



1. Application details

1.1. Permit application details

Permit application No.: 8299/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: City of Albany
Application received date: 18 December 2018

1.3. Property details

Property: Closed Road Reserve (PIN 588431), Collingwood Park
Local Government Authority: Albany, City of
Localities: Collingwood Park

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
0.115	0	Mechanical Removal	Drainage

1.5. Decision on application

Decision on Permit Application: Refuse
Decision Date: 21 February 2020

Reasons for Decision:

The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986* (EP Act). It has been concluded that the proposed clearing is at variance with principles (f), (g), (h) and (i), may be at variance with principles (b) and (e) and is not likely to be at variance with the remaining principles.

Through assessment it was determined that the application area forms part of an ecological linkage that flows from Lake Seppings (conservation category wetland) through to Oyster Harbour which is listed as a Nationally Important Wetland in Western Australia (ANCA Wetland) (Environment Australia, 2001). The linkage follows the natural contours of the inter-dunal swales and floodplain area, providing biological filtration for sediments and nutrients. Advice from the Department of Biodiversity, Conservation and Attractions Wetlands (DBCA) (2019), states that the hydrological connectiveness of this wetland system is an important feature which supports a variety of hydrological regimes within the area.

Furthermore, the proposed removal of sedges (via the mechanical process of sedge scalping) is likely to cause the destabilisation of sediments along the banks, leading to erosion and siltation of downstream environments (DWER, 2019a; DBCA, 2019). This is likely to reduce water quality and impact upon the downstream environmental values of Oyster Harbour.

Additionally, the application area is mapped at a high risk zone for acid sulphate soils (ASS) which are likely to be exposed and mobilised, further impacting the linkage to, and Oyster Harbour itself (DWER, 2019a; DBCA, 2019).

Given the above, the Delegated Officer considered that the proposed clearing is likely to result in unacceptable environmental impacts both within and downstream of the application area. Therefore, the application has been refused.

2. Site Information

Clearing Description The application is to clear 0.115 hectares of native vegetation within Closed Road Reserve (PIN 588431), Collingwood Park, for the purpose of improved drainage (Figure 1).

Vegetation Description The application has been mapped as Beard Southern Jarrah Forest vegetation association which is described as "Sedgeland; reed swamps, occasionally with heath" (Government of Western Australia, 2018).

A site inspection by the Department of Water and Environmental Regulation's (DWER) South Coast Region Branch indicate that the application area primarily consists of a dense understorey of *Gahnia trifida* and *Juncus kraussii* (DWER, 2019a).

Vegetation Condition A review of the photos of the application area has determined that the application area is in a Good (Keighery, 1994) condition, which is described as vegetation that has altered

by multiple disturbances that retains basic vegetation structure or ability to regenerate (DWER, 2019a; Keighery, 1994).

Soil type

The application area has been mapped as the Owingup Subsystem which is described as "Plains with swamps, lunettes and dunes. Yellow solonetzic soils, organic loams and diatomaceous earth; Wattle-Paperbark thickets, Teatree heath and reeds. Podzols on dunes; Banksia-Sheoak woodland" (Schoknecht et al., 2004).

Comment

The local area is defined as a 10 kilometre radius from the application area.



Figure 1a: Application area downstream from Lake Seppings (Conservation Category Wetland) and flowing into Oyster Harbour (ANCA Wetland) (DBCA, 2019). Tidal pools located directly downstream of the application area form part of Oyster Harbour.



Figure 1b: Application area inset (hatched in blue)

3. Assessment of application against clearing principles, planning instruments and other relevant matters

(a) Native vegetation should not be cleared if it comprises a high level of biodiversity.

Proposed clearing is not likely to be at variance with this Principle

According to available databases, 11 threatened flora and 58 priority flora species have been recorded within the local area. Given these conservation significant flora occur in different soils and vegetation types than that mapped within the application area, they are unlikely to occur within the application area. Advice provided by the DWER South Coast Region (DWER, 2019) and photos provided by the applicant (City of Albany, 2019), identified that the application area primarily consists of a dense understorey of *Gahnia trifida* and *Juncus kraussii*. Threatened flora is discussed in more detail under Principle (c).

According to the available databases, three Commonwealth-listed threatened ecological communities (TECs) and six priority ecological communities (PECs) have been mapped within the local area. There are no PECs or state- or Commonwealth-listed TEC's within the application area. Table 1 describes the ecological communities within the local area.

Table 1: Conservation significant ecological communities recorded within the local area

Ecological Community name	State category	C'wth category	Proximity (m)	Direction
Subtropical and Temperate Coastal Saltmarsh	Priority 3	Vulnerable	107	NE
<i>Banksia coccinea</i> Shrubland/ <i>Eucalyptus staeri</i> /Sheoak Open Woodland (Community 14a - Sandiford & Barrett 2010)	Priority 1	Endangered	182	NW
<i>Astartea scoparia</i> Swamp Thicket	Priority 1	not listed	194	NNW
<i>Banksia littoralis</i> woodland / <i>Melaleuca incana</i> Shrubland	Priority 1	not listed	8203	SW
Coastal <i>Melaleuca incana</i> / <i>Taxandria juniperina</i> Shrubland/Closed Forest	Priority 1	not listed	8738	SW
<i>Melaleuca striata</i> / <i>Banksia spp</i> Coastal Heath	Priority 1	Endangered	9858	E

According to the available databases, 39 threatened fauna species, 24 fauna species protected under international agreement, eight Priority 4, three Priority 3, one Priority 1 and five fauna species classified as other specially protected fauna, have been recorded within the local area. Of these threatened species, 22 are terrestrial fauna species. Fauna is discussed in more detail under Principle (b).

Given the above, the application area is unlikely to comprise of a high level of biodiversity.

The proposed clearing is not likely to be at variance with this Principle.

(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.

Proposed clearing may be at variance with this Principle

As discussed under Principle (a), 39 threatened fauna species, 24 fauna species protected under international agreement, eight Priority 4, three Priority 3, one Priority 1 and five fauna species classified as other specially protected fauna, have been mapped within the local area. Of these threatened species, 22 are terrestrial fauna species. Given that the vegetation within the application area primarily consists of sedges, and the relatively small size of the proposed clearing, vegetation within the application area is unlikely to comprise the whole or a part of, or is necessary for the maintenance of significant habitat for fauna.

The application area is within an important hydrological and direct ecological linkage from Lake Seppings, a conservation category wetland, to Oyster Harbour, a Nationally Important Wetland in Western Australia, (ANCA wetland) (Environment Australia, 2001), acting as both an aquatic fauna and riparian ecological corridor (DWER, 2019; DBCA, 2019) (Figure 1a). According to advice provided by DBCA Wetlands Division (DBCA, 2019), the proposed clearing will impact the habitat corridor between Lake Seppings and Oyster Harbour, reducing habitat value and fauna movement.

Given the above, the proposed clearing may be at variance with this Principle.

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.

Proposed clearing is not likely to be at variance with this Principle

As discussed under Principle (a), 11 threatened flora have been recorded within the local area. Given these threatened flora occur in different soil and vegetation types than that mapped within the application area, they are unlikely to occur within the application area. Advice and photos provided by the DWER South Coast Region (DWER, 2019) and photos provided by the applicant (City of Albany, 2019) identified that the application area primarily consists of a dense understorey of *Gahnia trifida* and *Juncus kraussii*. Therefore, the application area is not likely to include, or be necessary for the continued existence of threatened flora.

The proposed clearing is not likely to be at variance with this Principle.

(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.

Proposed clearing is not likely to be at variance with this Principle

There are no TECs mapped within the local area or within the application area.

The proposed clearing is not likely to be at variance with this Principle

(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.

Proposed clearing may be at variance with this Principle

The National Objectives and Targets for Biodiversity Conservation include a target to prevent the clearance of ecological communities with an extent below 30 per cent of that present pre-European settlement (Commonwealth of Australia, 2001).

The local area retains approximately 25 per cent (approximately 8184.60 ha) remnant native vegetation.

The application area falls within the Jarrah Forest Interim Biogeographic Regionalisation of Australia (IBRA) bioregion and is mapped as Beard vegetation association 51, retaining 53.41 per cent and 55.25 per cent of their pre-European vegetation extents respectively (Table 2) (Government of Western Australia, 2019). The City of Albany retains 35.92 per cent of its pre-European vegetation extent.

Despite these extents being above 30 per cent, given that the application provides important environmental values such as soil stabilisation, flood mitigation, bio-filtration, and acts as an ecological and hydrological corridor, the application area is considered significant as a remnant.

The proposed clearing may be at variance with this Principle.

Table 2: Bioregion and vegetation complex statistics (Government of Western Australia, 2019).

	Pre-European Extent	Current Extent Remaining		Current Extent Remaining in DBCA Managed Lands
	(ha)	(ha)	(%)	(%)
IBRA Bioregion				
Jarrah Forest	4,506,660.26	2,406,938.58	53.41	37.13
Vegetation Complex				
Southern Jarrah Forest	59,067.86	32,867.25	55.25	69.21

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Proposed clearing is at variance with this Principle

The application area is mapped within a minor drainage channel and within a multiple use category wetland, which is part of the Lake Seppings Consanguineous Suite (DBCA, 2019). Multiple use wetlands are those with few important ecological attributes and functions (Water and Rivers Commission, 2001). This particular drain flows from Lake Seppings (conservation category wetland), to Oyster Harbour, following the natural contours of the inter-dunal swales and floodplain area and providing biological filtration for sediments and nutrients. According to advice provided by DBCA Wetlands Division (DBCA, 2019), the hydrological connectedness of this wetland system is an important feature which supports the variety of hydrological regimes within the area.

The Environmental Protection Authority (EPA) Guidance Statement 33 identified a minimum 50 metre buffer be applied to wetlands, to protect ecological linkages between a wetland and neighbouring vegetation and to avoid, indirect, direct and cumulative impacts that may adversely affect the attributes and functions of wetland areas (EPA, 2008). In cases where some loss of any wetlands values or functions have occurred, such as with multiple use wetlands, the EPA recommends that compensatory actions are implemented, with a view to achieving 'no net loss of wetland values' (EPA, 2008). The proposed clearing is therefore contrary to best practice management for waterways and wetlands.

The proposed clearing will provide passage for weeds invading into the application area. As discussed within section 2 of this report, vegetation within the application area is in good condition (Keighery, 1994). Subsequently, these edge effects will lower the conservation value of the wetland (DBCA, 2019).

Given the above, and the vegetation consisting primarily of sedges; the application area is growing in, and is associated with a watercourse and wetland.

The proposed clearing is at variance with this Principle.

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Proposed clearing is at variance with this Principle

. As discussed within section 2, the application is mapped as the Owingup Subsystem (Schoknecht et al., 2004).

The land degradation risk categories that apply to this subsystem are demonstrated in Table 3. Soils have been mapped as having a low to moderate water erosion risk (3-10% of map unit has a high to extreme water erosion risk). This may be due to the bivalve shells covering the stream bed. However, advice from DWER South Coast Region and DBCA wetlands division, indicate that the removal of sedges (via the mechanical process of sedge scalping) is likely to cause the destabilisation of sediments along the banks, leading to erosion and siltation of the downstream environments (DWER, 2019: DBCA 2019). Additionally, soils have been mapped as having a high waterlogging risk (>70% of map unit has a moderate to very high waterlogging risk).

As discussed under Principle (f), further degradation in the remaining vegetation is likely, as a result of edge effects from weed invasion (DCBA, 2019).

Given the above, the proposed clearing is likely to cause appreciable land degradation.

The proposed clearing is at variance with this Principle.

Table 3: Land degradation risks categories (DPIRD, 2019)

Risk Category	Owingup Subsystem
Wind erosion	10-30% of map unit has a high to extreme wind erosion risk
Water erosion	3-10% of map unit has a high to extreme water erosion risk
Flood Risk	10-30% of the map unit has a moderate to high flood risk
Water logging	>70% of map unit has a moderate to very high waterlogging risk
Salinity	3-10% of map unit has a moderate to high salinity risk or is presently saline

(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.

Proposed clearing is at variance with this Principle

According to available databases, 14 conservation areas have been mapped within the local area.

Oyster Harbour (WA051) is listed as a Nationally Important Wetland in Western Australia (ANCA Wetland) (Environment Australia, 2001). It occurs approximately 1339 metres downstream of the application area (Figure 1a). Oyster Harbour is a major nursery and feeding area for estuarine fishes and other marine fauna (DBCA, 2019). As discussed above, the proposed clearing of the sedges is likely to cause the destabilisation of the sediments along the banks, resulting in erosion and siltation on downstream environments, such as Oyster Harbour (Figure 2). Ultimately, this will overall contribute to degraded water quality arriving into Oyster Harbour (DBCA, 2019).

Subsequently, the proposed clearing is likely to impact on the environmental values of Oyster Harbour.

The proposed clearing is at variance with this Principle.

(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.

Proposed clearing is at variance with this Principle

Groundwater salinity within the application area is mapped as between 500 and 1000 total dissolved solids, milligrams per litre. This level of groundwater salinity is classified as “marginal”.

The application area is mapped within a high risk zone for Acid Sulfate Soils (ASS). Photographs provided by the DWER South Coast Planning Branch show iron coloured sediments, demonstrating that the proposed scalping of sediments will expose these ASS areas, mobilising the acid into the waterway, and threatening Oyster Harbour downstream (Figure 3) (DWER, 2019). This is supported further by advice received from DBCA Wetlands Division (DBCA, 2019).

Additionally, advice from DWER South Coast Region indicate that the removal of sedges is likely to cause destabilisation of sediments along the banks leading to erosion and siltation of the downstream environments, impacting on water quality (DWER, 2019). DBCA wetlands division also advise that the proposed clearing of sedges within the drainage channel will destabilise the sediments, leading to erosion and sedimentation downstream, emphasizing that the proposed clearing is likely to have detrimental impacts on overall water quality.

Given the above, the application area may cause the deterioration in the quality of surface water or underground water.

The proposed clearing is at variance with this Principle.

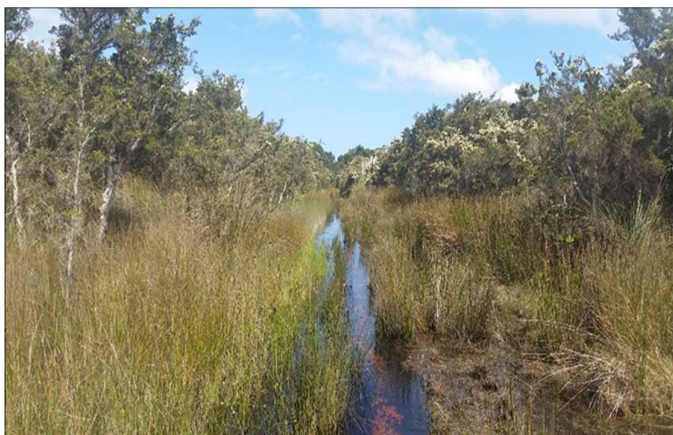


Figure 2: Photographs within the application area confirming the likely presence of active acid sulphate soils (ASS). Disturbance of these sediments is likely to activate the release of ASS into the watercourse and into downstream Oyster Harbour (DWER, 2019).

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Proposed clearing is not likely at variance with this Principle

As discussed in Principle (g), given that soils within the application area are mapped as having a low flood risk (10-30% of the map unit has a moderate to high flood risk), and the relatively small size of the proposed clearing, the application area is not likely to cause, or exacerbate the incidence or intensity of flooding.

The proposed clearing is not likely at variance with this Principle.

Planning instruments and other relevant matters.

No Aboriginal sites of significance have been mapped within the application area.

The clearing permit application was advertised on the DWER website on 11 January 2019 with a 21 day submission period. No public submissions have been received in relation to this application.

The DWER South Coast Planning advice Branch, indicate that the application area is contrary to the City of Albany's draft policy on *Upgrades and maintenance of watercourses and drainage channels*. This policy advises that "watercourses and drainage channels and their associated vegetation should be left in as undisturbed a state as possible, unless extraordinary circumstances apply. Notwithstanding this, Council recognises that there are instances in which the condition of watercourses may deteriorate as a result of erosion and/or sedimentation, overgrowth with weeds or dumping or accumulation of rubbish. In such cases, where there is an identifiable public interest it is recognised that maintenance and/or rehabilitation of these waterways may be required" (City of Albany, 2018b). Given that the above policy does not refer to flood mitigation as a cause to intervene, the proposed clearing going against best management practices.

DWER South Coast Planning advice Branch stressed that the site provides an important ecological connection between the conservation category wetland, Lake Seppings, and the nationally significant waterbody, Oyster Harbour, that the site provides an important ecological function as wetland habitat, and provides ecosystem services such as water filtering, soil stabilisation and flood mitigation (DWER, 2019). The Wetlands Division has supported this advice stating that the application area provides an important ecological function as wetland habitat along with water filtration, flood mitigation and soil stabilisation (DBCA, 2019).

The City of Albany has advised that no notifiable excavation of potential ASS exceeding 100 cubic metres will be undertaken. According to advice from DWER South Coast Region and DBCA wetlands division, any clearing of the sedges will scrape away at the channel banks, resulting in potential ASS being disturbed (DWER, 2019; DBCA, 2019).

A Bed and Banks permit under the *Rights in Water and Irrigation Act 1914* would not be required in this situation.

4. Applicant's submissions

To address the impacts identified above, a request for more information letter was sent to the City of Albany on 11 March 2019. Further information regarding justification of the proposed clearing, including reasons why the purpose of the clearing is considered as "extraordinary circumstance" as well as evidence of the proposed works delivering the desired outcome of flood mitigation, was also requested.

The City of Albany provided their comments on 9 April 2019. Their response is summarised as follows;

- The City of Albany receives many enquiries from residents within the Lake Seppings catchment, regarding concerns over land use and extended flooded periods;
- The City of Albany proposal does not describe or intend to interfere with the banks of the waterways;
- The stream bed is covered by marine sediments and bivalve shells, this marine sediment is consistent with the areas proposed to be scaled and will behave as the existing stable stream bed. The only sedimentation that may occur is minor soil disturbance during the mechanical process of sedge scalping;
- Any resultant sediments would be collected in tidal pools in the delta areas where the water speed drops to negligible and far below that which causes fluvial erosion;
- Manning equation discussed – the widening of the stream, results the velocity, therefore overall erosive potential;
- The depth of scalping will not exceed the depth of the current flow path invert and measure a depth of 150mm. This occurs in the aerated root zone of the sedges and any present ASS soils have and are subject to ongoing oxidization. It should also be noted that this depth is half the recommended depth to first soil sample testing in accordance with DWER Guidelines;
- Groundwater levels will not be altered, the depth of the current flow path will not be exceeded;
- There is no intention of exceeding excavation volumes greater than 100 cubic metres;
- Statements lack underlying evidence or supporting science;
- The proposed clearing will result in a high water level hydro-period that is more consistent with the state of the waterway pre residential development;
- The works that are proposed will not measurably impact on any environmental values of Oyster Harbour;
- The City of Albany would not have sought to advance any request that was not following best practice and has provided reasoning and likely impacts of the required clearing;
- The term used by the City of Albany in defining 'extraordinary circumstances' is defined by City Staff to determine the application of City resources such as expertise, time and discal resourcing;
- The City of Albany recognises that the limited scale of clearing will have a limited response;
- The City of Albany believes that the clearing will assist in reducing hydro-period; and

- Discussed the natural laws of science – Volumetric Flow Rate equation.

In response to these comments provided by the City of Albany, DWER consulted with River Science Branch on 18 April 2019 and requested wetland advice from the DBCA wetlands division on 18 April 2019. Outcomes of this meeting and advice from DBCA have been added to the report.

Due to the proposed works being contrary to best practice, they have provided the following resources to provide guidance on maintaining drains and waterways. They also suggest the City of Albany engage in an education awareness program on the values of surrounding wetland systems and the value of riparian vegetation along waterways and discourage further proposed drainage works that can alter drainage regimes and water quality of receiving waters (DBCA, 2019):

- Water Sensitive Urban Design principals on Department of Water website (<http://www.water.wa.gov.au/urban-water/urban-development/urban-water-design>);
- Wetland publication on DBCA's website such as Water Notes: Values of the riparian zones and Water Notes: Protecting riparian vegetation (<https://www.dpaw.wa.gov.au/management/wetlands/publications-and-links>);
- The DWER Better Urban Water design program: A guide to managing wetlands in Western Australia available on DBCA's website (<https://www.dpaw.wa.gov.au/management/wetlands/publications-and-links>)

5. References

Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2006, Canberra.

City of Albany (2019) Application form excerpt, City of Albany, Western Australia (DWER A1754312).

City of Albany (2018a) DWER advice sought for any notification requirements, City of Albany, Western Australia (DWER 1761254).

City of Albany (2018b) Infrastructure and Environment – Upgrades and maintenance of watercourses and drainage channels, City of Albany, Western Australia.

Department of Biodiversity, Conservation and Attractions (DBCA) (2007) NatureMap Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed February 2019.

Department of Biodiversity, Conservation and Attractions (DBCA) (2019) Wetlands advice received 8 May 2019, Department of Parks and Wildlife, DWER A1786939

Department of Water and Environmental Regulation (DWER) (2019a) South Coast Regional Advice, received 1 February 2019 Department of Water and Environmental Regulation, Western Australia, DWER A1761254.

Department of Water and Environmental Regulation (DWER) (2019b) Site photos, DWER South Coast Region, Western Australia DWER A1769067.

Department of Water and Environmental Regulation (DWER) (2019c) River Science advice received 1 March 2019, Western Australia, DWER A1769201.

Department of Primary Industries and Regional Development (DPIRD) (2019). NRInfo Digital Mapping. Accessed at <https://maps.agric.wa.gov.au/nrm-info/> Accessed March 2019. Department of Primary Industries and Regional Development. Government of Western Australia.

Environment Australia (2001) A Directory of Important Wetlands in Australia, Third Edition, Environment Australia, Canberra.

Environmental Protection Authority (EPA) (2008) Environmental Guidance for Planning and Development, Guidance Statement No. 33, Environmental Protection Authority.

Government of Western Australia (2018) 2017 State-wide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of February 2018. WA Department of Parks and Wildlife, Perth.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Schoknecht et al. (2004) Soil-landscape mapping in south-Western Australia: an overview of methodology and outputs, Department of Agriculture and Food, Perth.

Water and Rivers Commission (2001) Position Statement: Wetlands, Water and Rivers Commission, Perth

6. GIS Datasets

- Aboriginal Sites of Significance
- Clearing Regulations - Environmentally Sensitive Areas
- Carnaby's cockatoo: breeding, roosting, feeding
- Consanguineous Wetlands Suites (DBCA-020)
- Directory of Important Wetlands in Australia – Western Australia
- Department of Biodiversity Conservation and Attractions, Tenure
- Geomorphic Wetlands, South Coast
- Groundwater salinity, statewide
- Hydrology, linear
- IBRA Australia
- Land for Wildlife
- PDWSA, CAWSA, RIWI Act Areas
- Remnant vegetation
- SAC Biodatasets (accessed February 2018)
- Soils Landscape Mapping – Best available
- South Coast Significant Wetlands
- South West Forest Vegetation