



1. Application details

1.1. Permit application details

Permit application No.: 2059/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Woodside Energy Ltd

1.3. Property details

Property: LOT 500 ON PLAN 55670 (GAP RIDGE 6714)
 ROAD RESERVE (GAP RIDGE 6714)
 ROAD RESERVE (GAP RIDGE 6714)
 ROAD RESERVE (MILLARS WELL 6714)
 ROAD RESERVE (NICKOL 6714)

Local Government Area: Shire Of Roebourne

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.75		Mechanical Removal	Building or Structure

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 589: Mosaic: Short bunch grassland - savannah / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex.	The majority of the proposed clearing traverses tussock grasslands that were dormant at the time of the flora and vegetation survey conducted by Astron Environmental (June 2007). Vegetation was generally degraded to very degraded due to disturbance caused by the proximity to main roads, tracks and weed invasion (Astron Environmental, 2007). Parts of the vegetation along the proposed alignment have been cleared due to the construction activities associated with a new land development.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The description of vegetation under application was obtained from a survey report provided as supporting information by the proponent, prepared by Astron Environmental, June 2007.
PT2 - Open (10-30%) tussock grassland of <i>Eragrotis xerophila</i> with patches of <i>Panicum decompositum</i> , <i>Aristida latifolia</i> , <i>Erachne benthamii</i> . There are annual grasses on scalds. <i>Cenchrus ciliaris</i> occurs along road verges but is generally scattered elsewhere.	PT2 Tussock grassland, dormant, not infested by buffel grass except for fringe along Madigan Road but has been recently impacted for optic cable installation. Along Dampier Road, some buffel invasion in this vegetation association.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	
PHg1 - Open (10-30%) hummock grassland of <i>Triodia wiseana</i> with scattered (2%) low shrubs of <i>Acacia bivenosa</i> , <i>A.</i>	PSh3 - Shrub and hummock grass regrowth after disturbance for Madigan Road construction. Buffel invasion especially in run-off drain created for road.		

<p><i>pyrifolia</i>, Patchy <i>Eragrostis xerophila</i>, <i>Erachne benthamii</i>, <i>Themeda triandra</i>.</p> <p>PSh3 - Shrubland (10-30%) of <i>Acacia ancistrocarpa</i> with <i>Acaia bivenosa</i> over open hummock grassland of <i>Triodia wiseana</i> with patchy <i>Cenchrus ciliaris</i>.</p> <p>Pt3 - Tussock grassland of <i>Cenchrus ciliaris</i>, <i>Cenchrus setiger</i> with open herbs and scattered low shrubs.</p> <p>Pt4 - Mixed tussock grassland of <i>Sorghum plumosum</i>, <i>Chrysopogon fallax</i> and <i>Cenchrus ciliaris</i> over open hermland.</p> <p>DSt1 - Annual shrubland (10-30% 1-2m) of <i>Sesbania cannabina</i> and perennial <i>Acacia trachycarpa</i> over hermland of <i>Stylosanthes hamata</i> over open (10-30%) tussock grassland of <i>Cenchrus ciliaris</i>, <i>C. setiger</i>, <i>Aristida contorta</i>.</p>	<p>PHg1 - Hummock grassland, buffel only along fringe of Madigan Road. Recently impacted by fibre optic cable installation.</p> <p>Pt3 - Buffel tussock grassland paralleling edge of Dampier Road, also has an off road bike track dissecting it.</p> <p>Pt4 - The <i>Sorghum</i> grassland has been reduced to a 2m wide corridor between Dampier Road and the new construction track. it is not infested with buffel grass.</p> <p>PSh4 - At the time of the survey (Astron Environmental, 2007) this vegetation was identified as being in 'good' condition but since the survey this vegetation has been removed due to a residential development.</p> <p>DSt1 - The alignment passes directly beside a road culvert which accommodates this drainage line. It has been highly disturbed and the drainage line within the alignment harbours annual invasive <i>Sesbania cannabina</i> and weed species, <i>Stylosanthes hamata</i> along with buffel grass.</p>	<p>Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)</p>
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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 Biodiversity Audit of the Pilbara (McKenzie *et al.*, 2003) classifies the Roebourne Plains coastal grasslands, which occur along a section of the alignment as being part of an ecosystem at risk, of vulnerable status with a declining condition rating (Astron Environmental, 2007). The Roebourne Plains grassland in the southern portion (paralleling Madigan Road) of the Water Main alignment is on the very southern most extent of its range in this area (Astron Environmental, 2007) and is therefore of high conservation significance. Though the tussock grassland along the water main alignment is in a degraded state due to disturbance by vehicular tracks, weed invasion and main road activity, there is a concern that future clearing and development of the area will add to the decline in this vulnerable community.

Two studies conducted in the early 1990's (McKenzie *et al.*, 2003 & Beard, 1990) indicated that there is increasing pressure on the Roebourne Plains coastal grasslands and Sherlock Station areas from grazing and industry (Astron Environmental, 2007). The Roebourne Plains coastal grassland, including those near 7 Mile Creek is listed as "ecosystems at risk" according to McKenzie *et al.*, (2003). Further, it is not protected in any reserve and therefore is a high priority for its conservation (Astron Environmental, 2007).

In two previous approvals (CPS 1749/1 & 1985/2) potentially up to 40ha of this vegetation community that is an 'ecosystem at risk' has been cleared. Given the extent of remnant vegetation within the local area, the proposed area may not be considered to be a significant remnant in an extensively cleared area, however, ongoing approvals make it difficult to assess the actual extent of the Roebourne Plains grasslands area and therefore make it highly susceptible to decline.

The Roebourne Plains grassland community is noted as an ecosystem at risk due to the increased pressure imparted by development and industry in the local area, and due to the fact the local extent of this community is unknown, clearing under this proposal may be at variance to this principle.

Methodology McKenzie *et al.*, (2003)
Beard (1990)
Astron Environmental (2007)

(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 fauna habitat assessment conducted for Woodside's proposed Gap Ridge Accommodation Village (GRAV), which is located to the north of the clearing application area, identified that the GRAV site may represent suitable habitat for the Lakeland Downs mouse (*Leggadina lakedownensis*, P4) and Skink (*Notoscincus butleri*, P4) (SKM 2007). There is one record of a Priority Fauna species, the Western Pebble Mouse, within 10 kilometres of the area under application (GIS Database). This observation was recorded in 1979. This species constructs mounds that are most common on spurs and lower slopes of rocky hills. The area proposed to be cleared does not appear to include suitable habitat for this species should it still be present in the local area.

The vegetation to be cleared is a very small area that is highly degraded and closely associated to main roads and infrastructure and therefore does not provide significant habitat for fauna communities. The vegetation is largely cleared and what remains is very sparse and consists of degraded grasslands which in their current state do not provide an ecological linkage necessary for the maintenance of fauna.

Therefore clearing of vegetation under this proposal is not likely to be at variance to this principle.

Methodology SKM (2007)
GIS Database:
- SAC Biodatasets - DEC, 17/09/07

(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 16 records of four species of Declared Rare or Priority flora within the local area (10 kilometre radius) (GIS database). One of these species is the Declared Rare Flora *Drummondita ericoides*. Astron Environmental, (2007) identified a further eleven Priority Flora species that they believe could potentially occur within the project area.

A flora survey was conducted on June 7 2007, with a limitation of the survey being that it was conducted "within the limitations of the 'dry' season" (Astron Environmental, 2007). No Declared Rare or Priority flora species were identified within the vegetation under application as a result of a survey commissioned by the proponent. The vegetation applied to be cleared is highly degraded and due to the close proximity to main roads and various other disturbance, it is unlikely that this vegetation would support declared rare flora species.

Therefore it is unlikely that this proposal is at variance to this principle.

Methodology Astron Environmental (2007)
GIS Database
- SAC Biodatasets - DEC 17/9/07

(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 recorded occurrences of Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) within the local area (10 kilometre radius) (GIS Database). The nearest recorded Ecological Community is the "Stygofauna of freshwater aquifers of the Pilbara Region, Millstream type" PEC, which is located approximately 97 kilometres south-south-west of the clearing application area.

Though there are no TECs listed for the Roebourne subregion (PIL4) of the Pilbara Craton Bioregion (McKenzie *et al.*, 2003), a number of other ecosystems considered to be at risk (vulnerable) are listed. The list includes the Roebourne Plains coastal grasslands, Sherlock Station, Roebourne Common, Airport Reserve, and 7 Mile Creek (Astron Environmental, 2007). A further relevant community, Roebourne Plains stony chenopod association, is also listed as vulnerable (Astron Environmental, 2007).

As no declared TECs or PECs have been identified within the local area or greater area (50 kilometre radius), this proposal is unlikely to be at variance to this Principle.

Methodology McKenzie *et al.*, (2003)
Astron Environmental (2007)
GIS Database
- SAC Biodatasets - DEC, 17/09/07

(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 State Government is committed to the national Objectives and Targets for Biodiversity Conservation, which includes a target that prevents the clearance of ecological communities with an extent below 30% of that present pre-European settlement (Department of Natural Resources and Environment, 2002).

The vegetation of the area applied to clear consists of Beard Vegetation Association 589 (Hopkins *et al.*, 2001).

Beard Association 589 is described as follows; Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex (*T. pungens*). Beard vegetation association 589 has approximately 100% of its pre-European extent remaining within the Pilbara IBRA region (Shepherd *et al.*, 2001).

The Biodiversity Audit of the Pilbara (McKenzie *et al.*, 2003) classifies the Roebourne Plains coastal grasslands, which occur along a section of the alignment as being part of an ecosystem at risk, of vulnerable status with a declining condition rating (Astron Environmental, 2007). The Roebourne Plains grassland in the southern portion (paralleling Madigan Road) of the Water Main alignment is on the very southern most extent of its range in this area (Astron Environmental, 2007) and is therefore of high conservation significance. Though the tussock grassland along the water main alignment is in a degraded state due to disturbance by vehicular tracks, weed invasion and main road activity, there is a concern that future clearing and development of the area will add to the decline in this vulnerable community.

According to studies conducted in the early 1990's by Payne and Tille (1992) and Beard (1990) the vegetation within the project area is relatively widespread both locally and within the Pilbara region along the coastal plains (Astron Environmental, 2007). The Horseflat land system is well represented from Regnard Bay to Balla Balla (Astron Environmental, 2007).

Having said this, the studies indicated that there is increasing pressure on the Roebourne Plains coastal grasslands and Sherlock Station areas from industry (Astron Environmental, 2007). The Roebourne Plains coastal grasslands, including those near 7 Mile Creek are listed as "ecosystems at risk" according to McKenzie *et al.*, (2003). Further, they are not protected in any reserve and therefore are a high priority for conservation (Astron Environmental, 2007).

In two previous Woodside clearing approvals (CPS 1749/2 & 1985/1) potentially up to 40 hectares of this vegetation community that is an 'ecosystem at risk' has been cleared. Given the extent of remnant vegetation within the local area, the application area may not be considered a significant remnant in an extensively cleared area, however ongoing approvals make it difficult to assess the actual extent of the Roebourne Plains grasslands area and therefore make it highly susceptible to decline.

The Roebourne Plains grassland community is noted as an ecosystem at risk due to the increased pressure imparted by grazing, development and industry in the local area, and due to the fact the local extent of this community is unknown, clearing under this proposal may be at variance to this principle.

Methodology Astron Environmental (2007)
Payne and Tille (1992)
Beard (1990)
Department of Conservation and Land Management (2002)
Department of Natural Resources and Environment (2002)
Hopkins *et al.* (2001)
McKenzie *et al.*, (2003)
Shepherd *et al.* (2001)

(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 at variance to this Principle

The vegetation to be cleared is not growing in association with, nor does it provide a buffer for a wetland. The area to be cleared runs parallel to main roads and intersects one minor drainage line (Astron Environmental, 2007). This drainage line has been previously disturbed and is degraded with the presence of annual invasive *Sesbania cannabina*, *Stylosanthes hamata* and *Cenchrus ciliaris* (Astron Environmental, 2007). As the vegetation to be cleared is not linked to a watercourse or wetland with significant environmental values, the proposal is not at variance to this principle.

Methodology Astron Environmental (2007)
GIS Database;
- Hydrography, Linear (Medium Scale, 250K GA)
- Hydrography, Linear (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

Development of the area under application may result in limited wind and water erosion, predominantly during the construction phase of the project.
Stony soil and loamy soil is described as having low to variable potential for soil degradation in terms of structure decline, acidification and erosion (Schoknecht 2002).
The area under application is mapped as having a moderate to low Acid Sulphate Soil risk (GIS Database).
Given the nature of the soil present within the area under application has a low to variable potential for land degradation, and the area applied to be cleared is small this proposal not likely to be at variance to this principle.

Methodology Schoknecht, N. (June 2002)
GIS Database;
- Acid Sulfate Soil Risk Map - Pilbara Coastline (DEC)
- Topographic Contours, Statewide - DOLA 12/09/02

(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

There are no conservation areas within a 10km radius of the application area. The nearest DEC-managed reserve (and Environmentally Sensitive Area) is located approximately 18 kilometres from the area under application, and consists of islands within the Dampier Archipelago that are proclaimed Nature Reserves (GIS Database). There is a proposal for these islands to become proclaimed National Parks in the future. Further more, the waters of the Dampier Archipelago form part of a proposed Marine Park, and the Burrup Peninsular (approximately 13 km from the proposed clearing) is proposed to become Murujuga National Park. The nearest DEC managed lands are the Millstream-Chichester National Park, approximately 43.5km southeast of the application area (GIS Database). Based on the large distance to the nearest conservation reserve, this proposal is unlikely to have an impact on any conservation area.

The area applied to be cleared does include habitat that is not well represented on conservation land. The Roebourne Plains Grassland occurs along the water mains alignment and is classified as an ecosystem at risk, of vulnerable status with a declining condition rating (McKenzie *et al.*, 2003). The Roebourne Plains Grassland is not represented in any reserve and therefore there is a high priority for its conservation (Astron Environmental, 2007). Having said this, the area applied to be cleared is very small and highly degraded.

Due to the great distance between the location of the clearing and any conservation areas, and the fact that the vegetation (although belonging to an ecosystem considered at risk) is a very small area and highly degraded, the proposed clearing is not likely to be at variance to this principle.

Methodology McKenzie *et al.*, (2003)
Astron Environmental (2007)
GIS Dataset
- Ramsar wetlands (CALM February 2003)
- System 1-5 and 7-12 Areas (DOE June 1995)
- CALM Managed Lands and Waters (CALM July 2005)
- Clearing Regulations - Environmentally Sensitive Areas (DOE May 2005)
- Covenant sites (DEC 2007)
- Land for Wildlife sites (DEC 2007)

(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 at variance to this Principle

Given that the vegetation to be cleared is such a small area (0.75 ha), is in poor condition (Astron Environmental, 2007), and comprises shrubs and grasses (rather than deep-rooted trees), it is unlikely that the removal of this vegetation will cause deterioration in the quality of surface or underground water. The application area is not within a Public Drinking Water Source Area, catchment or wetland and clearing will not cause significant sedimentation, erosion or turbidity impacts to local watercourses. Given the above, this proposal is not at variance to this principle.

Methodology Astron Environmental (2007)
GIS Database;
- Hydrology, linear - DOE 1/02/04;
- Lakes 250K - GA;
- Rivers 250K - GA;
- EPP Areas - DEP 06/95;
- EPP Lakes - DEP 28/07/03;
- ANCA Wetlands - CALM 08/01;

- Ramsar Wetlands - CALM 21/10/02;
- Hydrographic Catchments - Catchments DoE 3/4/03
- Lakes 250K - GA;
- Rivers 250K - GA;

(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 at variance to this Principle

Rainfall in the area is low and erratic (Astron Environmental, 2007). The mean annual rainfall for the area is approximately 253 mm and with an evaporation point potential of 3200mm (GIS Database), there is little chance of flooding or inundation. The area to be cleared consists of sandy/gravelly plains which are greater than 10 meters above mean sea level (GIS Database). Excess water drains from nearby hilly areas out through drainage channels and 7 Mile Creek to lower lying coastal areas. Clearing of the vegetation in the area applied to clear will have no influence on the likelihood or intensity of flooding. Therefore the proposal is not at variance to this principle.

- Methodology** Astron Environmental (2007)
 GIS Databases;
 - Evapotranspiration, Point Potential - BOM 30/09/01
 - Rainfall, Mean Annual - BOM 30/09/01
 - Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

A Native Title Claim exists over a greater area encompassing the clearing application area.

Several Aboriginal Sites of Significance intersect the clearing application area.

The clearing application is located within the road reserve. Main Roads WA has reviewed the proposal and approved the construction of the water main from Balmoral Road West, along 200-C-42-0010, subject to certain conditions (TRIM Ref: DOC32880).

Any disturbance to bed and banks may require a Permit from the Department of Water.

- Methodology** DEC TRIM Reference: DOC 32880
 GIS Database:
 - Aboriginal Sites of Significance - DIA
 - Native Title Claims - DLI

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Building or Structure	Mechanical Removal	0.75	Assessable criteria have been addressed and no objections were raised. The application was not at variance to principles (f), (i) and (j), and not likely to be at variance to principles (b), (c), (d), (g), and (h). Due to the existence of the Pilbara Coastal Plains Grasslands which have been noted as a vulnerable ecosystem 'at risk' of decline, the assessment found that the proposal may be at variance to principles (a) and (e).

5. References

Astron Environmental (7 June 2007) Foster Wheeler WorleyParsons Gap Ridge Accommodation Village Water Main Alignment Vegetation and Flora Survey. Prepared for Foster Wheeler WorleyParsons, Report No. 1493-RV-02. (DEC TRIM Ref; DOC32880)

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.

McKenzie N. L, May J. E and McKenna S, 2003. Bioregional Summary of the 2002 Bioregional Audit for Western Australia. CALM 2003.

Payne, A.L and Tille P.J., 1992. An Inventory and Condition Survey of the Roebourne Plains and Surrounds, Western Australia. Technical Bulletin 83, Western Australian Department of Agriculture, March 1992.

Schoknecht N. (2002) Soil Groups of Western Australia. A simple guide to the main soils of Western Australia. Resource Management Technical Report 246. Edition 3

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)
PEC	Priority Ecological Community
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)

