



1. Application details

1.1. Permit application details

Permit application No.: 1626/2
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Len Holberton Works Supervisor Shire of Upper Gascoyne

1.3. Property details

Property:

- LOT 30 ON PLAN 220366 (GASCOYNE RIVER 6705)
- LOT 30 ON PLAN 220366 (GASCOYNE RIVER 6705)
- LOT 11 ON PLAN 238356 (GASCOYNE RIVER 6705)
- LOT 11 ON PLAN 238356 (GASCOYNE RIVER 6705)
- LOT 11 ON PLAN 238356 (GASCOYNE RIVER 6705)
- LOT 31 ON PLAN 238172 (GASCOYNE RIVER 6705)
- LOT 31 ON PLAN 238172 (GASCOYNE RIVER 6705)
- LOT 31 ON PLAN 238172 (GASCOYNE RIVER 6705)
- LOT 26 ON PLAN 220374 (PEAK HILL 6642)
- LOT 26 ON PLAN 220374 (PEAK HILL 6642)
- LOT 26 ON PLAN 220374 (PEAK HILL 6642)
- LOT 38 ON PLAN 221065 (WEST LYONS RIVER 6705)
- PART LOT 47 ON PLAN 238650 (GASCOYNE RIVER 6705)
- PART LOT 47 ON PLAN 238650 (GASCOYNE RIVER 6705)
- PART LOT 47 ON PLAN 238650 (GASCOYNE RIVER 6705)
- LOT 36 ON PLAN 221184 (GASCOYNE RIVER 6705)
- LOT 36 ON PLAN 221184 (GASCOYNE RIVER 6705)
- LOT 221 ON PLAN 220357 (GILROYD 6701)
- LOT 221 ON PLAN 220357 (GILROYD 6701)
- LOT 35 ON PLAN 220219 (GASCOYNE RIVER 6705)
- LOT 37 ON PLAN 27386 (WEST LYONS RIVER 6705)
- LOT 37 ON PLAN 27386 (WEST LYONS RIVER 6705)
- LOT 37 ON PLAN 27386 (WEST LYONS RIVER 6705)
- ROAD RESERVE (WEST LYONS RIVER 6705)
- ROAD RESERVE (WEST LYONS RIVER 6705)

Local Government Area: Shire Of Meekatharra & Shire Of Shark Bay & Shire Of Upper Gascoyne
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
107.85		Mechanical Removal	Road construction or maintenance

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 18: Low woodland; mulga (Acacia aneura)	The vegetation under application ranges from completely degraded to good condition. The areas under application are for the purpose of road realignment and maintenance. The vegetation proposed to be cleared consists of thin linear strips of vegetation within road reserves and is dominated by mulga	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Across the Shire the native vegetation condition is likely to range from 'degraded' to 'good' (Keighery B.J. 1994). Depending on the intensity of grazing however, vegetation structure may be significantly altered with possible weed invasion within road reserves, where vegetation condition may be 'degraded' and not easily regenerated (Keighery, 1994).
Beard vegetation association 21: Low woodland; waterwood			
Beard vegetation association 29: Sparse low woodland; mulga, discontinuous in scattered groups			

Beard vegetation association 39: Shrublands; mulga scrub (Acacia aneura) scrub (Hopkins et al. 2001, Shepherd et al. 2001).

Beard vegetation association 160: Shrublands; snakewood & Acacia victoriae scrub

Beard vegetation association 165: Low woodland; mulga & snakewood (A. eremaea)

Beard vegetation association 169: Shrublands; mulga & minniritchie scrub

Beard vegetation association 181: Shrublands; mulga & snakewood scrub

Beard vegetation association 205: Shrublands; Acacia sclerosperma & bowgada scrub

Beard vegetation association 222: Sparse low woodland; mulga and Acacia victoriae in scattered groups

Beard vegetation association 2081: Shrublands; bowgada and associated spp. scrub (Hopkins et al. 2001, Shepherd et al. 2001).

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 is not likely to be at variance to this Principle**

The vegetation under application is comprised of eleven Beard vegetation types and is in a degraded condition (Keighery, 1994). The vegetation proposed to be cleared consists of thin linear strips of vegetation within road reserves and is dominated by mulga (*Acacia aneura*) scrub (Hopkins et al. 2001, Shepherd et al. 2001). In addition the areas under application are mapped within the Carnarvon, Gascoyne and Murchison IBRA regions and all have greater than 99% of native vegetation remaining (Shepherd, 2006).

The vegetation types in which the proposed clearing is to occur are common and widespread. Given the extensive surrounding vegetation, disturbance and condition of the vegetation it is unlikely that the proposed clearing areas are representative of an area of outstanding biodiversity in the Bioregion or local area.

Methodology Keighery (1994)
 Hopkins et al. (2001)
 Shepherd et al. (2001)
 Shepherd (2006)
 GIS Databases:
 - Interim Biogeographic Regionalisation of Australia - EA 18/10/00
 - Pre European Vegetation } DA 01/01

(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 is not likely to be at variance to this Principle**

A range of fauna species of conservation significance have been recorded from a variety of habitats within the Shire of Upper Gascoyne. The areas under application are mapped within the Carnarvon, Gascoyne and Murchison IBRA regions. All regions have greater than 99% of native vegetation remaining (Shepherd, 2006). Due to the degraded condition of the vegetation, disturbance and the clearing occurring within road reserves, which consist of thin linear strips of vegetation, it is unlikely that the areas under application are necessary for the maintenance of significant habitat for fauna indigenous to Western Australia.

Methodology Shepherd (2006)
 GIS Databases:
 - SAC Bio datasets 260607

(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

The following Rare Flora (RF) and Priority Flora species have been recorded within the Shire of Upper Gascoyne.

Species Name	RF	Priority 1	Priority 2	Priority 4
Thryptomene wittweri	*			
Pityrodia auguustensis	*			
Ptilotus astrolasius var. luteolus		*		
Eremophila arguta	*			
Eremophila flaccida subsp. attenuata			*	
Hemigenia sp. Glenburgh	*			
Rhodanthe ascendens	*			
Eremophila rigens	*			
Stilidium weeliwolli		*		
Rhodanthe frenchii		*		
Rumex crystallinus		*		
Goodenia berringbinensis			*	

The closest known records of RF occurs 28 km away and Priority 1 flora within 4 km of one of the areas under application. Given the distance from the proposed areas to be cleared, the degraded condition (Keighery, 1994) of the vegetation and the likely disturbance from existing transport corridors it is unlikely that the vegetation proposed to be cleared is necessary for the continued existence of rare flora.

Methodology

Keighery (1994)
GIS Databases:
- Declared Rare and Priority Flora list - CALM 01/07/05
- SAC Bio datasets 260607
- Clearing Regulations - Environmentally Sensitive Areas - DoE 30/05/05

(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

There are no known records of Threatened Ecological Communities within a 50 km radius of the areas under application. This proposal is therefore not likely to be at variance with this Principle.

Methodology

GIS Databases:
- Threatened Ecological Communities - CALM
- SAC Bio datasets 260607

(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

A breakdown of the vegetation complexes and associations can be found in Table 1 below. The areas under application are mapped within the Carnarvon, Gascoyne and Murchison IBRA regions. All regions have greater than 99% of native vegetation remaining. Given the size of the proposed clearing compared to the area of remnant vegetation remaining within the region, the proposed clearing will not be significant as remnants of native vegetation.

Table 1: Pre-European Vegetation

	Pre-European Reserves/CALM- area (ha)	Current extent (ha)	Remaining %*	managed land,
%				
IBRA Bioregion - Carnarvon	8,382,974	8,369,554	99.8	11.4
IBRA Bioregion - Gascoyne	18,075,252	18,075,252	100	10.3
IBRA Bioregion - Murchison	28,120,557	28,120,557	100	6.7
Shire - Meekatharra	Not available	Not available	Not available	Not available
Shire - Shark Bay	Not available	Not available	Not available	Not available
Shire - Upper Gascoyne	Not available	Not available	Not available	Not available
Beard veg type - 18	19,892,436	19,890,348	100	5.8

Beard veg type - 21	49,180	49,180	100	0.0
Beard veg type - 29	7,904,064	7,904,064	100	5.2
Beard veg type - 39	6,613,602	6,613,496	100	11.8
Beard veg type - 160	1,111,587	1,111,587	100	11.7
Beard veg type - 165	732,369	732,369	100	1.9
Beard veg type - 169	430,558	430,558	100	7.0
Beard veg type - 181	1,697,328	1,697,328	100	16.3
Beard veg type - 205	294,723	294,556	99.9	11.0
Beard veg type - 222	154,625	154,625	100	40.6
Beard veg type - 2081	1,331,749	1,321,057	99.2	15.1

* (Shepherd et al. 2001)

Methodology GIS Databases:
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Pre-European Vegetation - DA 01/01
- Local Government Authorities - DLI 08/07/04
- EPA Position Paper No 2 Agriculture Region - DEP 12/00
Shepherd et al, 2001.
Shepherd (2006)

(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 not likely to be at variance to this Principle**
There are numerous minor non-perennial watercourses located within the Shire of Upper Gascoyne. No major watercourses or wetlands are located within the areas under application. Some roads in the application area cross minor non-perennial watercourses, however the proposed maintenance and construction of 'vee drains' and bunds are measures appropriate for containing localised runoff.

Due to the exclusion of the presence of any wetlands or major watercourses it is unlikely the clearing will be at variance with this principle.

Methodology GIS Databases:
- Hydrography, linear - DoE 01/02/04
- Hydrographic Catchments - Catchments - DoE 23/03/05
- Rivers, DOW
- Hydrography, Lakes (Coarse Scale, 1M GA)

(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**
Topography and soil types are generally extensive flats and gently sloping plains with surface quartz gravels and hard alkaline and neutral red soils. There is a low risk that clearing of sites underlain by hardpan at shallow depth or where exposed may be subject to localised flooding and soil erosion.

The average annual rainfall varies between 200-400 mm and with an annual evaporation rate of 3400-3600 mm, there is little surface flow during normal seasonal rains, reducing the likelihood of soil erosion.

The proposed clearing is within and adjoining road reserves for road realignment and may cause some short term land degradation issues in terms of localised flooding and soil erosion. However, these issues would be minimised as works on the realignment of roads will include roadside infrastructure to prevent land degradation associated with roads i.e. table drains and culverts.

This proposal is therefore unlikely to cause or appreciable land degradation.

Methodology GIS Databases:
- Rainfall, Mean Annual - BOM 30/09/01
- Salinity Risk LM 25m - DOLA 00
- Acid Sulphate Soil risk map, SCP DOE 04/11/04
- Soils, Statewide - DA 11/99
- Topographic Contours, Statewide - DOLA 12/09/02
- Evaporation Isopleths - BoM 30/09/01

(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 Mount Augustus and Kennedy Range National Parks occur within the Shire of Upper Gascoyne. In addition the Mount Augustus Area and the Kennedy Range Area are registered as National Estate and are listed as Environmentally Sensitive Areas. There are also 11 former leasehold properties proposed for conservation within the Shire of Upper Gascoyne.

One of the areas under application occurs within the former leasehold property, Cobra Station. Given the relatively small areas under application and that the areas under application are for road realignments, it is unlikely that this proposal will have a significant impact on the environmental values of any conservation area.

Methodology GIS Databases:

- CALM Managed Lands & Waters - CALM 01/07/05
- Proposed National Parks FMP-CALM 19/03/03
- Register of National Estate - EA 28/01/03
- Clearing Regulations - Environmentally Sensitive Areas - DoE 30/05/05

(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 areas under application lie within the Gascoyne Rover, Murchison River and Wooramel River catchments.

With an average annual rainfall varying between 200-400 mm and an annual evaporation rate of 3400-3600 mm, there is little surface flow or groundwater recharge during normal seasonal rains. Groundwater salinity (measured as Total Dissolved Solids) across the application area ranges between 500 mg/L and 7,000 mg/L and is considered to be marginal to low saline.

The proposed clearing for road realignments may cause some short term water quality issues in terms of localised surface water sedimentation during works. However these issues should be minimised as works on realignment of roads will include roadside infrastructure to prevent land degradation associated with roads i.e. table drains and culverts.

Due to the relatively small areas proposed to be cleared for road realignment works it is unlikely the areas under application will exacerbate salinity issues or increase water levels within the shire boundary.

Methodology GIS Databases:

- WIN Groundwater Sites, Monitoring - DOW
- Public Drinking Water Sources (PDWSAs) - DOE 09/08/05
- Hydrographic Catchments - Catchments - DOE 23/03/05
- Hydrography, linear - DoE 01/02/04
- Rainfall, Mean Annual - BOM 30/09/01
- Groundwater Salinity, Statewide - DOW
- Evaporation Isopleths - BoM 30/09/01

(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

With an average annual rainfall varying between 200-400 mm and an annual evaporation rate of 3400-3600 mm, there is little surface flow during normal seasonal rains. However the Gascoyne area is known for periods of flooding intensity during high rainfall events. Due to this history and the scale of the proposed clearing, impacts from clearing are not likely to exacerbate flooding in this region.

The proposed clearing and earthworks on the roadsides may cause some short term water pooling. However, the construction of table drains and culverts for road works are designed to remove the risk of water ponding on a sustained basis.

Methodology GIS Databases:

- Rainfall, Mean Annual - BOM 30/09/01
- Topographic Contours, Statewide - DOLA 12/09/02
- Evaporation Isopleths - BoM 30/09/01

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

Comments

The Shire of Shark Bay has granted permission for the Shire of Upper Gascoyne to undertake works on Gilroyd Road which dissects both Shires.

There is no further requirement for a RIWI Act Licence, Works Approval or EP Act Licence for the area under application.

There are a large number of Aboriginal Sites of Significance located within the Shire of Upper Gascoyne. The Department advises that the proponent contact the relevant authorities to seek advice on whether or not the road works will impact upon the Aboriginal Sites of Significance listed within the area under application.

One of the sites under application falls within the former leasehold property known as ex-Cobra Pastoral Station and is listed as Unallocated Crown Land. DEC manage the land under an MOU with the Department of Planning and Infrastructure. The applicant has received written permission from the land manager to conduct the clearing as requested.

Methodology GIS datasets:
- Native Title Claims - DLI 7/11/05
- Aboriginal Sites of Significance - DIA 26/04/07
- Register of Heritage Places - DPI
- Environmental Impact Assessments - 22/02/07

4. Assessor's comments

Comment

The assessable criteria have been addressed and no objections were raised. Management conditions relating to recording and reporting will be placed on the permit.

5. References

- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Shepherd, D.P. (2006). Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

6. Glossary

Term	Meaning
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)