



1. Application details

1.1. Permit application details

Permit application No.: 2187/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Water Corporation
Postal address: PO Box 100 Leederville W.A. 6007
Contacts: Phone: 94203860
Fax:
Email: paul.rogoysky@watercorporation.com.au

1.3. Property details

Property: Lot 5322 on Diagram 29368
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.01		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 1108 (Boranup): Shrublands; Acacia decipiens (Shepherd et al. 2001; Hopkins et al. 2001).	The proposal involves clearing approximately 0.01 ha for the purpose of constructing a chlorination module. Approximately 65% of the area under application is completely degraded with little or no vegetation present.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (keighery 1994)	The description of the clearing application area is based on orthomosaic mapping and information supplied by the applicant (flora survey).

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 proposal is for the clearing of 0.01 hectares for the purpose of constructing a chlorination module. Aerial images show the vegetation under application to be in degraded (Keighery, 1994) condition, with sections of the application area (approximately 65%) having little to no vegetation present.

A flora survey of the area (Onshore Environmental, 2004) identified the presence of priority flora. Three occurrences of *Dryandra sessilis* var. *cordata* (P4) were recorded. Limited populations of this species have been recorded between Cape Naturaliste and Cape Leeuwin (Onshore Environmental, 2004; DEC, Flora Base, 2007). Three individual plants were clearly identified outside of the area under application and the proposed clearing is not likely to impact on these plants, given their current location.

The area under application lies within the DEC-managed Leeuwin-Naturaliste National Park. The nearby Leeuwin Springs, located 20 meters north of the application area, this spring supports the largest isolated population of the Cape Leeuwin Freshwater Snail (*Austroassiminea lethae*; Threatened under WA Criteria); a species restricted to coastal areas of the south west. Thirty metres south of the application area is a defined wetland (sumpland; seasonally inundated basin), as mapped under the Augusta to Walpole report (WRC, 1997).

Due to the scale of the proposed clearing (0.01 hectares), the condition of the vegetation under application and the surrounding local vegetation (approximately 60% remaining in 10 kilometre radius), the clearing is unlikely to impact the biodiversity values of the area. To reduce the potential impacts that the proposed clearing may have on the freshwater snail, a DEC site inspection prior to clearing is suggested along with continued monitoring (Regional advice 2008).

Given that the proposed clearing is to take place within a national park where rainfall exceeds 400mm annually, weed control and dieback conditions should be imposed

Methodology Keighery (1994);
Mattiske Consulting (2006);
Onshore Environmental (2004) TRIM Ref: DOC38602.;
Regional Advice (2008) Trim Ref:DOC55050;
DEC, Flora Base (2007);
WRC (1997);
GIS Databases:
- Leeuwin 50cm ORTHOMOSAIC - DLI04

(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

The proposal is for the clearing of 0.01 hectares. The vegetation under application appears to be in degraded (Keighery, 1994), condition with sections of the application area (approximately 65%) having little to no vegetation present.

The area under application lies within a Water Corporation reserve within the DEC-managed Leeuwin-Naturaliste National Park, and in close proximity to the Leeuwin Spring. The Leeuwin Spring supports the largest isolated population of the Cape Leeuwin Freshwater Snail (*Austroassiminea lethae*; Threatened under WA Criteria); a species restricted to coastal areas of the south west.. Regional advice suggests that clearing impacts will be insignificant but still advises a site inspection prior to clearing, along with continued monitoring (Regional Advice 2008).

Methodology Keighery (1994);
Mattiske Consulting (2006);
Regional Advice (2008)Trim Ref:DOC55050
GIS Databases:
- Threatened Fauna, SAC Bio Dataset - 22/8/07;
- CALM Managed Lands and Waters - CALM 1/7/05;
- Leeuwin 50cm ORTHOMOSAIC - DLI04

(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

A flora survey of the applied area during September 2004 (Onshore Environmental, 2004) did not identify any plant taxa gazetted as Rare Flora. The proposed clearing is not likely to be at variance to this Principle.

Methodology Onshore Environmental (2004) TRIM Ref: DOC38602.
GIS Databases:
- Leeuwin 50cm ORTHOMOSAIC - DLI04

(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 four known occurrences of the community type Rimstone pools and cave structures formed by microbial activity on marine shorelines all located within 500 metres of the area under application. This community type comprises nodular crustaceans on limestone soils and occurs on the freshwater - seawater interface (TEC Database).

The soils of the area under application are described as coastal dunes with calcareous sands on the strongly undulating slopes of the dunes. Associated are small areas of other soils including limestone (Northcote et al. 1960-68).

Given the area under application does not occur on the freshwater - seawater interface, the scale of the proposed clearing (0.01 hectares) and the surrounding local vegetation, the proposed clearing is not likely to comprise the whole or part of, or be necessary for the maintenance of a TEC and is therefore not likely to be at variance to this Principle.

Methodology Northcote et al. (1960-68);

GIS Databases:
 - TEC Database, SAC Bio Dataset - 22/8/07;
 - Leeuwin 50cm ORTHOMOSAIC - DLI04
 Jeremy Quartermaine

(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 area under application is located within the Warren Bioregion in the Shire of Augusta-Margaret River. The extent of native vegetation in these areas is 79.5% and 67.3% (Shepherd, 2006), respectively. There is approximately 60% of native vegetation remaining in the local area (10 kilometre radius); with the majority of the vegetated areas being DEC managed National Parks.

The Wilyabrup complex represents the vegetation under application. It is noted less than 134 ha of this complex remains; however the majority of the 78.8% current extent (Mattiske & Havel, 1998) is protected and managed for conservation purposes within the Leeuwin-Naturaliste National Park.

Given the scale (0.01 hectares) and the remaining vegetation in the local area (60% in 10 kilometre radius), the proposed clearing is not considered significant remnant vegetation in an extensively cleared area and is therefore not at variance to this Principle.

	Pre-European area (ha)	Current extent (ha)	Remaining %	% in reserves/DEC-managed land
IBRA Region: - Warren	833,981	663,141	79.5*	82.4
Local Government Authority: - Shire of Augusta Margaret River	223,265	150,354	67.3*	29.3
Vegetation type: Beard: - 1108 (Boranup)	9,060	8,133	89.8*	65.7
Mattiske: - Wilyabrup (WEw)	171	134	78.8**	N/A
* (Shepherd, 2006)				
** (Mattiske & Havel, 1998)				

Methodology Shepherd (2006);
 Mattiske & Havel (1998);
 Heddle et al. (1980);
 GIS databases:
 - Leeuwin 50cm ORTHOMOSAIC - DLI04
 - Interim Biogeographic Regionalisation of Australia - EM 18/10/00;
 - Mattiske Vegetation - CALM 24/3/98;
 - Pre-European Vegetation - DA 01/01;
 - Local Government Authorities - DLI 8/7/04
 Jeremy Quartermaine

(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 area under application is located approximately 20 metres south of the Leeuwin Springs, and approximately 30 metres north of a defined wetland (sumpland; seasonally inundated basin), as mapped under the Augusta to Walpole report (WRC, 1997).

Given the condition of the vegetation under application and the condition of the vegetation between the application area and the defined wetland, as well as the size of the proposed clearing, it is considered unlikely that the vegetation under application is growing in association with a watercourse or wetland.

Methodology WRC (1997);
 ENV Australia (2007);
 DEC, Flora Base (2008);
 GIS Databases:

- Leeuwin 50cm ORTHOMOSAIC - DLI04
- Geomorphic Wetlands, Augusta to Walpole - DoE 18/6/03;
- Hydrography, Linear - DoE 1/2/04;
- EPP Areas - DEP 6/95

(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 soils of the area under application are described as coastal dunes with calcareous sands on the strongly undulating slopes of the dunes. Associated are small areas of other soils including limestone (Northcote et al. 1960-68).

The groundwater salinity is > 500 mg/L and the hydrogeology consists of shallow aquifers with surficial sediments. The slope of the area under application is 10 to 11 m AHD (Australian Height Datum) over 10 metres

Given the scale of the proposed clearing (0.01 hectares); the level of groundwater salinity; the hydrogeology of the area; the gradual sloping nature of the area and the surrounding native vegetation, the proposed clearing is not likely to cause appreciable land degradation and is therefore not likely to be at variance to this Principle.

Methodology Northcote et al. (1960-68);

GIS Databases:

- Leeuwin 50cm ORTHOMOSAIC - DLI04
- Hydrogeology, Statewide - DOW;
- Groundwater Salinity, Statewide - DOW;
- CALM Managed Lands and Waters

(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

Aerial photography suggests that the small area under application is in a degraded condition (Keighery 1994). The applied area is located within the Leeuwin-Naturaliste Ridge Area (Register of National Estate) and surrounded by the Leeuwin-Naturaliste National Park. Given the small scale (0.01 hectares) of the proposed clearing is not likely to negatively impact on the environmental values of these conservation areas and is therefore not likely to be at variance to this Principle.

Methodology GIS Databases:

- Leeuwin 50cm ORTHOMOSAIC - DLI04
- Register of National Estate - EA 28/1/03;
- CALM Managed Lands and Waters – CALM 1/07/05

(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 is not likely to be at variance to this Principle

The soils of the area under application are described as coastal dunes with calcareous sands on the strongly undulating slopes of the dunes. Associated are small areas of other soils including limestone (Northcote et al. 1960-68). The groundwater salinity is > 5000 mg/L and the hydrogeology consists of shallow aquifers with surficial sediments.

Due to the scale (0.01 hectares), the proposed clearing is not likely to increase groundwater salinity or deterioration in the quality of surface water and is therefore not likely to be at variance to this Principle.

Methodology Northcote et al. (1960-68);

GIS Databases:

- Leeuwin 50cm ORTHOMOSAIC - DLI04
- Hydrography, linear - DOE 1/2/04;
- Topographic Contours, Statewide - DOLA 12/09/02;
- Hydrogeology, Statewide - DOW;
- 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 at variance to this Principle

The slope of the area under application is 10 to 11 m AHD (Australian Height Datum) over 10 metres. The mean annual rainfall is 1100mm.

Given the small scale (0.01 hectares) and the remaining surrounding vegetation, the proposed clearing is unlikely to cause or exacerbate the incidence or intensity of flooding and is therefore not likely to be at variance to this clearing principle.

Methodology GIS Databases:

- Leeuwin 50cm ORTHOMOSAIC - DLI04
- Topographic Contours, Statewide - DOLA 12/09/02;
- CALM Managed Lands and Waters - CALM 1/07/05;
- Register of National Estate - EA 28/1/03
- Rainfall, Mean Annual

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

Comments

Lot 5321 and 5322 are Crown reserves vested with the Western Australian Water Corporation for water supply purposes.

Methodology

4. Assessor's recommendations

Comment / recommendation

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 not or is not likely to be at variance to all clearing Principles.

5. References

Department of Environment and Conservation (DEC), Flora Base (2008) <http://florabase.dec.wa.gov.au> (Retrieved 3 January 2008).

ENV Australia (2007). Augusta Chlorination Module, Leeuwin Springs: Guidelines for implementation, Perth, Western Australia. TRIM Ref: DOC38602.

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.

Mattiske, E.M. and Havel, J.J. (1998). Vegetation mapping in the South West of Western Australia. Department of Conservation and Land Management, Perth.

Mattiske Consulting (2006). Augusta-Leeuwin Spring Swamp Flora and Molluscan Fauna Monitoring, Perth, Western Australia. TRIM Ref: DOC38602.

Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.

Onshore Environmental (2004). Flora and Vegetation Survey: Leeuwin Springs. Dunsborough, Western Australia. TRIM Ref: DOC38602.

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Regional Advice (2008) Trim Ref:DOC55050

Sac Bio Datasets (22/8/07). Department of Environment and Conservation, Sac Bio Datasets, Kensington, Western Australia.

Shepherd, D.P. (2006). 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.