Cave created through the contact with the water table and specific surface conditions (Black et al., 2001).

Any changes in the drainage patterns in the catchment, including the water in the cave, the groundwater feeding into the cave and the associated catchment and the interstices in the limestone adjacent to the cave, can have potential impacts on this threatened community (Black et al, 2001).

Due to the distance of the applied clearing area to Camerons Cave, the clearing of the native vegetation is unlikely to significantly alter the hydrology of the area so as to impact upon this TEC (DEC, 2010c).

The flood mitigation works however, may impact upon the TEC and associated buffer which is further outlined in Planning and Other Matters below.

Methodology References:
- Black et al. (2001)
- DEC (2010c)
GIS Databases:
- SAC Biodatasets - Accessed 25 March 2010

(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 is not likely to be at variance to this Principle**
The vegetation has been mapped as the Beard Vegetation Association 663 - hummock grasslands, shrub steppe; waterwood (*Acacia coriacea*) over soft spinifex (Hopkins et al, 1991) of which there is 95.1% of the pre-European extent remaining within the Carnarvon IBRA region (Shepherd, 2007).

The applied clearing area lies within the Shire of Exmouth in the Carnarvon IBRA region of which 98.9% and 99.8% of their pre-European vegetation extents remain respectively (Shepherd, 2007).

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).

Given the applied clearing area comprises vegetation associations within areas above the 30% threshold and that the Cape Range region still retains a significant amount of vegetation, much of which is conserved in conservation estate including the Cape Range National Park, it is concluded that the applied clearing is not likely to be at variance to this principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion* Carnarvon (CAR)	8,382,606	8,368,970	99.8%	11.98%
Local Government* Shire of Exmouth	649,316	642,216	98.9%	51.72%
Beard vegetation type* 663	30,474	28,123	92.3%	29.81%
663 (within CAR IBRA)	29,061	27,632	95.1%	30.02%

*(Shepherd, 2007)

- Methodology** References:
- Commonwealth of Australia (2001)
 - Hopkins et al (1991)
 - Shepherd (2007)
- GIS Databases:
- Exmouth Townsite 20cm Orthomosaic - Landgate 2003
 - IBRA Australia - DEH
 - Local Government Authorities - DOLA
 - SAC Biodatasets - Accessed 25 March 2010

(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 is at variance to this Principle

There are four swamps, one mangrove and two lakes mapped within the local area (20km radius) of the applied clearing area with the closest mapped wetlands being the Cape Range subterranean waterways, recognized as nationally important wetlands, approximately 7.0km south and 10.2km north.

The Cape Range National Park near Exmouth contains the Cape Range Subterranean Waterways, significant for its stygofauna. The system is under pressure from nutrient enrichment, water abstraction, townsite development and exploration drilling (ANCA, 1996).

The Cape Range karstic ecosystem in Exmouth is a groundwater dependent ecosystem however little is known about this system (Davis et al, 2001). Its biggest threat is likely to be as a result of increased groundwater extraction for the town water supply impacting upon flows to these wetlands (Davis et al, 2001). At this site the groundwater flows from the Cape Range towards the Exmouth Gulf (DoW, 2010a) and given the distance from the applied clearing area, it is considered unlikely that the clearing of native vegetation from this site will impact significantly on these mapped wetlands.

The closest watercourse is a minor tributary (watercourse bank, non-perennial) which runs through the applied clearing area.

The vegetation under application consists of 14.55ha along a watercourse and within the associated floodplain and therefore comprises riparian vegetation. Given that the proposal will result in the removal of riparian vegetation, the proposal is considered to be at variance to this principle.

- Methodology** References:
- ANCA (1996)
 - Davis et al (2001)
 - DoW (2010a)
- GIS Databases:
- ANCA, wetlands
 - Geodata, Lakes

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

Comments Proposal may be at variance to this Principle

The vegetation under application occurs on the coastal plain consisting of some saline flats and a few sand dunes with chief soils being shallow loams and sands overlying limestone with some red sands in dunes and a coastal fringe of recent shelly sand (Northcote et al 1960-68).

The groundwater salinity across this site ranges between 500-1000mg/L total dissolved solids.

The clearing of native vegetation along a watercourse may result in increased erosion along the watercourse. Sands at this site may also be prone to wind erosion post clearing and therefore mechanisms will need to be put in place to control dust and subsequently wind erosion in association with the clearing process and civil works.

It is therefore a condition of the permit that clearing not be undertaken more than one week prior to the commencement of works to reduce the risk of wind erosion.

Methodology References:

- Northcote et al (1960-68)
- GIS Databases:
- Groundwater Salinity, Statewide - DoW
 - Soils, Statewide - DA
 - Topographic Contours, 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 Proposal is not likely to be at variance to this Principle

The closest conservation area within the local area is the Cape Range and adjacent Coastal Plain which lies approximately 750m to the west, 1.4km north and 2km south and is registered in the Register of National Estate for its geological and palaeontological features, biological attributes and cultural values and subterranean cave fauna (DEWHA, 2002). This area includes the Cape Range National Park, also a System 9 Reserve.

The Ningaloo Marine Park lies approximately 6.8km north and two DEC managed "recreational and coastal management" reserves - Bundegi Coastal Park and Jurabi Coastal Park are approximately 6.5km N and 13.7km N respectively.

The applied clearing area consists of riparian vegetation along a watercourse which discharges out towards the coast. The vegetation under application provides connectivity along the watercourse from the Cape Range towards the coast however, the local area is highly vegetated with access between the coast and the range either side of the Exmouth town site. It is therefore unlikely that the proposed clearing will impact upon conservation areas within the local area.

Methodology References:

- DEWHA (2002)
- GIS Databases:
- DEC Tenure - DEC
 - Exmouth Townsite 20cm Orthomosaic - Landgate 2003
 - Register of National Estate
 - SAC Biodatsets - Accessed 25 March 2010
 - Systems 1-5 and 7-10 Conservation Reserves - DEC 2006

(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 applied clearing area lies within the Coastal Catchment in the Lyndon-Minilya Rivers Basin.

The closest watercourse to the applied clearing area is a minor tributary (watercourse bank - non-perennial) which runs through the applied clearing area and the subject of the flood mitigation works.

The closest mapped wetland is the Cape Range Subterranean Waterways, approximately 7.0km south and 10.2km north of the applied clearing area.

Groundwater salinity at the site ranges between 500 - 1000 mg/L total dissolved solids.

Depending upon the timing of the clearing, the removal of riparian vegetation may result in the mobilization of silts and sediments into the watercourse however, this should only be a short term, localised impact and limited to during the clearing process itself. However, as the watercourse is non-perennial, if clearing and works are undertaken during the dry season these impacts would be significantly reduced.

The Department of Water has advised that "the groundwater flow in the vicinity of the Exmouth well field is in an easterly direction from the Cape Range toward the Exmouth Gulf" (Water and Rivers Commission, 2000) and as such the "proposed works would have minimal impacts on water quality" (DoW, 2010a).

The proposal is therefore considered not likely to be at variance to this principle.

- Methodology** **References:**
- DoW (2010a)
 - Water and Rivers Commission (2000)
- GIS Databases:**
- Groundwater Salinity, Statewide - DoW
 - Hydrography, linear - DoW
 - Hydrography, linear (hierarchy) - DoW
 - Hydrographic Catchments, Catchments - DoW

(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 closest watercourse to the applied clearing area is a minor tributary and non-perennial watercourse which runs through the applied clearing area and the subject of the proposed flood mitigation works.

The topography across the site ranges between approximately 10-20m AHD and is of a medium relief.

The clearing of 14.55ha along a minor tributary (watercourse bank, non-perennial) is likely to result in increased surface water levels, however, the area under application is part of a floodplain and floods during significant rainfall events. The increased surface water levels as a result of the clearing may result in increased surface water flows to the discharge areas east of Murat Road.

Despite the potential for the clearing to result in increased surface water levels, the proposed flood mitigation civil works will result in preventative measures to reduce the intensity and incidence of flooding the commercial and residential areas within the Exmouth town site.

- Methodology** **GIS Databases:**
- Hydrography, linear - DoW
 - Hydrography, linear (hierarchy) - DoW
 - Topographic Contours, Statewide

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

Comments

The properties under application are zoned 'Industrial,' 'Recreation and Open Space,' 'Residential Development' and 'Roads' under the Town Planning Scheme.

The Shire of Exmouth (2010) have advised that the proposed clearing is for the purpose of preventing flood waters entering commercial and residential properties north and south of the Exmouth Light Industrial area.

The applied clearing area lies within the Gascoyne RiWI Groundwater Area and Pilbara River & tributaries RiWI Area and therefore water resources in this location are managed by the Department of Water. The Department of Water have advised that the "subject property lies within the Pilbara Surface Water Area as proclaimed under the Rights in Water and Irrigation Act 1914" and as such "any interference with the bed or banks of a watercourse in this proclaimed area will require a permit from DoW" (DoW, 2010b). In addition, any groundwater abstraction in this area would also require a groundwater licence (DoW, 2010b).

The flood mitigation works will alter the hydrology of the area and as a result may subsequently impact upon the Camerons Cave threatened ecological community should diverted water and mobilised silts encroach on the TEC buffer zone (DEC, 2009). Further information on the predicted drainage patterns associated with the works and the altered hydrology as a result of the clearing have previously been requested by DEC (DEC, 2009) and are required in order to ascertain the potential impacts upon the Camerons Cave TEC (DEC, 2010c).

The flood mitigation works are likely to increase the intensity of water flowing through the Exmouth town site which in turn could lead to increased erosion, further down stream of the works on the eastern side of Murat Road, and flooding. The Shire of Exmouth (2010) have advised that the Light Industrial Creek Floodway runs through the southern part of town and currently passes through a culvert system under Reid Street, continuing across the spillway on Murat Road and into storage basins. Flood waters currently discharge down Reid Street to the intersection of Murat Road and contribute to flooding of commercial and residential areas north and south of the light industrial area (Shire of Exmouth, 2010). Infrastructure associated with the flood mitigation works should ensure that potential erosion and flooding will be mitigated.

The area under application is registered under a Native Title claim. Therefore, in accordance with Section 24M of the Native Title Act 1993 the claimants have been advised of the proposal however, no comments were received by the Department.

- Methodology** References:
- DEC (2009)
 - DEC (2010c)
 - DoW (2010b)
 - Shire of Exmouth (2010)
- GIS Databases:
- RiWI Act, Ares - DoW
 - RiWI Act, Groundwater Areas - DoW
 - Topographic Contours, Statewide - DOLA
 - Town Planning Scheme Zones - DPI

4. Assessor's comments

Comment

The assessable criteria have been addressed and the proposed clearing is at variance to Principle (f), may be at variance to Principles (a), (b) and (g) and is not likely to be at variance to Principles (c), (d), (e), (h), (i) and (j).

In order to mitigate the risk of wind erosion and the potential for weed encroachment, should a clearing permit be granted, it is recommended that it be conditions of the permit that clearing be limited to not more than one week prior to the commencement of works and weed hygiene and management be implemented.

5. References

- ANCA (1996). A Directory of Important Wetlands in Australia. Australian Nature Conservation Agency, Canberra.
(<http://www.environment.gov.au/water/topics/wetlands/index.html>)
- Black, S., Burbidge, A., Brooks, D., Green, P., Humphreys, W.F., Kendrick, P., Myers, D., Shepherd, R and Wann, J. (2001) Camerons Cave Troglitic Community, Camerons Cave Millipede and Camerons Cave Pseudoscorpion Interim Recovery Plan 2000-2003. Interim Recovery Plan No. 76. Western Australian threatened Species and Communities Unit, Department of Conservation and Land Management, Wanneroo, Western Australia.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Davis, J.A., Froend, R.H., Hamilton, D.P., Horwitz, P., McComb, A.J., Oldham, C.E., Environmental Water Requirements to Maintain Wetlands of National and International Importance (2001) Environmental Flows Initiative Technical Report Number 1, Commonwealth of Australia, Canberra.
- DEC (2009) Letter to Shire of Exmouth - LIA/ Reid Street Flood Mitigation Works. Department of Environment and Conservation, Exmouth, Western Australia. TRIM ref DOC119793.
- DEC (2010a) Site Visit for Clearing Permit Application CPS 3605/1, Lot 959 on Plan 215756, Lot 1135 on Plan 217620, Lot 1469 on Plan 41058, unallocated Crown land and Reid Street Road Reserve, Exmouth. Site inspection undertaken 16/04/2010. Department of Environment and Conservation, Western Australia (DEC ref. A299688).
- DEC (2010b) Flora Advice for CPS 3605/1, Lot 959 on Plan 215756, Lot 1135 on Plan 217620, Lot 1469 on Plan 41058, unallocated Crown land and Reid Street Road Reserve, Exmouth. Department of Environment and Conservation, Western Australia (DEC ref. A298511).
- DEC (2010c) Threatened Ecological Community Advice for CPS 3605/1, Lot 959 on Plan 215756, Lot 1135 on Plan 217620, Lot 1469 on Plan 41058, unallocated Crown land and Reid Street Road Reserve, Exmouth. Species and Communities Branch, Department of Environment and Conservation, Western Australia (DEC ref. A298493).
- DEWHA (2002) Cape Range and Adjacent Coastal Plain, Exmouth, WA, Australia, Australian Heritage Database. Department of Environment, Water, Heritage and the Arts, Canberra, Australia.
- DEWHA (2009) Species Profiles and Threats Database. Accessed 15 April 2010. Department of Environment, Water, Heritage and the Arts, Canberra, ACT, Australia.
- DoW (2010a) Advice for Application to Clear Native Vegetation Under the Environmental Protection Act 1986, CPS 3605/1 - Lot 959 on Plan 215756, Lot 1135 on Plan 217620, Lot 1469 on Plan 41058, unallocated Crown land and Reid Street Road Reserve, Exmouth. Department of Water, Geraldton, Western Australia (DEC ref. A298506).
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6. Glossary

Term	Meaning
CALM	Department of Conservation and Land Management (now DEC)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment (now DEC)
DoW	Department of Water
DMP	Department of Mines and Petroleum (ex DoIR)
DRF	Declared Rare Flora
EPA	Office of the Environmental Protection Authority
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DoW)