



1. Application details

1.1. Permit application details

Permit application No.: 2240/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Water Corporation

1.3. Property details

Property: LOT 9213 ON PLAN 54288 (BERTRAM 6167)
LOT 9214 ON PLAN 54288 (BERTRAM 6167)
LOT 9214 ON PLAN 54288 (BERTRAM 6167)
LOT 9209 ON PLAN 53314 (Lot No. 9209 PRICE BERTRAM 6167)
LOT 9210 ON PLAN 53314 (Lot No. 9210 PRICE BERTRAM 6167)

Local Government Area: Town Of Kwinana

Colloquial name:

1.4. Application

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

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
Hedde Vegetation Complex: Bassendean Complex - Central and South - Vegetation ranges from woodland of <i>E. marginata</i> - <i>A. fraseriana</i> - <i>Banksia</i> spp. to low woodland of <i>Melaleuca</i> species, and sedgelands on the moister sites.	The proposal includes the clearing of 0.07 hectares for the purpose of conducting maintenance on sewer access chambers that have become corroded. The majority of the area under application has been largely cleared for subdivision works and the sewer line runs parallel to the main drain, which has had large berms constructed on the side.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	Vegetation clearing description based on a site description and photographs provided by the Water Corporation.
Karrakatta Complex - Central and South - Predominantly open forest of <i>E. gomphocephala</i> - <i>E. marginata</i> - <i>E. calophylla</i> and woodland of <i>E. marginata</i> - <i>Banksia</i> species.	The vegetation under application has a sparse canopy cover, with minimal understorey vegetation and a groundcover dominated by non-native grass species. The vegetation under application comprises individual <i>Banksia</i> spp., <i>Kunzea glabrescens</i> and <i>Acacia</i> spp.		
Beard Vegetation Association: 6 - Medium woodland; tuart and jarrah 1001 - Medium very sparse woodland; jarrah, with low woodland; banksia and casuarina			

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 vegetation under application is limited to individual shrubs with an understorey comprising non-native grasses, and is considered to be in completely degraded condition (Water Corporation 2007).

Given that the vegetation under application is completely degraded with a low species diversity, it is considered likely to comprise a high level of biodiversity.

Methodology Water Corporation (2007)

(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**

The vegetation under application is limited to 0.07 hectares and is in completely degraded condition, being limited to individual shrubs with an understorey comprising non-native grasses. The vegetation under application does not include mature Eucalyptus species with the potential to contain habitat hollows and the lack of understorey is likely to limit the habitat potential of the vegetation under application for ground-dwelling fauna such as the Quenda.

Given the completely degraded condition of the vegetation under application it is not considered likely that the vegetation would comprise the whole, or part of, or be necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Methodology Water Corporation (2007)

(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**

Within the local area (5km radius of the application) there are eight known populations of Declared Rare Flora, with the closest being *Diuris micrantha* located approximately 150m to the east and *Caladenia huegelii* located approximately 370m to the north of the applied area.

D. micrantha is a tuberous, perennial, herb, that grows in brown loamy clay in winter-wet swamps (Western Australia Herbarium 1994). The area under application is not located within a wetland and therefore is not considered likely to include suitable habitat for this species.

C. huegelii is a tuberous, perennial, herb that grows in grey or brown sand, clay loam (Western Australia Herbarium 1994). It is considered that suitable habitat may be present for this species within the grey sands found in the area under application, however the vegetation under application is completely degraded, comprising sparse individual shrubs. It is therefore not considered likely that the vegetation under application includes, or is necessary for the continued existence of, rare flora.

Methodology Western Australia Herbarium (1994)
GIS Database:
SAC Bio datasets accessed 20/12/07

(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 is one known occurrence of a Threatened Ecological Community (TEC) within the local area (5km radius of the application) located 4.8km to the northwest of the area under application.

The Bush Forever study identified the following TEC to be associated with the Bassendean Dune system and the Spearwood Dune system:

- Banksia attenuata woodlands over species rich dense shrublands (20a)
 - Eastern Banksia attenuata and/or Eucalyptus marginata woodlands (20b)
 - Eastern shrublands and woodlands (20c)
 - Melaleuca huegelii ? Melaleuca acerosa shrublands on Limestone ridges (26a)
- (Government of Western Australia 2000).

The area under application is located along the boundary of Bush Forever site 272, within which a study identified the Floristic Community Types (FCT) to be 5, 11 and 28, which are not identified as TECs (Government of Western Australia 2000).

Given that the areas under application are located along the boundary of a Bush Forever site with inferred Floristic Community Types that are not listed as TECs, and given the completely degraded condition of the vegetation under application, it is not considered likely that the applied vegetation comprises, or is necessary for the maintenance of, a TEC.

Methodology Government of Western Australia (2000)
GIS Database:
Bushforever - MFP 07/01
Threatened Ecological Communities - CALM 12/4/05

(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 likely to be at variance to this Principle

Heddle et al. (1980) defines the vegetation under application as 'Bassendean Complex - Central and South' of which there is 27.0% of pre-European extent remaining and which is considered to be 'vulnerable'.

The vegetation under application is also classified as vegetation association 1001, of which there is 25.6% of pre-European extent remaining and which is also considered to be 'vulnerable' (Shepherd et al. 2001; Department of Natural Resources and Environment).

The identified vegetation complexes have less than the recommended 30% minimum of Pre-European extent remaining, however the applied area is considered to be within a constrained area. The EPA (2003) recognises the Perth Metropolitan Region as a 'constrained area', providing for the reduction of vegetation complexes remaining to a minimum of 10% of the pre-European extent. In addition the vegetation under application is limited to 0.07 hectares in completely degraded condition and is not considered likely to be representative of the identified vegetation complexes. It is therefore not considered likely that the vegetation under application is significant as a remnant in an area that has been extensively cleared.

	Pre-European area (ha)	Current extent (ha)	Remaining %
Swan Coastal Plain	1,501,211	579,227	38.6
Heddle vegetation complex			Depleted
Bassendean Complex - central and south	87,477	23,624	27.0**
Beard vegetation associations			
1001	57,410	14,685	25.6
			Vulnerable
			4.5

* (Shepherd et al. 2001)

** (EPA, 2006)

*** (Department of Natural Resources and Environment 2002)

Methodology Heddle et al. (1980)
Shepherd et al. (2001)
Department of Natural Resource and Environment (2002)
EPA (2003)
GIS Databases:
Heddle Vegetation Complexes - DEP 21/06/95
Pre-European Vegetation - DA 01/01

(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 may be at variance to this Principle

There are no mapped wetlands within the area under application. There is a Resource Enhancement Wetland located 30m to the north of the southern portion of the applied area and a Conservation Category Wetland located 70 to the east. The applied area runs parallel to the Peel Main Drain at a distance of approximately 30m.

The vegetation under application includes individual *Kunzea glabrescens*, which is found in sandy soils at the edges of swamps, lakes, rivers, moist depressions? (Western Australian Herbarium 1995) and therefore may be considered to grow in association with watercourses and wetlands.

Given the close proximity of the vegetation under application to mapped wetlands, and that the applied vegetation includes *K. glabrescens*, it is considered that this vegetation may be growing in association with a watercourse or wetland.

Methodology Water Corporation (2007)
Western Australian Herbarium (1995)
GIS Databases:

(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

Soils within the area under application are part of the Bassendean B6 phase, which comprise imperfectly drained deep or very deep grey siliceous sands (State of Western Australia 2005). These soils have a high risk of phosphorus export and wind erosion, and a moderate risk of waterlogging (State of Western Australia 2005). There is a high risk of acid sulphate soils within the applied area, however these are not likely to be disturbed by the proposed clearing.

Given that the proposed clearing is limited to 0.07 hectares comprising individual shrubs it is not considered likely to result in wind erosion, waterlogging or phosphorus export causing appreciable land degradation.

Methodology State of Western Australia (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 area under application is located along the property boundary of Bush Forever site 272. Leda Nature Reserve is located 4km to the southwest of the applied area.

Given that the applied area is limited to 0.07 hectares of sparse vegetation in completely degraded condition, it is not considered likely that the proposed clearing along the boundary would have a direct impact on the environmental values of Bush Forever site 272.

The proposed clearing may however have indirect impacts on the environmental values of Bush Forever site 272 through the spread or introduction of dieback or weed species by machinery. There are serious consequences associated with the spread of such diseases and exotic species into an area reserved for conservation, including the potential local extinction of species.

Given that the proposed clearing may have an indirect impact on its environmental values of Bush Forever site 272, it is considered that the proposal may be at variance to this Principle.

If a permit is granted, conditions will be imposed requiring dieback and weed prevention measures.

Methodology GIS Databases:
Bushforever - MFP 07/01
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

There is a Resource Enhancement Wetland located 30m to the north of the southern portion of the applied area and a Conservation Category Wetland located 70 to the east. The applied area runs parallel to the Peel Main Drain at a distance of approximately 30m. The sandy soils on site have high infiltration rates.

Given the distance to nearby waterbodies and that the applied area is limited to 0.07 hectares on sandy soils, it is not considered likely that the proposed clearing would cause a deterioration in surface water quality through water erosion and sedimentation.

There is a high risk of acid sulphate soils within the applied area, however these are not likely to be disturbed by the proposed clearing. There is also a moderate to high risk of salinity within the areas under application, however given that the proposed clearing is limited to 0.07 hectares of sparse vegetation it is not considered likely that it would contribute significantly to salinity resulting in a deterioration in groundwater quality.

Methodology State of Western Australia (2005)
GIS Databases:
Acid Sulfate Soil Risk Map, Swan Coastal Plain ? DEC
Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain ? DEC
Hydrography, linear (hierarchy) - DOW
Salinity Risk LM 25m - DOLA 00

(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

There is a Resource Enhancement Wetland located 30m to the north of the southern portion of the applied area and a Conservation Category Wetland located 70 to the east. The applied area runs parallel to the Peel Main Drain at a distance of approximately 30m. The area under application is located on sandy soils that have a high infiltration rate and therefore it is not considered likely that the proposal would have an impact on peak flood height or duration.

Methodology State of Western Australia (2005)
GIS Databases:
Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain

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

Comments

The area under application is part of a Native Title Claim however, since the lots are privately owned the Native Title has been extinguished under the Native Title Act. Therefore the clearing is considered to be a secondary approval and not a future act under the Native Title Act 1993.

Water Corporation has been in discussion with the Department of Planning and Infrastructure (DPI) in regards to the Bush Forever site, and in consideration of the requests of DPI, has committed to revegetation twice the area of land disturbed in Bush Forever site 272. Additionally Water Corporation have advised that the Contract Environmental Management System will emphasise environmental controls that will minimise clearing activities and protect native vegetation from disturbance, such as erecting temporary fencing during maintenance activities.

Bush Forever advise that given the proposed clearing is minimal standard conditions should be applied in regards to minimising impact and rehabilitation at 2:1.

The Town of Kwinana advise they have no objection to the proposed clearing.

Methodology GIS Database: Native Title Claims - DLI 7/11/05

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Miscellaneous	Mechanical Removal	0.07	The assessable criteria have been addressed and the proposed clearing may be at variance to Principles (f) and (h).

5. References

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 (2006) Guidance for the Assessment of Environmental Factors -level of assessment of proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 Region. Report by the EPA under the Environmental Protection Act 1986. No 10 WA.

Heddle, 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.

Shepherd (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.

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.

State of Western Australia (2005) Agmaps Land Manager CD Rom.

Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> Accessed on Thursday, 20 December 2007.

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)