



1. Application details

1.1. Permit application details

Permit application No.: 2151/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Water Corporation

1.3. Property details

Property: LOT 6382 ON PLAN 36936 (House No. 341 HOPETOUN-RAVENSTHORPE HOPETOUN 6348)
ROAD RESERVE (HOPETOUN 6348)
ROAD RESERVE (HOPETOUN 6348)
LOT 1495 ON PLAN 18336 (HOPETOUN 6348)
LOT 630 ON PLAN 189454 (Lot No. 630 HAMERSLEY HOPETOUN 6348)
LOT 3027 ON PLAN 52614 (HOPETOUN 6348)
ROAD RESERVE (HOPETOUN 6348)
LOT 3026 ON PLAN 52614 (HOPETOUN 6348)
ROAD RESERVE (HOPETOUN 6348)
Local Government Area: Shire Of Ravensthorpe
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
7.4	100	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
IBRA Bioregion: - Esperance Plains	Clearing of 7.4 hectares and 100 native trees for the installation of a waste water treatment plant on Lot 6382, and associated pressure mains pipelines between the plant, Hopetoun townsite and the Hopetoun golf course. Clearing includes within road reserves.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	Determined from Site Visit Photos (2007) and Site Inspection Report (2007) and Water Corporation (2007).
Beard Vegetation Association: - 47: Shrublands; tallerack mallee-heath - 48: Shrublands; scrub-heath - 42: Shrublands; mallee & acacia scrub on south coastal dunes	Sections of the proposed area within Lot 6382 contain an overstorey dominated by mallees, and in other areas, Banksia speciosa is the dominant species in the overstorey. Dense heath species include: Lambertia inermis, Melaleuca striata, Adenanthos cuneatus etc. The scrub heath is a very diverse vegetation community. Previous land use on the area under application on Lot 6382 included livestock grazing.		
	The remnant vegetation on Lot 630 is scrub heath;		

however, much of the golf course has been highly disturbed in the past and in these areas, the vegetation community no longer remains intact. Some native species have been planted here. The vegetation in the uncleared north eastern corner of Lot 630 consists of *Eucalyptus pleurocarpa* Mallee-heath and *B. speciosa* Scrub-heath

The vegetation within the Hopetoun- Ravensthorpe Road Reserve consists of *B. speciosa*/*Nuytsia floribunda* Scrub-heath with Mallee-heath (Beard 1979), dominated by *E. pleurocarpa* and *B. speciosa* in the upper storey. At the southern end, along Hopetoun-Ravensthorpe Road, the vegetation exhibits coastal influences, including species such as: *Eucalyptus thamnoides*, *Eucalyptus angulosa*, *Scaevola crassifolia* etc

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

7.4ha and approx. 100 trees are proposed to be cleared, where condition of vegetation is considered to range from completely degraded to excellent (Keighery 1994). Areas under application include clearing within road reserves, remnant bushland areas and disturbed areas consisting of regrowth.

The condition of the vegetation proposed for clearing is considered to range from completely degraded in the areas close to the Steeredale Road northern boundary of Lot 6382 to excellent condition (Keighery 1994), comprising of *Banksia speciosa* scrub-heath vegetation (Site Visit Photos 2007) in the southern portion of this area under application. This area is also upslope towards the hilltop which has a limestone capping overlaid by a remnant of reworked Cainozoic quartz sandplain [Czcr] (Witt, WK 1997). The vegetation occurring on this soil type has a high degree of biodiversity including a significant number of Proteaceous species (occurring in the relatively intact bushland under application). The two arms of this vegetation extending east and west of the centre consist mostly of degraded (Keighery 1994) *Banksia speciosa* Scrub heath, and the eastern half of this arm has been burnt since 2002. On the flatter area adjacent to the northern boundary, small remnants of *Nuytsia floribunda* in association with *Acacia cyclops* and *Eucalyptus decurva* occur on white quartz sands overlying colluvial silt, clay and lateritic rock fragments (Site Inspection Report 2007). The presence of healthy *B. speciosa* species and *Lambertia inermis* species (also identified during the site inspection) indicates the absence of *Phytophthora* dieback (as are a highly susceptible species to the pathogen). However, evidence of *Phytophthora* dieback was observed during the field survey and hygiene procedures will need to be in place to ensure clearing does not spread the pathogen (Water Corporation 2007). Previous land use on the area under application on Lot 6382 included livestock grazing (Site Inspection Report 2007).

The condition of the vegetation within the Ravensthorpe-Hopetoun Road Reserve ranges from very good to completely degraded (Keighery 1994), where the proposed pipeline passes the BHP-Billeton Wave Crest village. The vegetation consists of *B. speciosa*/*N. floribunda* Scrub-heath with Mallee-heath (Beard 1979), dominated by *Eucalyptus pleurocarpa* and *B. speciosa* in the upper storey and which occurs on Quaternary coastal dune sands and consolidated calcarenite dunes (Site Inspection Report 2007). At the southern end, along Hopetoun-Ravensthorpe Road, the vegetation exhibits coastal influences, including species such as: *Eucalyptus thamnoides*, *Eucalyptus angulosa*, *Scaevola crassifolia* etc (Water Corporation 2007)

Although Lot 630 is managed as a golf course, there are substantial areas containing intact native vegetation on this property that have not been impacted by dieback disease or development. The vegetation in the uncleared north eastern corner of Lot 630 occurs on a reworked coastal dune of quartz sands [Qct] (Witt WK 1997) and consists of *E. pleurocarpa* Mallee-heath and *B. speciosa* Scrub-heath. The vegetation in the north east corner, is considered to be in very good condition (Keighery 1994), but is recovering from fire several years ago and has been subject to prior soil disturbance, resulting in predominantly, *Acacia* regrowth (Site Visit Photos 2007).

Elsewhere on the golf course the areas proposed for clearing border fairways etc and range in condition from good to degraded (Keighery 1994).

Water Corporations Report (2007) states that the vegetation under application has very high species diversity. A total of 212 taxa, 177 of which were native plant species, were recorded within the area during the survey. The proposed areas are situated on the eastern edge of the Fitzgerald Biosphere, which has a very high level of biodiversity and endemism (and is located approx. 9 km from Fitzgerald River National Park). This level of biological diversity is representative of the high biodiversity of the region and is not considered to be outstanding. Less disturbed native vegetation with similar or higher levels of biological diversity is present both within the local area and the bioregion (Water Corporation 2007).

Given the above information, the proposed clearing may comprise a high level of biological diversity. Conditions to minimise and avoid clearing and manage dieback and weeds will be imposed if clearing is approved.

Methodology Site Inspection Report (2007)
Site Visit Photos (2007)
Keighery, B.J. (1994)

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

7.4ha and approx. 100 trees are proposed to be cleared, where condition of vegetation is considered to range from completely degraded to excellent (Keighery 1994). Areas under application include within road reserves, remnant bushland areas and disturbed areas consisting of regrowth.

Eight Declared Threatened or Priority Fauna species have been recorded as occurring within 20km radius of the area under application. These species have been recorded as occurring within bushland/conservation reserves significantly larger in area and in better condition than the areas applied for. However, the Chuditch (*Dasyurus geoffroii*) (Declared Threatened: Vulnerable), is known to occur in small numbers in the Hopetoun area, and has the potential to occur on site. Given the status and small number of individuals known to occur in the area, the vegetation under application may be significant habitat for the Chuditch (Water Corporation 2007).

Lot 630 provides good quality habitat for fauna, and has a role as a fauna corridor. Development and expansion of the residential area of Hopetoun has compromised the ecological connectivity of this macro corridor, a critical link for a number of threatened fauna species. The proposed clearing on Lot 6382, which lies adjacent to the corridor, has increased value for biodiversity conservation as a result of land clearing within the corridor at Hopetoun, and is also considered to provide a vital food source area for Carnabys cockatoos (Site Inspection Report 2007). The high biological diversity of flora provides excellent habitat for a variety of birdlife (Water Corporation 2007). The EPA notes that there are few east-west fauna linkages in the Hopetoun region and Lot 6382 appears to be well located to provide an east-west ecological linkage between the bushland to the east of Hopetoun Road and Cuiham Inlet to the west (EPA 2007).

Nectar dependant species including Yellow-throated Miners (*Manorina flavigula*), New-Holland honey-eaters (*Phylidonyris novaehollandiae*) and Brown-headed honey-eaters (*Melithreptus brevirostris*) were noted feeding on *Lambertia inermis* and *Nuytsia floribunda* during the site inspection. Grey kangaroos (*Macropus giganteus*) were using the site on Lot 6382 as a resting area and about 25 - 30 Carnabys cockatoos (*Calyptorhynchus latirostris*) (Declared Threatened: Endangered) were feeding on *Banksia speciosa* flowers. A number of pairs were sighted within the flock. In view of the extent of fire in the Eastern Fitzgerald - Hopetoun area, the presence of dieback disease and its effect on *B.speciosa* and the extent of land clearing in this area, there are now very few relatively intact stands of this species available to Carnabys cockatoos (*Calyptorhynchus latirostris*) (Declared Threatened: Endangered). It is therefore contended that the vegetation is necessary for the maintenance of significant habitat for native fauna (Site Inspection Report 2007).

To mitigate loss of significant habitat, conditions to manage fauna and avoid and minimise the loss of native vegetation will be imposed if clearing is approved.

Methodology Site Inspection Report (2007)
Water Corporation (2007)
Keighery, B.J. (1994)
EPA (2007)
SAC Biodatasets 171207
GIS datasets:
- Ravensthorpe 1.4m Orthomosaic - DLI 02

(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**
No declared rare flora (DRF) or priority listed flora were noted within the area during the site inspection.

No declared rare flora (DRF) or priority listed flora were recorded during a floristic survey of the conveyance infrastructure alignment undertaken by GHD Pty Ltd (2007), carried out in accordance with EPA Guidance Statement No.51.

Methodology Water Corporation (2007)
Site Inspection Report (2007)
GHD Pty Ltd (2007)

(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**
No Threatened Ecological Communities (TEC) or Priority Ecological Communities (PEC) has been recorded within 15km radius of areas under application (Water Corporation 2007). The closest TEC or PEC is Melkondip06, located 21km north of the area under application, and occurs in different Beard Vegetation Associations to that of the proposed area. There is another PEC, namely, Masons Bay Road, located 25.7km east, which forms a component of the same Beard Vegetation Associations of the proposed area. However, there is limited ecological linkage between the proposed clearing and the PEC due to prior land clearing causing fragmentation. Given this, it is highly unlikely that the areas under application would be necessary for the maintenance of a TEC/PEC.

Methodology SAC Biodatasets 271207
GIS dataets:
- Ravensthorpe 1.4m Orthomosaic - DLI 02
Water Corporation (2007)

(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**
One main Beard vegetation associations occurs within the area proposed for clearing in this application on Lot 6382: Vegetation Association 47 Shrublands; tallrack mallee-heath

	Pre-European Extent*	Current area (ha) *	Remaining extent (%)*	Current Extent Cons %*
Beard Veg Assoc 47:	1033054	370547	35.9	48.2
Shire of Ravensthorpe	1343629	963740	71.7	25.9
Beard Veg Assoc 47:	328614	152558	46.4	43.7
IBRA Bioregion - Esperance Plains:	2899949	1482951	51.1	54.4
Beard Veg Assoc 47:	959937	337635	35.2	51.0

* Shepherd (2006)

** Department of Natural Resources and Environment (2002)

The area under application is located in the Shire of Ravensthorpe and within the Esperance Plains Bioregion. The extent of pre-European vegetation within these areas is 25.9% and 54.4%, respectively (Shepherd et al., 2001; Shepherd, 2006).

The vegetation proposed to be cleared is a component of Beard Vegetation Association 47 (Hopkins et al., 2001) of which there is 35.9% remaining regionally, and 35.2% remaining locally (Shepherd, 2006).

Aerial photography indicates that the landscape has become highly fragmented due to extensive clearing (approximately 35% remaining in 10km radius from proposed areas).

Methodology Department of Natural Resources and Environment (2002)
EPA (2000)
Shepherd, D.P. (2006)
Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2002)
GIS datasets:
- Pre-European Vegetation - DA 01/01

- Ravensthorpe 1.4m Orthomosaic - DLI 02
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00

(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 vegetation under application proposed to be cleared is approximately 2.8km east, and 5km north of the coast. Dunns Swamp Suite, is located 2.6km south east, and the Culham Inlet system is located 2.8km west, of the area under application. The land subject to this application lies approximately 2km to the northwest of a proposed conservation reserve (Reserve Number 7853) which contains land that is subject to seasonal inundation (Site Inspection Report 2007). Most of the rare and priority species recorded as occurring within 10km radius of the area under application represent areas of drier soil types. Given this, the vegetation under application would not be considered to be growing in association with a watercourse or wetland.

Furthermore, DoW (2007) advises that the vegetation is not associated with any significant wetland or surface waterway.

**Methodology Site Inspection Report (2007)
DoW (2007)
GIS datasets:**

- Ravensthorpe 1.4m Orthomosaic - DLI 02
- Hydrography, linear (hierarchy) - DOW
- Rivers, 1M - GA 01/06/00
- South Coast Significant Wetlands - DOE 4/8/03
- Pre-European Vegetation - DA 01/01

(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 site on Lot 6382 comprises the north facing aspect of a substantial hill located within the northern portion of the property. Upslope on Lot 6382 reworked Cainozoic quartz sands [Czcr] overlying limestone occur; downslope, deeper white quartz sands overlying colluvial silts, clay and lateritic rock fragments [Czc] occur.

Soil type: Coastal dunes and their intervening swales with saline flats, swamps, and lakes; some lunettes; some estuarine areas: chief soils seem to be calcareous sands on the recent dunes fronting the coast, and siliceous sands on the older dunes and lunettes. Associated are possibly some and soils and there are various undescribed soils around the saline flats and swamps, around estuarine areas, and on aeolianite. As mapped, areas of unit Ca26 are included, particularly on headlands: Hills, small ranges of hills, headlands and off-shore islands, bare rock walls: granitic bosses and tors with shallow leached sands. Associated are small areas of other soils (undescribed). Coastal occurrences may also have dunes of and/or sands piled up against the rocks (Northcote 1960-68).

The Ravensthorpe-Houptoun Road occurs on gently undulating sand dunes and flats contain Quaternary coastal dune sands [Qct].

The sites on Lot 630 (golf course) comprise a southern facing dune slope where the storage tank is to be located, and contains Quaternary calcarenite dune sands [Qt] on the elevated storage tank site and Qct elsewhere on the golf course (Witt, WK 1997) (Site Inspection Report 2007).

There is no mapped record of acid-sulphate soils risk for the area under application. Salinity in the area has been recorded as 500 - 1000 mg/L TDS (total dissolved solids). Mean annual rainfall has been recorded as 500 - 600 mm/year, and evaporation recorded as 1800mm/year. The elevation of the proposed area is between 25 - 45m AHD.

There was no evidence detected on-site of land degradation caused by induced or naturally occurring dryland salinity or waterlogging and land appears to be well drained (Site Inspection Report 2007). Wind erosion may occur in areas where the surroundings landscape has been highly cleared (approximately 35% remaining in 10km radius from proposed areas), given the sandy soil type.

Water Corporations Report (2007) states that the clearing may temporarily cause waterlogging in localised areas during construction. However, this is considered to be a low risk and a rehabilitation plan should mitigate any potential impacts in the long term.

Given this information, it is unlikely that the proposed clearing will cause appreciable land degradation.

**Methodology Site Inspection Report (2007)
Water Corporation (2007)**

Northcote, K. H et al. (1960-68)

GIS datasets:

- Pre-European Vegetation - DA 01/01
- Ravensthorpe 1.4m Orthomosaic - DLI 02
- Soils, Statewide - DA 11/99
- Isohyets - BOM 09/98
- Groundwater Salinity, Statewide - DOW
- Topographic Contours, Statewide - DOLA 12/09/02
- Rainfall, Mean Annual - BOM 30/09/01
- Acid Sulfate Soil Risk Map, Albany-Torbay - DEC

(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

There are 7 areas designated for conservation within 10km radius of the area under application. These include Fitzgerald River National Park (A-class Reserve Number 31737), on the Register of National Estate, located 5km west, Jerdacuttup Lakes Nature Reserve (Reserve Number 28286), a System 3 Reserve, located 9.5km east, an un-named nature reserve, located 9.1km north west and a System 3 Reserve, located 3.2km south east, Reserve Number 26302, 5.5km to the north-west and Reserve Number 26662 near Kuliba Road, 9.5km north east from the proposed area. Part of Jerdacuttup Lakes Nature Reserve and the System 3 Reserve forms a component of the same Beard Vegetation Association as the proposed area. A proposed nature reserve (Reserve Number 7853) lies 2km approx. to the south-east (Site Inspection Report 2007).

Given the distance and fragmentation of the land due to prior land clearing (approximately 35% remaining in 10km radius from proposed areas) between the reserves and the proposed areas, it is unlikely that the proposed clearing would impact on the environmental values of the conservation areas.

Methodology Site Inspection Report (2007)

Water Corporation (2007)

GIS datasets:

- Pre-European Vegetation - DA 01/01
- Ravensthorpe 1.4m Orthomosaic - DLI 02
- CALM Managed Lands and Waters - CALM 1/07/05
- WRC Estate - DOW
- Register of National Estate - EA 28/01/03

(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 areas are approximately 20m south east of Priority 2 Public Drinking Water Source Area: Hopetoun Water Reserve, and are part of the Jerdacuttup River Hydrographic Catchment.

There is no mapped record of acid-sulphate soils risk for the area under application. Salinity in the area has been recorded as 500 - 1000 mg/L TDS (total dissolved solids). Mean annual rainfall has been recorded as 500 - 600 mm/year, and evaporation recorded as 1800mm/year. The elevation of the proposed area is between 25 - 45m AHD.

In general terms, drainage on Lot 6382 is downslope towards Steeredale Road to the north; on Lot 630 the storage tank site drains southwards towards the coast and on the remaining areas under application there is no particular point to which drainage will occur other than towards interdunal swales (Site Inspection Report 2007). It is noted that a fire break situated near production bore 2/67 is showing signs of significant surface water run-off. Lot 6382 is an important recharge zone for the Hopetoun Water Reserve and is located in the flow path towards the Water Corporation's production Bores and future wellfield areas. To reduce the risk of polluting the groundwater, further clearing of vegetation within the PDWSA should be kept to a minimum. The Water Reserve, an unconfined sandy aquifer, is currently the sole source for the Hopetoun water supply scheme (EPA 2007).

DoW (2007) advises that the clearing proposal does not appear to have any implications for the groundwater reserve. The DoW has recently investigated groundwater movement in the area adjacent to the main Hopetoun - Ravey road, and there is limited groundwater, and the water reserve is likely to be redrawn.

Water Corporations Report (2007) states that clearing has a low potential to cause deterioration in the quality of surface and underground waters, as clearing will be limited and appropriate management plans may mitigate any potential impacts.

Methodology Site Inspection Report (2007)

Water Corporation (2007)

DoW (2007)

EPA (2007)

GIS Datasets:

- Hydrographic Catchments - Subcatchments - DOW
- CAWSA Part IIA Clearing Control Catchments - DOW
- Hydrographic Catchments - Catchments - DOE 23/03/05
- Rainfall, Mean Annual - BOM 30/09/01
- Topographic Contours, Statewide - DOLA 12/09/02
- Public Drinking Water Source Areas (PDWSAs) - DOW
- Acid Sulfate Soil Risk Map, Albany-Torbay - DEC

(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

Mean annual rainfall has been recorded as 500 - 600 mm/year, and evaporation recorded as 1800mm/year. The elevation of the proposed area is between 25 - 45m AHD. The areas proposed for clearing do not appear to occur within an area that is prone to flooding (Site Inspection Report 2007).

Water Corporations Report (2007) states that the clearing may temporarily cause waterlogging in localised areas during construction. However, this is considered to be a low risk and a rehabilitation plan should mitigate any potential impacts in the long term.

Given this, and the low rainfall and high evaporation recorded in the area, the proposed clearing is unlikely to cause, or exacerbate, the incidence or intensity of flooding.

Methodology Site Inspection Report (2007)

Water Corporation (2007)

GIS Datasets:

- Hydrographic Catchments - Subcatchments - DOW
- Isohyets - BOM 09/98
- CAWSA Part IIA Clearing Control Catchments - DOW
- Hydrographic Catchments - Catchments - DOE 23/03/05
- Rainfall, Mean Annual - BOM 30/09/01
- Topographic Contours, Statewide - DOLA 12/09/02
- Public Drinking Water Source Areas (PDWSAs) - DOW
- Acid Sulfate Soil Risk Map, Albany-Torbay - DEC

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

Comments

There is a Native Title Claim over the area under application. The Department of Environment and Conservation's advertising of the application in the West Australian newspaper constitutes legal notification of the native title representative body for the purpose of the future act procedures under the Native Title Act 1993. No response was received from the representative body.

Water Corporation Works Approval Application (2007) Hopetoun Wastewater Treatment Plant - Stage 1

Methodology

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Building or Structure	Mechanical Removal	7.4 100	The assessable criteria have been assessed. The proposed clearing may be at variance to Principle (a) and is not likely to be at variance to Principles (b),(c),(d),(e),(f),(g),(h),(l),&(j).

5. References

- Department of Environment and Conservation (2007) Site Visit Inspection Report and Photos. TRIM ref: DOC42049, DOC41710
- 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.
- Department of Water (2007). Advice received from waterways, land use planning and water resource protection sections, Albany. TRIM ref: DOC42580
- Environmental Protection Authority (EPA) (2007) Assessment of Amendment 12 - Lot 6382 Steerdale Road, Hopetoun.
- 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

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- 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 Corporation (Sept 2007) Hopetoun Waste Water Treatment Plant - Associated conveyance and storage infrastructure. DRAFT Flora and Fauna Assessment.
- Western Australian Herbarium, Department of Environment and Conservation. Florabase (<http://florabase.dec.wa.gov.au/>). Accessed 28 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)