



## 1. Application details

### 1.1. Permit application details

Permit application No.: 2751/1  
 Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: MR Malcolm Hayes

### 1.3. Property details

Property: LOT 10 ON PLAN 19723 (House No. 10056 SOUTH WESTERN COOKERNUP 6220)  
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Local Government Area: Shire Of Harvey  
 Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
	150	Mechanical Removal	Cropping
		Mechanical Removal	Cropping

## 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 999: Medium woodland; marri.	The application is for the clearing of 150 native trees over agricultural land for the construction of a centre pivot irrigator.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation condition was determined from aerial photos (Swan Coastal Plain South 40cm Othomosaic - Landgate 2005) and a Site Visit conducted 22/12/2008 TRIM ref DOC73395.
Heddle Vegetation Complex: Guildford.			

## 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 application is for the clearing of 150 native trees within land used for agricultural purposes for the construction of a centre pivotal irrigator. Whilst the application lies within a highly cleared landscape with paddock trees being the only vegetation remaining, the vegetation under application is degraded as a result of the land uses, and not considered to be of high biological diversity. The clearing as proposed is not likely to be at variance to this principle.

**Methodology** GIS database:  
 - SAC Biodatasets - accessed 4 Nov 08  
 - NLWRA, Current Extent of Native Vegetation 20 Jan 2001

### (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**  
 Whilst 4 species of rare fauna and 3 priority species were recorded within the local (10km radius) area, the vegetation under application is degraded, with the entire application area being currently used of the agriculture. More significant fauna habitat exists less then 3km east of the application area.

**Methodology** GIS database:  
 - CALM Managed Lands and Waters - CALM 01/06/05  
 - SAC Biodatasets - accessed 11 Feb 08

**(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**

Although 3 rare and 8 priority flora species have been recorded within the local (10km radius) area, the vegetation under application is degraded, with the entire area being used for agriculture. It is therefore not likely to be necessary for the continued existence of these species.

**Methodology GIS database:**

- Heddle Vegetation Complexes - DEP 22/06/95
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 4 Nov 08

**(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**

Three threatened ecological communities are known to occur within the local (10km radius) area, however the closest is 3km north and therefore the application falls outside the buffers of these records. The degraded nature of the vegetation under application adds to the unlikelihood that it is necessary for the maintenance of a threatened ecological community. The proposed clearing is therefore not likely to be at variance to this principle.

**Methodology GIS Database:**

- SAC Biodatasets - accessed 4 Nov 08
- Heddle Vegetation Complexes - DEP 22/06/95
- Pre European Vegetation - DA 01/01

**(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**

Although the application is within a highly cleared Beard Vegetation Association (999 - 10.8% remaining), the degraded nature of the vegetation reduces its significance as a remnant.

The proposed clearing is within an extensively cleared landscape, with less than 25% of native vegetation remaining within a 10km radius of the application, most of which lies to the east within the Dwellingup State Forest. Scattered paddock trees therefore form significant vegetation in this highly cleared landscape. Additionally, the Swan Coastal Plain IBRA Bioregion has 38% pre-European extent of native vegetation remaining. The proposed clearing of 150 native trees therefore may be at variance to this principle.

In order to mitigate the potential environmental impacts further clearing may have in this already heavily cleared landscape, revegetation conditions will be placed on the permit.

**Methodology Shepherd (2007)  
Shepherd et al (2001)**

**GIS Databases:**

- Heddle Vegetation Complexes - DEP 22/06/95
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Local Government Authorities - DLI 8/07/04
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 4 Nov 08
- NLWRA, Current Extent of Native Vegetation 20 Jan 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 at variance to this Principle**

A minor perennial watercourse is mapped within the application area. The vegetation along this is already degraded from the previous and current agriculture occurring at the site.

A major drain occurs approximately 30m from the proposed clearing.

The entire application area is also mapped as being a multi-use Palusplain. As the area has been historically used for agriculture the significance of this as a wetland is greatly reduced.

**Methodology GIS Databases:**

- Clearing Regulations, Environmentally Sensitive Areas 30 May 2005
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC 11/04/07

**(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**

As the entire application area is currently used for agriculture, removal of 150 trees as proposed is not likely to cause appreciable land degradation. The acid-sulfate soil risk is medium-low and groundwater salinity 500-100mg/L.

The most significant land degradation risk associated with this proposal, which is located within the gazetted Peel Harvey Catchment (PHC), is eutrophication occurring as a result of nutrient export. The Minister for the Environment has previously imposed a moratorium on agricultural clearing and drainage in the PHC to prevent the increase of nutrient export (DAFWA 2009). However, the proposal is likely to reduce nutrient export, and the revegetation conditions imposed on the permit will further ameliorate the impacts of the clearing.

The Department of Food and Agriculture (DAFWA) has evaluated the performance of both surface and centre pivot irrigation systems on similar soil types (DAW45) to the area under application. Measurements of water use, fertiliser application pasture production animal performance and nutrient export were taken over two irrigation seasons (DAFWA 2009).

There was no measurable loss of nutrients (N or P) from the Centre Pivot Irrigation (CPI) site in either of the two seasons of measurement. It is also relevant that there was no leaching below the root zone in either the surface or the CPI plots during the two seasons of measurement (DAFWA 2009).

Therefore the proposed clearing is unlikely to be at variance with principle for eutrophication and any other land degradation.

**Methodology DAFWA (2009)**

GIS database:

- Acid Sulfate Soil Risk Map, Swan coastal Plain - DEC 07/08/06
- Hydrography, linear - DOW 13/7/06
- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide DA 11/99

**(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, Dwellingup State Forest, is 3km east of the application area. The 150 native trees under application are not likely to be providing ecological linkages between remnants of vegetation, and the clearing as proposed is unlikely to impact on the environmental values of nearby conservation areas. The proposed clearing is therefore not likely to be at variance to this principle.

**Methodology GIS Databases:**

- CALM Managed Lands and Waters - CALM 01/06/05

**(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 may be at variance to this Principle**

The application is within the Peel-Harvey Coastal Catchment, for with there is an Environmental Protection policy (1992). The Peel-Harvey estuary is under pressure from eutrophication as a result of broad scale clearing and agricultural regimes. However, the purpose of the proposed clearing is to switch from flood irrigation to central pivot irrigation - a system with the potential to have reduced offsite nutrient exports (PHCC 2008).

The most significant land degradation risk associated with this proposal, which is located within the gazetted Peel Harvey Catchment (PHC), is eutrophication occurring as a result of nutrient export. The Minister for the Environment has previously imposed a moratorium on agricultural clearing and drainage in the PHC in order to prevent an increase in nutrient exports (DAFWA 2009). However, this proposal is likely to result in reduced nutrient export, and revegetation conditions will further reduce the impacts on water quality.

The Department of Food and Agriculture (DAFWA) has evaluated the performance of both surface and centre pivot irrigation systems on similar soil types (DAW45) to the area under application. Measurements of water use, fertiliser application pasture production animal performance and nutrient export were taken over two irrigation seasons (DAFWA 2009).

There was no measurable loss of nutrients (N or P) from the Centre Pivot Irrigation (CPI) site in either of the two seasons of measurement. It is also relevant that there was no leaching below the root zone in either the surface or the CPI plots during the two seasons of measurement (DAFWA 2009).

A major drain occurs approximately 30m from the proposed clearing, however the extent of the clearing at this site if the removal of a few paddock trees, and thus not likely to be significantly contributing to the buffering of this watercourse. The watercourse appears to be well vegetated outside the clearing area, and this should provide a buffer for the drain from deterioration of water quality.

A minor perennial watercourse passes through the application area, however it is degraded as a result of agriculture. This drains into the Harvey River, 5km west of the application area.

The entire application area is also mapped as being a multi-use Palusplain. The area has been historically used for agriculture, with flood irrigation in use, and the clearing is for the construction of pivotal irrigators which should reduce the volume of water leaving the clearing area, and thus reduce impacts to surface and underground water in the area.

**Methodology** DAFWA (2009)  
PHCC (2008)

GIS database:

- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC 11/04/07
- Hydrography, linear - DOW 13/7/06

**(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 land within and surrounding the proposed clearing is currently flood irrigated for agriculture. As the clearing is for the construction of pivotal irrigators, the incidence of artificial flooding will be reduced as a result. As the area is a palusplain wetland it is subject to inundation, however the removal of 150 trees is not likely to exacerbate this flooding. The clearing as proposed is not likely to be at variance to this principle.

**Methodology** GIS database:  
- Hydrography, linear - DoW 13/7/06

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

**Comments**

The applied area lies within the Harvey RIWI Irrigation District. The proponent holds 3 water licences issued by Harvey Water. These licences entitle the proponent to 504, 65 and 90 megalitres of water for irrigation.

The proponent has stated that they wish to revegetate along a watercourse that lies to the north of the property to offset the proposed clearing.

The area under application is within the gazetted Peel Harvey Catchment. On 4 January 1989 the Minister for Environment approved a management strategy for the Peel Inlet and Harvey Estuary. This was followed in October of 1991 by conditions that were placed on the Minister for Agriculture, Minister for Transport (Read current Minister for Planning and Infrastructure) and the Minister for Waterways (read current Minister for Environment). Condition 5 of this ministerial statement imposed a moratorium on land clearing in the gazetted Peel Harvey Catchment in order to prevent an increase in nutrient exports, until such time as the Minister for Environment was satisfied that land clearing within the catchment was environmentally acceptable. However, the proposal is likely to result in a reduction of nutrient export, and revegetation conditions imposed on the permit will further ameliorate the affects of the clearing.

The Peel-Harvey Catchment Council have provided a submission which states they are supportive of the use of central pivot irrigation and the clearing of 150 trees, provided revegetation of at least an equivalent number of trees is required as a condition of the permit (PHCC 2008).

**Methodology** - Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992  
- PHCC (2008)

#### **4. Assessor's comments**

**Comment**

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and the proposed clearing is at variance to Principle (f), may be at variance to Principles (e) and (i), and is not likely to be at variance to the remaining clearing Principles.

#### **5. References**

- DAFWA (2009) Land Degradation Advice and Assessment Report for clearing permit application CPS 2775/1. Received 12/02/09. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia (TRIM Ref. DOC76348).
- EPA (1992) Environmental Protection (Peel Inlet-Harvey Estuary) Policy 1992. Western Australian Government Gazette, 11 December, 1992, pp 1-9.

- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- PHCC (2008). Submission Received from Peel Harvey Catchment Council regarding CPS/1 2751/1. TRIM ref DOC73391.
- Shepherd, D.P. (2007). 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.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001a) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia (updated 2005).

## 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)

