

Mechanical Removal	Road construction or maintenance
Mechanical Removal	Extractive Industry
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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
Road Reserves: Beard Unit - 947 Medium powderbark and mallet Beard Unit - 1073 Medium woodland; wandoo and mallet Beard Unit - 1074 Succulent steppe with open woodland and thicket; wandoo and <i>Allocasuarina obesa</i> over tea-tree and samphire	The vegetation depicted in site photos along some of the roads proposed for widening varies in condition from completely degraded to good. Aerial photography shows that some of the areas to be cleared for the road maintenance works have been previously cleared. However, parts of these road reserves are vegetated and occur within a broader landscape that has been extensively cleared.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Information taken from photographs of roadside vegetation that were submitted as additional information with the application and through orthomosaic aerial photography.
Gravel Pits: Beard unit 947 - Medium powderbark and mallet Beard unit 1073 - Medium woodland; wandoo and mallet Beard unit 1023 - Medium woodland; York gum, wandoo & salmon gum (<i>E. salmonophloia</i>)	The vegetation within the gravel pits varies from completely degraded to excellent. The Graham Road gravel pit is completely degraded, with only a two-three tree species, Narrogin Valley Road, Contine Road, Narrakine South-Contine Road and Birdwhistle Road gravel pits all comprise of areas varying from degraded to excellent condition.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	Orthomosaic aerial photography.

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 proposal is for the clearing of 10 hectares of native vegetation within road reserves for road widening and for gravel extraction in the Shire of Narrogin. There are a range of vegetation types present with Medium woodland consisting of Powderbark; Mallet; Wandoo; *Allocasuarina obesa* over tea-tree and samphire; York gum; and salmon gum (*E. salmonophloia*). Of the various vegetation types present, the percentage remaining of these types is typically below 30% with one predominant vegetation type below 10%. Aerial photography indicates that while some of the areas to be cleared have been previously cleared, parts of the road reserves and all of the gravel extraction sites are vegetated and occur within a broader landscape that has been extensively cleared. Therefore, the proposal may be at variance to this principle.

To mitigate any loss of biodiversity within the road reserves and surrounding areas, conditions have been imposed on the permit related to flora management, fauna management, and dieback and weed control. Additionally, due to the highly cleared nature of the Shire, a condition has been imposed to offset the values of the area to be cleared through the revegetation of gravel extraction sites.

Methodology Keighery, 1994
Shepard et al. (2001)
GIS Database:
-pre-European Vegetation - DA01/01
- Dumbleyung Kukerin 1.4m Orthomosaic - DLI 02 (Image)

- Wagin 50cm Orthomosaic - DLI06 (Image)
- Corrigin South 1.4m Orthomosaic - DOLA 00 (Image)

(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

Biodiversity Coordination Section, DEC advises that there are 66 records (14 species) of threatened and priority fauna species known to occur within five kilometres of the proposed clearing. Mapping indicates some of these species are located either in the areas proposed to be cleared or within 500 metres of these areas.

Threatened fauna records include:

Forest Red-tailed Black-Cockatoo;
 Malleefowl;
 Numbat;
 Red-tailed Phascogale;
 Western Rosella (inland ssp);
 Carpet Python;
 Pachysaga munggai;
 Bush Stonecurlew;
 Crested Bellbird (southern);
 Western Brush Wallaby;
 Western False Pipistrelle;
 White-browed Babbler (western wheatbelt);
 Tammar Wallaby;
 Western Rosella (inland ssp); and
 White-tailed Black Cockatoo.

To ensure any threatened species are identified and managed accordingly, a condition has been imposed on the permit to ensure an inspection is undertaken by a fauna specialist to identify the presence of any threatened species within the areas proposed for clearing (DEC 2006).

Methodology Keighery (1994)
 DEC Biodiversity advice (2006) TRIM ref DOC5308

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

Comments Proposal may be at variance to this Principle

There is a large number of known occurrences of declared rare flora (DRF) and priority flora in the Shire of Narrogin. Biodiversity Coordination Section, DEC advice shows that there are over 150 records of rare and priority flora (over 60 species) within the Shire boundary.

DRF species within a five kilometre radius of the proposed clearing include:

Calectasia pignattiana;
 Conostylis dummondii;
 Banksia oligantha;
 Verticordia fimbriolepis subsp. fimbriolepis;
 Acacia insolita subsp. recurva;
 Darwinia carnea;
 Lasiopetalum rotundifolium; and
 Pultenaea pauciflora.

These records occur on the same vegetation type as the proposed clearing, with some of the records occurring in nature reserves. Records also indicate that the Narrogin Valley Road gravel pit contains two DRF populations; Darwinia carnea and Lasiopetalum rotundifolium.

To ensure all DRF and priority species are identified and managed accordingly, a condition has been placed on the permit to ensure surveys are undertaken by a flora specialist to identify the presence of any DRF or priority species within the areas proposed for clearing. Where DRF species are identified the Shire will be required to submit the records to the Department of Environment and Conservation ensuring no species are removed unless approved by the CEO. In addition, a condition has been imposed to offset the values of the area to be cleared through the revegetation of gravel extraction sites.

Methodology DEC Biodiversity advice (2006) TRIM ref DOC5308
 Keighery (1994)
 GIS Database:
 - Declared Rare and Priority Flora List - CALM 01/07/05

(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 may be at variance to this Principle

Mapping indicates there are three existing Threatened Ecological Communities (TECs) within 10km of Wickepin-Harrismith Road, Yilliminning Road and Wagin-Wickepin Road. Parts of Yilliminning Road and Wagin-Wickepin Road fall within the same vegetation type as the areas containing TECs, therefore the proposed clearing may be at variance to this principle.

To ensure TECs are identified and managed accordingly, a condition has been placed on the permit to ensure surveys are undertaken within Yilliminning Road and Wagin-Wickepin Road, by a flora specialist, to identify the presence of any TECs. Where TECs are identified the Shire will be required to submit the records to the Department of Environment and Conservation ensuring no TECs are removed unless approved by the CEO.

Methodology GIS Database:
- Threatened Ecological Communities - CALM 15/7/03
- Threatened Plant Communities - DEP 06/95

(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 proposed clearing is throughout the Shire of Narrogin, which is within the Avon Wheatbelt Bioregion. The extent of native vegetation within these areas is 13.6% and 10.3% respectively.

The vegetation under application has been identified as containing four Beard Vegetation Associations 947, 1023, 1073 and 1074. The extent of pre-European remaining for these associations is 25.5%, 5.5%, 29.0% and 23.8% respectively.

The Shire of Narrogin lies within the agricultural zone of EPA Position Statement No. 2. The EPA do not support any further reduction in native vegetation through clearing for agriculture and support active management by landholders to maintain environmental values of remaining vegetation.

Aerial photography indicates that the vegetation condition ranges from cleared areas with no intact vegetation to areas that are vegetated and provide connectivity to other vegetated areas in a largely cleared landscape. This proposal may be at variance to this principle.

To mitigate any potential impacts of the clearing on remnant vegetation, while acknowledging the need to maintain and upgrade roads, the proposed clearing will be carried out in accordance with a condition imposed on the permit requiring that clearing of vegetation be avoided, and where this is not possible, minimised. In addition, to address the loss of vegetation within a highly cleared landscape, a condition has been imposed to offset the values of the area to be cleared through the revegetation of gravel extraction sites.

Methodology Road Network Plan 2006
EPA (2000)
Shepard et al. (2001)
GIS Database:
-pre-European Vegetation - DA01/01
- Dumbleyung Kukerin 1.4m Orthomosaic - DLI 02 (Image)
- Wagin 50cm Orthomosaic - DLI06 (Image)
- Corrigin South 1.4m Orthomosaic - DOLA 00 (Image)

(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

The areas proposed to be cleared are adjacent to some areas subject to inundation and the roads intersect with a number of watercourses. Yilliminning road is located 50m from an ANCA wetland.

The Birdwhistle Road gravel pits have two mapped minor non-perennial watercourse located within the clearing area. To prevent disturbance of these watercourses a condition will be imposed to ensure no clearing occurs within 50m either side of these watercourses.

Given the above, and as many of the roads appear to have been previously cleared and drains and culverts are likely to be installed to manage the flow of watercourses, the proposed clearing is not likely to be at variance to this principle.

Methodology GIS Database:
- Hydrography Linear (hierarchy) - DoE 13/4/05
- ANCA, Wetlands - CALM 08/01

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

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

The Department of Agriculture and Food Western Australia (DAFWA) did not undertake a comprehensive assessment of the land degradation risks associated with the proposed clearing, however their advice indicated that the proposal is not likely to cause land degradation (DAFWA 2005).

The proposed clearing for gravel extraction and roadside maintenance may cause some short term land degradation issues related to localised flooding and soil erosion during works. However, these issues should be minimal as the existing roads have in place roadside infrastructure to prevent land degradation associated with roads i.e. table drains and culverts.

To minimise long term land degradation associated with gravel extraction a condition has been imposed requiring revegetation on completion of the extraction.

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

Methodology DAFWA advice (2005) TRIM ref IN24785

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments Proposal may be at variance to this Principle

The areas proposed to be cleared are not within conservation areas, however some of the roads are adjacent to these areas. These include Highbury State Forest, Arthur River Nature Reserve, Lol Gray State Forest and Dryandra Woodland. Dryandra Woodland is a Registered National Estate and therefore an Environmentally Sensitive Area. Aerial photography indicates that the roadsides, where vegetated, could serve as connectivity between nature reserves in a largely cleared landscape.

To mitigate any potential impacts of the clearing on the environmental values of any adjacent or nearby conservation areas the proposed clearing will be carried out in accordance with a condition imposed on the permit requiring that clearing of vegetation be avoided, and where this is not possible, minimised.

Methodology GIS database:

- CALM Managed Lands and Waters - CALM 1/06/04
- Register of National Estate - EA 28/01/03
- System 1-5 and 7-12 Areas y DEP 06/95
- Clearing Regulations - Environmentally Sensitive Areas - DOE 30/5/05
- Dumbleyung Kukerin 1.4m Orthomosaic - DLI 02 (Image)
- Wagin 50cm Orthomosaic - DLI06 (Image)
- Corrigin South 1.4m Orthomosaic - DOLA 00 (Image)

(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 three hydrographic catchment areas, the Peel Estuary-Murray River, the Hardy Estuary-Blackwood River and the Hardy Estuary-Northern Arthur River.

The proposed clearing on the roadsides may cause some short term localised surface water sedimentation during works. However these issues should be minimised through putting in place appropriate roadside infrastructure such as table drains and culverts.

The proposed clearing for extractive industry may cause some short term surface water sedimentation, however the rehabilitation of the gravel pits once works are completed should minimise long term degradation of surface water.

Methodology GIS database:

- Hydrographic Catchments, Catchments - DoE 3/4/03

(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

Due to the scale and nature of the proposal, the clearing is unlikely to exacerbate the incidence or intensity of flooding.

Methodology GIS databases:
 - Topographic Contours, Statewide DOLA 12/09/02

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

One submission was received in relation to the proposal. The submitter requests the preparation of a roadside vegetation management plan, which is to include alternatives to the clearing, and suggests the proposal is contrary to the EPA's Position Statement No. 2 - Environmental Protection of Native Vegetation in Western Australia. There is no requirement for the proponent to prepare a vegetation management plan and a plan is not needed for assessment of the proposal. It is recognised that significant clearing of native vegetation has already occurred in the agricultural area which has led to a reduction in biodiversity. To mitigate any potential impacts of the clearing on remnant vegetation, while acknowledging the need to maintain and upgrade roads, the proposed clearing will be carried out in accordance with a condition imposed on the permit requiring that clearing of vegetation be avoided, and where this is not possible, minimised. In addition, to address the loss of vegetation within a highly cleared landscape, a condition has been imposed to offset the values of the area to be cleared through the revegetation of gravel extraction sites.

There is one Native Title Claim over the area under application. The Department of Environment and Conservation's advertising of the application in the West Australian newspaper constitutes legal notification of the native title representative body for the purpose of the future act procedures under the Native Title Act 1993. No response was received from the representative body.

There are two Aboriginal Sites of Significance listed within the areas proposed to be cleared, the permit holder will be notified of their obligations in the cover letter to this permit.

Methodology Submission TRIM ref HD26185
 GIS Databases:
 - Native Title Claims - DLI 07/11/05
 - Aboriginal Sites of Significance - DIA

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Extractive Industry	Mechanical Removal		Grant	Narrogin Valley Rd Gravel Pit Reserve 21317
Extractive Industry	Mechanical Removal		Grant	Contine Rd Gravel Pit Reserve 32818
Extractive Industry	Mechanical Removal		Grant	Narrakine Sth/Contine Rd Gravel Pit 1 Reserve 20020
Extractive Industry	Mechanical Removal		Grant	Narrakine Sth/Contine Rd Gravel Pit 2 Reserve 11658
Extractive Industry	Mechanical Removal		Grant	Graham Rd Gravel Pit Reserve 11615
Extractive Industry	Mechanical Removal		Grant	Birdwhistle Rd Gravel Pit 3 Reserve 29907
Extractive Industry	Mechanical Removal		Grant	Birdwhistle Rd Gravel Pit 2 Reserve 21066
Extractive Industry	Mechanical Removal		Grant	Birdwhistle Rd Gravel Pit 1 Reserve 13343
Road construction or maintenance	Mechanical Removal	10	Grant	Recommendation to grant clearing permit subject to conditions relating to flora, fauna, weeds, dieback, revegetation and exclusion zones.
Road construction or maintenance	Mechanical Removal		Grant	Armstrong Rd
Road construction or maintenance	Mechanical Removal		Grant	Birdwhistle Rd
Road construction or maintenance	Mechanical Removal		Grant	Blights Rd
Road construction or maintenance	Mechanical Removal		Grant	Boxsell Rd
Road construction or maintenance	Mechanical Removal		Grant	Cannell Rd
Road construction or maintenance	Mechanical Removal		Grant	Chomley Rd

maintenance Road Mechanical construction Removal	Grant	Clayton Rd
or maintenance Road Mechanical construction Removal	Grant	Cornini Rd
or maintenance Road Mechanical construction Removal	Grant	Condon Rd
or maintenance Road Mechanical construction Removal	Grant	Congelin NGN Rd
or maintenance Road Mechanical construction Removal	Grant	Cooraminning Rd/ McKenzie Rd
or maintenance Road Mechanical construction Removal	Grant	Cowcher Rd
or maintenance Road Mechanical construction Removal	Grant	Crooked Pool Rd
or maintenance Road Mechanical construction Removal	Grant	NGN Dongolocking Rd
or maintenance Road Mechanical construction Removal	Grant	Dwelyerdine Rd
or maintenance Road Mechanical construction Removal	Grant	Graham Rd
or maintenance Road Mechanical construction Removal	Grant	Flavel Rd
or maintenance Road Mechanical construction Removal	Grant	Halls Rd
or maintenance Road Mechanical construction Removal	Grant	Higham Rd
or maintenance Road Mechanical construction Removal	Grant	Highbury East Rd
or maintenance Road Mechanical construction Removal	Grant	Highbury South Rd
or maintenance Road Mechanical construction Removal	Grant	Katta Rd
or maintenance Road Mechanical construction Removal	Grant	Kenny Rd
or maintenance Road Mechanical construction Removal	Grant	Lange Rd
or maintenance Road Mechanical construction Removal	Grant	Manaring
or maintenance Road Mechanical construction Removal	Grant	Boundain Nth Rd
or maintenance Road Mechanical construction Removal	Grant	Michael Brown Rd
or maintenance Road Mechanical construction Removal	Grant	Yilliminning Rd (aka Narrogin-Harrismith Rd)
or maintenance Road Mechanical construction Removal	Grant	O'Dea

or maintenance Road	Mechanical construction Removal	Grant	Highbury West Rd
or maintenance Road	Mechanical construction Removal	Grant	Rushy Pool Rd
or maintenance Road	Mechanical construction Removal	Grant	McDougalls Rd
or maintenance Road	Mechanical construction Removal	Grant	Mokine Rd
or maintenance Road	Mechanical construction Removal	Grant	Narrakine South Rd
or maintenance Road	Mechanical construction Removal	Grant	Narrogin Valley Rd
or maintenance Road	Mechanical construction Removal	Grant	O'Neil Rd
or maintenance Road	Mechanical construction Removal	Grant	Pethybridge Rd
or maintenance Road	Mechanical construction Removal	Grant	Piesseville-Tarawonga Rd
or maintenance Road	Mechanical construction Removal	Grant	Quarry Rd
or maintenance Road	Mechanical construction Removal	Grant	Quartermaine Rd
or maintenance Road	Mechanical construction Removal	Grant	Rosedale Rd
or maintenance Road	Mechanical construction Removal	Grant	Simmons Rd
or maintenance Road	Mechanical construction Removal	Grant	Tarwonga Rd
or maintenance Road	Mechanical construction Removal	Grant	Wagin-Wickepin Rd
or maintenance Road	Mechanical construction Removal	Grant	Wandering-Narrogin Rd
or maintenance Road	Mechanical construction Removal	Grant	Wangeling Gully Rd
or maintenance Road	Mechanical construction Removal	Grant	Whinbin Rock Rd
or maintenance Road	Mechanical construction Removal	Grant	Wickepin - Harrismith Rd
or maintenance Road	Mechanical construction Removal	Grant	Yarrabee Rd

5. References

Clearing Assessment Unit's biodiversity advice for land clearing application. Advice to Director General, Department of Environment and Conservation (DEC), Western Australia. TRIM ref DOC5308.

DAFWA Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of

Agriculture and Food Western Australia. DoE TRIM ref IN24785.

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.

EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority.

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., 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.

