



1. Application details

1.1. Permit application details

Permit application No.: 513/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Stuart Ian Donaldson

1.3. Property details

Property: LOT 12961 ON PLAN 211103 (MANJIMUP (S))
LOT 12033 ON PLAN 201643 (MANJIMUP (S))
Local Government Area: Shire Of Manjimup
Colloquial name: Richardson Road Locations 8910, 12961 and 12033

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
18		Mechanical Removal	Grazing & Pasture
		Mechanical Removal	Grazing & Pasture
		Mechanical Removal	Grazing & Pasture

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
<p>Beard (Veg Ass.23): Low woodland; jarrah-banksia Mattiske:</p> <p>BROAD SWAMPS (S4) - Low woodland of Eucalyptus marginata subsp. marginata-Nuytsia floribunda with some Melaleuca preissiana and closed heaths of Myrtaceae spp. on broad drainage lines in hyperhumid and perhumid zones.</p> <p>BLACKWATER (BWp) - Mosaic of low open woodland of Melaleuca preissiana, low open woodland of Melaleuca cuticularis, open heath of Myrtaceae-Proteaceae spp. and sedgelands of Restionaceae spp. on low lying flats in hyperhumid and perhumid zones.</p>	<p>Lot 12961 (western corner) Note: ESA covering majority of the area under application</p> <p>- the vegetation condition varied between very good and excellent (Keighery, BJ 1994). The area proposed for clearing consisted of open Jarrah-marri forest and extensive heath communities. Corymbia calophylla dominated the forest with other species including Persoonia longifolia (snottygobble), Banksia grandis (bull banksia), with a dense understorey of Bossiaea linophylla, Acacia spp., Xanthorrhoea spp., Hakea spp.</p> <p>The sedgelands and heath communities included Melaleuca priessiana (moonah), Kunzea recurva, Myrtaceae-Proteaceae spp.</p> <p>There was some weed invasion, pasture (edge effects) from the existing cleared areas and none was fenced from the cattle present. In some areas close to the tributary, the dense understorey seemed to be deterring the cattle from walking too far in and disturbing the vegetation.</p>	<p>Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)</p>	<p>While conducting the Site Visit, the proponent told the DoE officers he intended on retaining the larger trees, and some small stands of vegetation to act as shelter for the cattle.</p> <p>He was also willing to impose a 10m vegetated buffer on all watercourses on the property.</p> <p>Mrs Donaldson confirmed that all the proposed clearing falls within Lot 12961 and Lot 12033. There is no clearing proposed for Lot 8910.</p>

Beard (Veg Ass.23): Low woodland; jarrah-banksia
Mattiske:
BLACKWATER (BWp) - Mosaic of low open woodland of Melaleuca preissiana, low open woodland of Melaleuca cuticularis, open heath of Myrtaceae-Proteaceae spp. and sedgelands of Restionaceae spp. on low lying flats in hyperhumid and perhumid zones.

Lot 12961 (eastern corner)
The vegetation condition was considered to vary between very good and excellent (Keighery, BJ 1994). There was some encroachment of weeds, pasture species, along the edges of the vegetation. The woodland was dominated by Corymbia calophylla, and Eucalyptus marginata, with scattered Melaleuca spp and Agonis flexuosa (peppermint) . Understorey species included Pteridium esculentum (bracken), Macrozamia riedlei (zamia), Hibbertia spp.

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)

Mattiske:
BROAD SWAMPS (S4) - Low woodland of Eucalyptus marginata subsp. marginata-Nuytsia floribunda with some Melaleuca preissiana and closed heaths of Myrtaceae spp. on broad drainage lines in hyperhumid and perhumid zones.
BLACKWATER (BWp) - Mosaic of low open woodland of Melaleuca preissiana, low open woodland of Melaleuca cuticularis, open heath of Myrtaceae-Proteaceae spp. and sedgelands of Restionaceae spp. on low lying flats in hyperhumid and perhumid zones.

Lot 12033
Note: ESA covering majority of area under application:
The vegetation condition was considered to be very good on the western side of Gould Rd and excellent on the eastern side (Keighery, BJ 1994). Similar species were present as identified on Lot 12961 in the C4 and BWp Mattiske vegetation types.

Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)

Mattiske:
GRANITE VALLEYS (S1) - Tall open forest of Eucalyptus diversicolor-Corymbia calophylla on slopes with some Eucalyptus patens and Eucalyptus megacarpa on valley floors in hyperhumid and perhumid zones.

Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)

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 at variance to this Principle**

The vegetation proposed for clearing was rated to vary between very good and excellent condition (Keighery BJ, 1994) by DoE officers while conducting the Site Visit. The Site Report identified the vegetation to be a good representation of the Mattiske related complexes, Broad Swamps (S4), Balckwater (BWp) and Collis (COY1).

Although the vegetation was not fenced off from the existing cattle, the dense vegetation did seem to deter the stock. Pasture species were evident throughout the property however were mostly confined to the existing cleared areas and around the edges of the native vegetation.

The areas proposed for clearing are located within, or close to both watercourses and wetlands.

Advice from the Department's Wetlands Program was received and the following recommendations made: 'The wetland areas located at Lot 12961 and 12033 Richardson Rd, Northcliffe are identified in the Walpole River Suite which is widely dispersed throughout the Augusta to Walpole region and occurs in a variety of areas. Many of the wetlands in the suite have been cleared for rural activities. These wetlands are restricted to

the south coast of Western Australia due to the combination of precipitation/evaporation conditions, and as such, they are an important indicator of the climatic difference between the Swan Coastal Plain and the southern coastal plain between Augusta and Walpole. In the Northcliffe area, researchers have identified endemic and new species of invertebrates. In addition, the Northcliffe area also contains habitat for the frog species *Geocrinia lutea*, which is extremely restricted in occurrence (V & C Semeniuk Research Group, 1997). The wetland areas located at Lots 12961 and 12033 Richardson Rd, Northcliffe are identified in the Walpole River Suite, of which wetlands are recognised for representativeness, their faunal values and hydrological and ecological linkages. In addition, the high naturalness values of the wetland areas on Lots 12961 and 12033 have been demonstrated with a vegetation condition of Very Good to Excellent. From the available information, the DoE considers that these wetland areas possess the values of Conservation category wetlands. The EPA states in Environmental Offsets Preliminary Version 2 Position Statement No. 9 (EPA, 2004) that Conservation category wetlands are recognised as 'critical assets', which represent the most important environmental assets in the State that must be fully protected and conserved.'

The property is also close to both CALM Managed Land / Water areas and Registered National Estates. Ecological linkages, of both vegetation and water, to these areas exist within the areas under application and would be lost should the application be approved.

CALM provided the Department with advice recommending any identified riparian vegetation be protected from clearing to maintain stream quality and the habitats associated with the riparian areas.

The Department believes the areas proposed for clearing, that have been identified as wetlands, in both the western corner of Lot 12961 and the eastern corner of Lot 12033 have a high level of biodiversity and should be retained.

Given the above information, the Department concludes the proposal is at variance to this principle.

Methodology DoE Wetlands Program Memo 2005
CALM Advice 2005

(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**

CALM advice was received on 30/06/05 and provided the following comments:

"The proposed vegetation clearing is likely to further fragment and reduce local fauna habitat and may result in some localised disturbance to native fauna populations and their usual home range. However site photographs submitted by AGWA reveal that the vegetation proposed to be cleared does not appear to be optimal habitat for any local Threatened or Specially protected fauna taxa and therefore the clearing is unlikely to pose a significant impact on any of the listed fauna. To maximise stream quality and habitat associated with streams, clearing should not be permitted within an riparian zones. Provided any riparian vegetation is protected, this proposal is not likely to be at variance to this Principle."

As per the above comments from CALM, the Department does not believe the photographs submitted by AGWA to CALM are a good representation of the vegetation under application. The Department rated the condition to vary between Very Good and Excellent (Keighery, BJ 1994). It is for this reason the Department believes the vegetation under application may provide habitat to the species known to occur in the local area (10km radius).

The Department of Environment's Wetland Program provided advice on the areas under application identified as falling within the mapped Geomorphic Wetlands Augusta to Walpole. They provided the following advice:

'In the Northcliffe area, researchers have identified endemic and new species of invertebrates. In addition, the Northcliffe area also contains habitat for the frog species *Geocrinia lutea*, which is extremely restricted in occurrence (V & C Semeniuk Research Group, 1997)."

The Site Report rated the condition of the vegetation within these wetlands to vary between very good and excellent.

Given the above information the Department believes the vegetation under application may provide a significant habitat for fauna species known to occur in the local area, and therefore concludes the proposal may be at variance to this principle.

Methodology CALM Report 2005
Wetlands Program Memo 2005
Site Report 2005
Australian Frog Database

(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

Asplenium aethiopicum (Declared Rare Flora), commonly known as Forked Spleenwort, occurs 8km from the area under application and is vegetatively linked. There are no other known occurrences of DRF within the local area.

There are four Priority 3 species in the local area, however none are linked by vegetation. The closest is Lomandra ordii, which is 8.5km from the area under application.

CALM Report provided the following advice:

'A flora survey to determine the presence of any flora taxa of conservation significance would be desirable, but without additional justification would not be warranted, considering the size and fragmented nature of the clearing proposal and the fact that similar habitats appear to be well represented within the nearby Warren State Forest and D'Entrecasteaux National Park.'

Given the above information the Department believes the proposal is not likely to be at variance to this principle.

Methodology CALM Report 2005
GIS Database:
- Declared Rare and Priority Flora List - CALM 13/08/03

(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

CALM advice was received on the 30/06/05, and provided the following advice:
'There are no recorded occurrences of TEC's in the local area.'

Given the above information the Department believes the proposal is not likely to be at variance with this principle

Methodology CALM Report 2005
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 is not at variance to this Principle

The application is located in the Warren Bioregion in the Shire of Manjimup. The extent of native vegetation in these areas is 86.6% and 83% respectively (Shepherd et al. 2001). There is approximately 70% of native vegetation remaining in the local area. A large portion of this is made up of state forest, national park and timber reserve.

Both the Beard vegetation types and Mattiske vegetation complexes proposed for clearing have >60%. The Department of Natural Resources and Environment categorise vegetation types with more than 50% remaining as being of "Least Concern".

	Pre-European (ha)*	Current extent (ha)*	Remaining (%)*	Conservation** status
IBRA Bioregion - Warren***	836 270	724 014	86.6	Least Concern
Shire of Manjimup	705,670	591,748	83	Least Concern
Vegetation type:				
Beard: Unit 23	50 127	33 700	67.2	Least Concern
Mattiske:				
S4 Complex	15, 684	9 954	63.5	Least Concern
BWp Complex	325 413	287 703	88.4	Least Concern
S1 Complex	255 050	215 886	84.6	Least Concern

* (Shepherd et al. 2001)

** (Department of Natural Resources and Environment 2002)

*** Within the Intensive Landuse Zone

The Department concludes the proposal is not at variance to this principle.

Methodology Shepard et al. (2001)
Department of Natural Resources and Environment (2002)
GIS database:
- Mattiske Vegetation - CALM 24/3/98
- Interim Biogeographic Regionalisation of Australia - EM 18/10/00
- Pre European Vegetation - DA 01/01
- Local Government Authorities - DLI 8/07/04

(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**

Several 1st and 2nd order minor perennial streams are found on Lots 12961 and 12033. The streams are located within the areas proposed for clearing. They were flowing at the time of the inspection, however the area had experienced heavy rain in the previous few days.

Advice was sought from DoE's Wetlands Program, with the following recommendations being made:

'The wetland areas located at Lot 12961 and 12033 Richardson Rd, Northcliffe are identified in the Walpole River Suite which is widely dispersed throughout the Augusta to Walpole region and occurs in a variety of areas. Many of the wetlands in the suite have been cleared for rural activities. These wetlands are restricted to the south coast of Western Australia due to the combination of precipitation/evaporation conditions, and as such, they are an important indicator of the climatic difference between the Swan Coastal Plain and the southern coastal plain between Augusta and Walpole.

The Augusta to Walpole wetlands have been evaluated through a preliminary process (V & C Semeniuk Research Group, 1997), however, they have not been assigned management categories. The wetlands included in the study area have been assigned to a consanguineous suite which may provide an indication of regional significance and representativeness (Hill et al., 1996).

The wetland areas located at Lots 12961 and 12033 Richardson Rd, Northcliffe are identified in the Walpole River Suite, of which wetlands are recognised for representativeness, their faunal values and hydrological and ecological linkages. In addition, the high naturalness values of the wetland areas on Lots 12961 and 12033 have been demonstrated with a vegetation condition of Very Good to Excellent. From the available information, the DoE considers that these wetland areas possess the values of Conservation category wetlands. The EPA states in Environmental Offsets Preliminary Version 2 Position Statement No. 9 (EPA, 2004) that Conservation category wetlands are recognised as 'critical assets', which represent the most important environmental assets in the State that must be fully protected and conserved.

The Wetlands Program supports the refusal of the proposed clearing application due to the significant values of the wetland areas on the property. '

One ANCA wetland, the Doggerup Creek System, exists 8.6km from the area under application.

The area under application in the western corner of Lot 12961 and the eastern corner of Lot 12033 has been identified by the Geomorphic Wetlands, Augusta to Walpole dataset. The Wetland Program believes these areas possess the values of a Conservation Category wetland. The Water and Rivers Commission Position Statement on Wetlands recognises these wetlands as the most valuable and would oppose any activity that may lead to further loss and degradation.

A first order, perennial stream exists in the eastern corner of Lot 12961, within the area under application. Mr Donaldson has indicated he is willing to place a 10m buffer on the stream, which the Department believes is an acceptable distance.

Given the above information relating to the identified wetlands on Lot 12961 & 12033, the Department believes the proposal is at variance to this principle and therefore recommends these areas are not approved for clearing.

Methodology Water and River Commission Position Statement: Wetland
Wetlands Program Memo 2005
GIS Database:
- Geomorphic Wetlands, Augusta to Walpole - 18/6/03

(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 Deputy Commissioner for Soil and Land Conservation provided the following advice in relation to the proposed clearing:

'The proposed clearing of 18 hectares of land on Nelson Locations 8910, 12961 and 12033 is unlikely to cause appreciable land degradation. Therefore, this clearing is unlikely to be at variance with this principle (g).'

The report includes the following conclusions:

'The existing vegetation is very good and diverse and includes areas of mixed heath and sedgeland to jarrah-marri forest. Mr Ian Donaldson indicated that he wished to remove all the smaller vegetation and generally thin the remainder so that the remaining vegetation would then be in clumps and the largest trees left as parkland cleared.'

'Soil and Landform mapping, (Churchward, H.M., McArthur, W.M., Sewell, P.L. and Bartle, G.A. 1988). Indicates that the property is dominated by the Collis yellow duplex phase. Map unit 254BfCOy and to a lesser extent the Blackwater podzols phase. Map unit 254BrBWp.'

'The current condition of the vegetation is good to excellent even though these areas maybe grazed by cattle.'

4.1 Salinity

- 'No evidence of any salinity occurring on the property or offsite.

* The risk of salinity causing land degradation is low.'

4.2 Eutrophication

- 'The risk of eutrophication will increase with the clearing of native vegetation and the establishment of the land for agricultural use. The replanting of Kikuyu based pastures into the same area will reduce its potential.

* The risk of eutrophication causing land degradation is low.'

4.3 Wind erosion

- 'Wind erosion is unlikely on the proposed area to be cleared if pasture cover is maintained.

* The risk of wind erosion causing land degradation is low.'

4.4 Water erosion

- 'The lack of slope gradients and because of porous duplex soil type's present the risk of water erosion is greatly reduced.

* The risk of water erosion causing land degradation is low.'

4.5 Waterlogging

- 'The poorly drained flats and drainage depressions currently become inundated during wetter periods. (Refer to photograph P1010005)

11%of map unit has a high risk.

42%of map unit has a very high risk

- No significant change is expected.

* The risk of waterlogging causing land degradation is low.'

4.6 Flooding

- 'Clearing of further vegetation could increase surface runoff, which would contribute to increased stream flows but is unlikely to cause extensive flooding due to the size of the catchment, land slopes and soil types.

* The risk of flooding causing land degradation is low.'

5 SUMMARY

'The assessment report concludes in finding that the application for a Clearing Permit of 18 hectares indicated could be suitable for development as the risk of further clearing causing land degradation is low.'

Given the above information the Department believes the proposal is not likely to be at variance to this principle.

Methodology Department of Agriculture Report 2005

(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 CALM Managed Lands / Water areas and Registered National Estate areas make up approximately 60% of the local area.

There are two CALM Managed Lands/Water areas within the local area. The first being the Crowea Area which is located approximately 500m north of the property and is vegetatively linked. The minor perennial streams on

the property flow into the CALM Managed Land.

The second is the D'Entrecasteaux Area which is located 1.6km north west and 2.7km south of the property, both are vegetatively linked.

There is a System 1-5 and 7-12 Area, Proposed South Coast National Park, approximately 3.5km south west from the area under application. This park and the property under application are linked vegetatively.

CALM advice was requested and the following recommendations were received:

'The proposed clearing is not anticipated to result in a significant impact on the conservation reserves in the local area provided there is no clearing within the riparian zones of streams that flow into the conservation estate. The clearing is relatively small in area and its value as an ecological linkage will be preserved to some degree by the retention of small buffers around the periphery of each cleared patch (although this clearing will increase the rate of deterioration of those areas). Irrespective of the direct clearing of riparian vegetation, a minor impact on the hydrology of the adjacent Warren State Forest may be experienced since the cluster of areas that are proposed to be cleared appear to form part of a local catchment that flows in to this area of CALM estate that is managed for timber production.'

The Department believes much of the area proposed for clearing provides a corridor between the identified National Parks and CALM Lands, and therefore where ever possible should be retained.

The Department concludes the proposal may be at variance to this principle.

Methodology CALM Advice 2005
GIS Database:
- CALM Managed Land and Waters - CALM 1/06/04
- Register of National Estate - EA 28/10/03
- System 1-5 and 7-12 Areas - DEP 06/95

(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 at variance to this Principle**

Many of the areas proposed for clearing are within riparian zones. The proposed landuse is pasture and grazing. The direct impacts caused by loss of riparian vegetation and cattle in these areas include eutrophication, bank destabilisation and sedimentation. These problems could possibly impact the identified Registered National Estates and CALM lands through the minor perennial watercourses that flow from the property into the reserves.

The proponent has indicated he is willing to place a 10m buffer on the identified watercourses, which should minimise these impacts.

The areas identified as wetlands, however, are also proposed for clearing. The Department of Agriculture has provided the advice that the risk of eutrophication will increase with the clearing and the establishment of pasture and grazing, however believes the planting of kikuyu based pastures will reduce its impact.

Two minor perennial watercourses exist in the eastern corner of Lot 12961. Some of the area proposed for clearing falls within their riparian zones. The Department believes the water quality of these streams would deteriorate if the riparian vegetation is removed. It should also be noted that these streams flow into several CALM Managed areas and Registered National Estates, which in turn could be impacted by the clearing.

The Department believes the clearing of vegetation in the identified wetlands will deteriorate the water quality within them, and therefore may be at variance to this principle.

Methodology Department of Agriculture Advice 2005
GIS Database:
- Geomorphic Wetlands, Augusta to Walpole - DoE 18/6/03

(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**

Advice was requested from the Department of Agriculture and the following recommendations were made:
'Clearing of further vegetation could increase surface runoff, which would contribute to increased stream flows but is unlikely to cause extensive flooding due to the size of the catchment, landslopes and soil types. The risk of flooding causing land degradation is low.'

The Department concludes the proposal is unlikely to be at variance to this principle.

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

Comments

No ground or surface water licences exist for the property (RIWI Act 1914).
 No Works Approvals exist for the property (EP Act 1986).
 The property is zoned 'rural' under the Town Planning Scheme Zones.

The Shire of Manjimup raises no objections to the clearing, however does request for the Department's assistance in incorporating the following as either a condition or advice into the approval.

"A vegetated buffer of at least 20m either side of any watercourse on the property should be retained."

Methodology

GIS Database:

- Town Planning Scheme Zones - MFP 8/98
- WRL, Properties, Ground Water Licences - WRC (Current)
- WRL, Properties, Surface Water Licences - WRC (Current)

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Grazing & Pasture	Mechanical Removal	18	Grant: 5.67ha	<p>Assessment of the area under application found that the clearing proposal is seriously at variance to Principle F, which states that native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.</p> <p>The vegetation proposed for clearing can be separated into four areas on the property. The western corner of Lot 12961 and the eastern corner of Lot 12033 have both been identified as containing wetlands that should be retained and protected. The Department's Wetland Program supports the refusal of the proposed clearing within these areas due to their significant values, as highlighted in the report. CALM have also advised that clearing should not be permitted within the riparian zones.</p> <p>A minor perennial stream exists in the eastern corner of Lot 12961. CALM advice received recommended no impacts are anticipated on the nearby reserves provided there is no clearing within riparian zones of streams that flow into the conservation estates.</p> <p>The proponent has indicated he is willing to retain a 10m buffer on all identified watercourses. Provided this buffer is undertaken and the area is fenced from cattle, the Department believes the proposed clearing in this area is acceptable.</p> <p>Assessment of the application found the proposed clearing is at variance to Principle A, which states that native vegetation should not be cleared if it comprises a high level of biological diversity. The Department's Wetland Program found the wetland areas located at Lots 12961 and 12033 are identified in the Walpole River Suite, of which wetlands are recognised for representativeness, their faunal values and hydrological and ecological linkages. The Site Report also demonstrated the high naturalness of the wetlands with a vegetation condition of Very Good to Excellent. The Department considers that these wetland areas possess the values of Conservation Category Wetlands. The EPA states in Environmental Offsets Preliminary Version 2 Position Statement No. 9 (EPA, 2002) that Conservation Category wetlands are recognised as 'critical assets', which represent the most important environmental assets in the State that must be fully protected and conserved.</p> <p>In conclusion, the Department recognises the importance of the identified wetland areas within the vegetation proposed for clearing, and believes these areas should be protected. It is recommended the proposed clearing in the western corner of Lot 12961 and the eastern corner of Lot 12033 be refused.</p> <p>The Department acknowledges the advice received from both the Shire and Manjimup and CALM, and supports the recommendations that the riparian vegetation in the eastern corner of Lot 12961 be retained. This will ensure the water quality is not deteriorated and the Conservation Estates the streams flow into are not impacted upon. Provided a 10m buffer is placed on both identified watercourses, and the vegetation is fenced off from the cattle, the Department recommends a clearing permit be granted for this area.</p>
Grazing & Pasture	Mechanical Removal			

5. References

- CALM Land clearing proposal advice. Advice to A/Director General, Department of Environment (DoE). Department of Conservation and Land Management, Western Australia. DoE TRIM ref XXXXX.
- DAWA Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture Western Australia. DoE TRIM ref XXXXX.
- 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.
- Keighery, BJ (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske Consulting (1998) Mapping of vegetation complexes in the South West forest region of Western Australia, CALM.
- 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.
- Water and Rivers Commission (2001) Water and Rivers Commission Position Statement: Wetlands. Water and Rivers Commission, Perth

6. Glossary

Term	Meaning
CALM	Department of Conservation and Land Management
DAWA	Department of Agriculture
DEP	Department of Environmental Protection (now DoE)
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 DoE)