



1. Application details

1.1. Permit application details

Permit application No.: 2023/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: Shire of Wagin

1.3. Property details

Property: LOT 1103 ON PLAN 167559 (Lot No. 1103 BADGARNING WAGIN 6315)
 Local Government Area: Shire Of Wagin
 Colloquial name: Construction of Dam

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2		Mechanical Removal	Dam 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
Pre-European Veg: (Veg assoc - 1083) Succulent steppe with open woodland & scrub; wandoo, salmon gum & Allocasuarina obesa over teatree & sapphire	A site visit of the proposed clearing area noted that vegetation within this area is in completely degraded - good condition (Keighery, 1994). The notified area had patchy vegetation and lacked woodland structure. There was very little understorey observed and only sparse mid-storey species. Vegetation was predominantly an upper storey of Red Morrel (Eucalyptus longicornis). Species noted were Gastrolobium sp. and possibly Dodonaea humifusa.	Degraded; Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation condition was determined from a site visit in December 2007.

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**

A site visit of the proposed clearing area noted that vegetation within this area is in completely degraded - good condition (Keighery, 1994). The application area had patchy vegetation and lacked woodland structure. There was very little understorey observed and only sparse mid-storey species. Vegetation was predominantly an upper storey of Red Morrel (Eucalyptus longicornis).

The vegetation proposed to be cleared is part of a continuous remnant of bushland which contains the North Wagin Nature Reserve. Signs of burnt trees and leaf litter indicated that a fire had gone through this area within the last year. A site visit (2007) observed that vegetation within the Nature Reserve was in better condition than that noted within the proposed clearing area. The Nature Reserve was still relatively sparse, with little ground cover, due to the fire, however there was a denser mid storey section with a richer variety of species.

The application area on it's own, is not considered to comprise a high level of biological diversity, however, when viewed in a local and regional context it can be considered to comprise a higher level than surrounding areas. As the vegetation remaining within the Shire is around 8% and the surrounding area is heavily cleared for agricultural use, the proposed clearing represents one of the few remaining areas of continuous bushland within the region.

To mitigate the loss of vegetation within this highly cleared region it is recommended that if a permit be granted, conditions should be placed on the permit to ensure an offset plan is developed by the Shire and approved by the Department's CEO prior to the commencement of any clearing under this permit.

Methodology Keighery, 1994
Shepherd et al, 2001
Site Visit, 2007
GIS Databases:
- Wagin 50cm Orthomosaic - Landsgate06
- CALM Managed Lands and Water
- SAC Bio datasets accessed 23 November 07

(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

Within the local area (10 km radius) there have been four recorded sightings of threatened fauna.

- * *Ardeotis australis* (Australian bustard)
- * *Charadrius rubicollis* (Hooded Plover)
- * *Pomatostromus superciliosus ashbyi* (White-browed babbler)
- * *Phascogale calura* (Red-tailed phascogale)

The red-tailed phascogale are known to prefer long unburnt Wandoo and Sheoak woodlands with continuous canopy. Vegetation within the proposed clearing has been burnt recently, is degraded (Keighery, 1994) and patchy and predominantly has juvenile Red Morrel (*Eucalyptus longicornis*) trees. Given these factors and that there is a Class A Nature Reserve of better condition vegetation adjacent to the application area, it is unlikely that vegetation within the proposed clearing area would be significant for this species.

The Hooded Plover is generally found within habitat alongside salt lakes or coastal areas and is unlikely to utilise the proposed clearing area. The Australian bustard prefers more open areas, however requires a grassy understorey, making the application area unsuitable habitat for this species. The white-browed babbler is known to inhabit eucalypt forests and woodlands, foraging on or near the ground. Given that a Class A nature Reserve lies adjacent to the proposed clearing area with better condition vegetation it is unlikely that the proposed area is significant habitat for this species.

The Interim Biogeographic Regionalisation report (Beecham, 2001) on the sub region the application is within (AW2) lists the Brush-tailed Phascogale as having a threatened status in this subregion. This species has a large home range (20-40ha) and has been observed within dry sclerophyll forests and open woodlands containing hollow-bearing trees with sparse groundcover. The area under application provides similar vegetation to that preferred by this species, however a site visit (2007) found that there were few possible nesting areas. Given the large home range and lack of nesting opportunities it is unlikely that the proposed area provides significant habitat for this species.

Given the above factors it is unlikely that clearing as proposed is at variance to this principle.

Methodology Site Visit, 2007
Naturebase, accessed 18 Jan 2008
Keighery, 1994
Beecham, 2001
GIS Databases:
- Wagin 50cm Orthomosaic - Landsgate06
- Sac Bio datasets accessed 23 November 07
- CALM Managed Lands and Water

(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 no known records or Declared Rare Flora within the local area (10km radius). There are 7 known records of the Priority four *Caladenia integra* within a 10km radius of the proposed clearing area. This species is known to prefer habitat with granite outcrops and rocky slopes and is therefore unlikely to occur within the notified area.

Given the size of the application area, condition of the vegetation within the area and the information provided above, the proposed clearing area is unlikely to be necessary for the continued existence of flora.

Methodology GIS Layer:
- Wagin 50cm Orthomosaic - Landsgate06
- Sac Bio datasets Accessed 23 November 07

- Pre-European vegetation - DA 01/01
- Soils, Statewide - DA 11/99

(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 threatened ecological communities within a 10km radius of the proposed clearing area. Clearing within the proposed area is therefore not likely to be at variance to this principle.

Methodology GIS Layer:
 - Wagin 50cm Orthomosaic - Landsgate06
 - Sac Bio datasets Accessed 23 November 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 is at variance to this Principle**

	Pre-European (ha)*	Current Extent Remaining(ha)*	(%)*
IBRA Bioregion: Avon Wheatbelt	9,517,117.35	2,992,934.47	15.4
Sub Region:AW2	1,468,711.25	255,829.71	8.5
Shire: Wagin***	193,910	15,847	8.2
Beard Unit: 1083	10,380.52	2,197.13	21.2

*Shepherd et al. 2001

***Within the Intensive Land Use Zone (Inside the Clearing Line)

The State Government is committed to the National Objectives Target for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-1750 (EPA, 2000). Beyond this value, species extinction is believed to occur at an exponential rate and any further clearing may have irreversible consequences for the conservation of biodiversity.

As vegetation representation within the application area retains less than 30% pre-European vegetation and is below the National Objective Target for Biodiversity Conservation, vegetation within the proposed clearing area is seen as a significant remnant of native vegetation in an area that has been extensively cleared.

The proposed clearing area is small (2ha) and the condition of vegetation was observed during a site visit (2007) to be in completely degraded - good condition. Despite the small size and condition of vegetation, an area in which the Shire retains only 8.2% of vegetation, all native vegetation is considered to be significant.

The application area also lies within the agricultural zone of EPA position statement No. 2. This area is recognised as being stressed by past agricultural clearing practices and further clearing for agricultural purposes is not supported. The purpose of this clearing application is for Dam construction within the Town of Wagin and is may be outside the parameters of this position statement.

Given the above, the proposed clearing is at variance to this principle. To mitigate the loss of vegetation within this highly cleared region it is recommended that if a permit be granted, conditions should be placed on the permit to ensure an offset plan is developed by the Shire and approved by the Department's CEO prior to the commencement of any clearing under this permit.

Methodology Site Visit, 2007
 EPA, (2000)
 Shepherd et al. (2001)
 GIS Databases:
 - Pre-European Vegetation - DA 10/01
 - Interim Biogeographic Regionalisation of Australia - EA 18/10/00
 - EPA Position Statement No. 2

(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 proposed clearing is located within 5kms of three minor non-perennial watercourses. They are situated 1.4km north, 1km south and 830m east of the application area.

Given the topography and shallow gradients of the local area (280-300m AHD), and the small nature of the area to be cleared, it is unlikely that the proposed clearing would be at variance to this principle.

- Methodology** GIS Databases:
- Wagin 50cm Orthomosaic - Landsgate06
 - Hydrography, linear - DOE 1/2/04
 - Topography contours, Statewide - DOLA 12/09/02
 - Geodata, Lakes

(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 topography of the region is relatively flat with an elevation rising from 280-300 AHD, and has a mean annual rainfall of 500mm. Groundwater salinity has been mapped between 14000-35000mg/L TDS (Total Dissolved Solids) in the north section of the proposed clearing area and >35000 in the southern section, which is a high level of salinity. In a DAFWA (2005) study most groundwater levels within the Wagin shire are 2-4m below the surface. The hydrogeology of the application area consists of low permeability, fractured and weathered rocks of granitoid.

A site visit (2007) did not observe any effects of dryland salinity within, or surrounding, the proposed clearing area. A dam adjacent to the proposed clearing has not shown signs of increased salinity during water monitoring programs.

Although the application area lies within a regional context of increasing salinity issues it is unlikely, given the small amount of vegetation to be cleared, that clearing within the proposed area will further add to the local salinity issues.

Although the soil type and hydrogeology appears likely to suffer from water erosion and waterlogging, a site visit (2007) showed that a drainage system running through the proposed clearing area mitigated the effects of erosion and waterlogging.

Given the above factors it is unlikely that the proposed clearing would be at variance to this principle.

- Methodology** DAFWA, 2005
Site Visit, 2007
GIS Databases:
- Wagin 50cm Orthomosaic - Landsgate06
 - Hydrogeology, Statewide - DOW
 - Groundwater Salinity, Statewide - DO 11/99
 - Rainfall, Mean Annual - BOM 30/09/01
 - Topography 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 may be at variance to this Principle**

The area proposed to be cleared lies adjacent to North Wagin Nature Reserve. This conservation area is an A Class Nature Reserve for the purposes of conservation of flora and fauna. A Site Visit (2007) to the southern section of this Nature reserve observed vegetation in very good condition (Keighery, 1994). Although vegetation within the proposed clearing area is in completely degraded - good condition (Keighery, 1994) it is likely that it would still be providing some buffering functions to the Nature Reserve.

Other conservation areas within the local area are unlikely to be affected due to the small size (2ha) of the proposed clearing and the distance between these areas.

It is recommended that if the permit is granted a weed management condition be placed upon the permit to prevent the spread of weeds into the Nature Reserve.

- Methodology** Keighery, 1994
GIS Databases:
- Wagin 50cm Orthomosaic - Landsgate06
 - CALM managed lands and water - CALM 1/07/05 (category)
 - SAC Biodatasets accessed 22 Jan 08

(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 proposed clearing site lies within the Hardy Estuary-Coblinine River Catchment and the Blackwood River catchment basin. The region is of low relief (280-300m AHD) and has an annual rainfall of 500mm. The groundwater of the local area is already rated as highly saline (>35000). In some areas within the Wagin townsite groundwater levels are as close as 2m from the surface (DAFWA, 2005).

Due to the small area (2ha) proposed to be cleared in relation to the topography, it is unlikely that the clearing of native vegetation will cause further deterioration in the quality of surface water or groundwater within the local area.

Methodology DAFWA (2005)

GIS Layer:

- Wagin 50cm Orthomosaic - Landsgate06
- Hydrography catchments - Basin DOW
- Hydrography catchments - catchment DOW
- Rainfall, Mean Annual - BOM 30/09/01
- Topography contours, statewide - DOLA 12/09/02
- Groundwater salinity, Statewide - 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 soil type and hydrogeology within the proposed clearing area appears likely to suffer from water erosion and waterlogging, however, a site visit (2007) showed that a drainage system running through the proposed clearing area mitigated the effects of erosion and waterlogging.

Given the above and the small scale (2ha) of the proposed clearing, it is unlikely that flooding will be caused or exacerbated within the local area.

Methodology Site Visit (2007)

DAFWA (2005)

GIS Databases:

- Hydrogeology, Statewide - DOW

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

Comments

A submission was received by the Wagin / Woodanilling Landscape Zone, supporting the shire in expanding their water storage capacity but to take in mind when granting or refusing the Wagin / Woodanilling Landscape Zone and Wildlife Research and Management Pty Ltd Phascogale EcoFund project supported by the Shire.

A response was received by the Shire of Wagin to a letter from DEC asking if other land had been considered and what the storage tank would be used for. The Shire of Wagin advised that other land was unlikely to be made available by private landholders and would be costly to purchase. The Storage dam is for the purpose of augmenting current water supplies and for use on ovals and recreation grounds.

Methodology GIS:

- Native Title Claims - DLI 07/11/05
- Environmental Impact Assessment
- Submission LCDC (2007)

4. Assessor's comments

Purpose	Method	Applied	Comment
---------	--------	---------	---------

area (ha)/ trees

Dam construction or removal maintenance	Mechanical	2	Principles (a) and (h) maybe at variance to the proposed clearing. Principle (e) is at variance to the proposed clearing.
---	------------	---	---

5. References

- Beech, 2001, A Biodiversity Audit of Australia's 53 Biogeographical Subregions in 2002, Avon Wheatbelt (AW2 - Re-juvenated Drainage subregion), DEC.
- DAFWA, 2005, Department of Agriculture and Food Western Australia 2007. Groundwater study of the Wagin townsite. Site viewed on 23/11/07 at http://www.agric.wa.gov.au/content/lwe/salin/townsal/tr223_index.htm
- Department of Conservation and Land Management (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical

Subregions.

- 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.
- 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.
- Site Visit, 2007, Conducted by DEC on 13 December 2007, TRIM ref DOC 42196

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)