

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:

CPS 6538/1

Permit Holder:

City of Cockburn

Duration of Permit:

31 October 2015 to 30 June 2021

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I-CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of road widening.

2. Land on which clearing is to be done

Lot 304 on Deposited Plan 50276 (Reserve 49220), Coogee Railway Reserve (PIN 293242), Coogee

3. Area of Clearing

The Permit Holder must not clear more than 0.074 hectares of native vegetation within the area cross hatched yellow on attached Plan 6538/1a.

4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the activities described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for those activities under the *Local Government Act 1995* or any other written law.

PART II - MANAGEMENT CONDITIONS

6. Dieback and weed control

When undertaking any clearing authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of weeds and dieback:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no dieback or weed-affected soil, mulch, fill or other material is brought into the area to be cleared:
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

7. Offset

In relation to the area cross hatched red on attached Plan 6538/1b the Permit Holder must implement and adhere to the City of Cockburn Poore Grove Widening Revegetation Plan version 1.2, 23 September 2015.

PART III - RECORD KEEPING AND REPORTING

8. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to condition 7 of to this Permit:

- (a) a description of the offset activities undertaken; and
- (b) a copy of each offset monitoring report.

9. Reporting

- (a) The Permit Holder must provide to the CEO on or before 1 July of each year, a written report:
 - (i) of records required under condition 8 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 July to 30

 June of the preceding financial year.
- (b) If no clearing authorised under this Permit was undertaken between 1 July to 30 June of the preceding financial year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 1 July of each year.
- (c) Prior to 30 March 2021 the Permit Holder must provide to the CEO a written report of records required under condition 8 of this Permit where these records have not already been provided under condition 9(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

dieback means the effect of Phytophthora species on native vegetation;

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

weed/s means any plant -

- (a) that is a declared pest under section 22 of the Biosecurity and Agriculture Management Act 2007; or
- (b) published in a Department of Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.

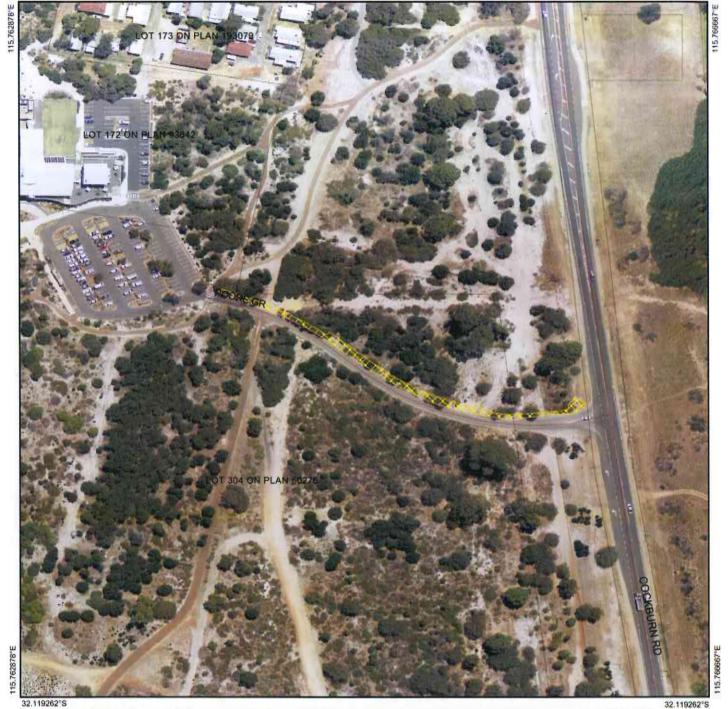
Jane Clarkson

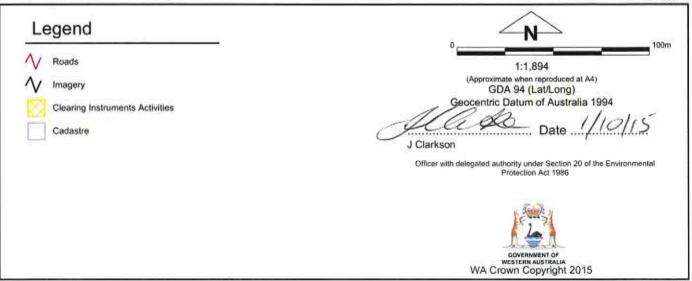
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CLEARING REGULATION

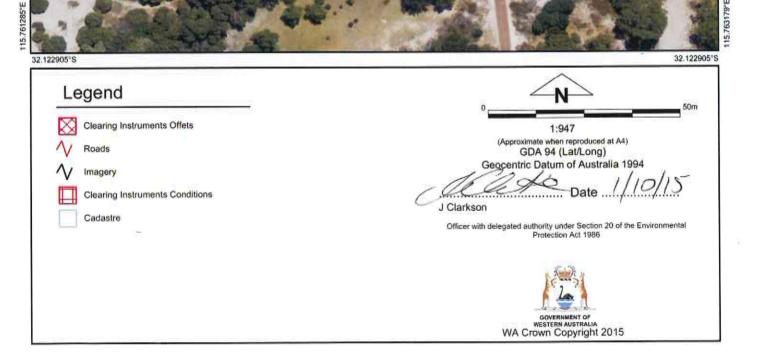
Officer delegated under Section 20 of the Environmental Protection Act 1986

1 October 2015











Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.:

6538/1

Permit type:

Purpose Permit

1.2. Applicant details

Applicant's name:

City of Cockburn

1.3. Property details

Property:

RAILWAY RESERVE - (PIN 293242), COOGEE LOT 304 ON DEPOSITED PLAN 50276, COOGEE

Colloquial name:

Local Government Authority:

DER Region: DPaW District:

LCDC: Localities: COCKBURN, CITY OF

Greater Swan SWAN COASTAL

COOGEE

1.4. Application

Clearing Area (ha)

No. Trees

Method of Clearing Mechanical Removal For the purpose of:

Road construction or upgrades

1.5. Decision on application

Decision on Permit

Granted

Application: Decision Date:

0.074

1 October 2015

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

The vegetation under application is mapped as: Beard Vegetation Association: 998: Medium woodland: tuart (Shepherd et al. 2001) Heddle Vegetation Complex: Cottesloe Complex-Central And\South : of woodland Mosaic of gomphocephala Eucalyptus (Tuart) and open forest of Eucalyptus gomphocephala (Tuart) - Eucalyptus marginata (Jarrah) - Corymbia calophylla (Marri); closed heath on the Limestone outcrops (Heddle et al. 1980).

clearing of 0.074 hecatres within Lot 304 on Deposited Plan 50276 and rail reserve (PIN 293242), Coogee is

for the purpose of road widening.

Vegetation Condition

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

To

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)

Comment

The vegetation description and condition was determined from a fauna flora and undertaken of the application area in October 2014 (City of Cockburn 2015). The vegetation under application consist of Agonis flexuosa and Callitris preissii open woodland over Acacia rostellifera shrubland over Acanthocarpus preissii occuring in a very good to completely degraded (Keighry (City condition 1994) Cockburn 2015).

3. Assessment of application against clearing principles

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

Comments

Proposed clearing is at variance to this Principle

The vegetation under application consists of Agonis flexuosa and Callitris preissii open woodland over Acacia rostellifera shrubland over Acanthocarpus preissii occurring in a very good to completely degraded (Keighery 1994) condition (City of Cockburn 2015).

A flora and fauna survey of the application area was conducted in October 2014. The survey recorded 16 species within the subject site including three weed species. No rare or priority flora species were recorded during the survey (City of Cockburn 2015).

Approximately 0.047 hectares of the application area is mapped as a Threatened Ecological Community (TEC).

The flora survey identified the TEC Floristic Community Type (FTP) 30a – Callitris preissii (or Melaleuca lanceolata) forest and woodlands within the application area. Seven individuals of Callitris preissii, including saplings and mature trees occur within the area proposed to be cleared (City of Cockburn 2015).

The application area lies within a number of designated conservation areas including Bush Forever Site 341 (Woodman Point, Coogee/Munster) and the Woodman Point Regional Park. The vegetation under application is part of a significant remnant in a highly cleared area (20 percent native vegetation remaining in 10 kilometre radius) due predominantly to residential and industrial development in the local area, and has been recognised as supporting a 'Contiguous or largely contiguous Regionally Significant Bushland/Wetland Linkage' (Government of Western Australia 2000).

Given the reasons above it is concluded that the vegetation under application comprises a high level of biological diversity and is therefore at variance to this principle.

To mitigate the environmental harm identified in this assessment, the Department of Environment Regulation has approved the applicant's proposed offset and revegetation plan which comprises revegetation of 0.25 hectares of the TEC, FTP 30a – Callitris preissii (or Melaleuca lanceolata) forest and woodlands, within Woodman Point Regional Park.

Methodology

References

- -City of Cockburn (2015)
- -Government of Western Australia (2000)
- -Keighery, B.J. (1994)

Databases

- -SAC Bio Datasets (29 April 2015)
- -NWLRA, Extent of Native Vegetation

(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

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

The applied clearing area lies within the Woodman Point Regional Park (WPRP) which provides habitat for fauna in an area that has been extensively cleared predominantly for residential development.

The application area contains two habitat types, being Acacia rostellifera shrubland with scattered Agonis flexuosa and Callitris preissii and re vegetation areas (Western Wildlife 2014).

A level one fauna survey of the application area including a small area in the same vicinity for a proposed car park, found that the area has the potential to support nine fauna species of conservation significance. These species being the white-bellied sea eagle (Haliaeetus leucogaster), peregrine falcon (Falco pereginus). Carnaby's cockatoo (Calyptorhynchus latirostris), forest red-tailed black cockatoo (Calyptorhynchus banksii naso), fork-tailed swift (Apus pacificus), rainbow bee-eater (Meropus ornatus), Perth lined Lerista (Lerista lineata), black-striped snake (Neelaps calonotos) and the quenda (Isoodon obesulus). Given the small size of the application area, that it is long and linear and adjacent to an existing road, the proposed clearing is not likely to impact on significant habitat for these species.

The application area has been identified as occurring within a 'contiguous or largely contiguous regionally significant bushland/wetland linkage' (Government of Western Australia 2000). Given the relatively small size of the proposed clearing (0.074 hectares) it is not likely to significantly reduce the movement of fauna across this ecological linkage.

Given the above, the application area is not likely to contain significant habitat for fauna. The proposed clearing is not likely to be at variance to this Principle.

Methodology

References

- -Government of Western Australia (2000)
- -Western Wildlife (2014)

GIS Databases

-Parks and Wildlife Tenure

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

Comments

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

Two rare flora species have been recorded within the local area (10 kilometre radius) of the applied clearing area, species one occurring approximately 6.3 kilometres east of the applied clearing area and species two, recorded within the Cockburn Sound area.

Species one inhabits areas of deep sandy soil below Eucalyptus marginata (jarrah) and Banksia woodland and tends to favour areas of lush undergrowth (Brown et al. 1998).

Species two is known from only one record within the local area from 1900. This species inhabits sandy soils in

open Eucalyptus marginata (jarrah) woodland and sandy plains (Brown et al. 1998).

The vegetation under application consists of Agonis flexuosa and Callitris preissii open woodland over Acacia rostellifera shrubland over Acanthocarpus preissii occurring in a very good to completely degraded (Keighery 1994) condition (City of Cockburn 2015).

The records of rare flora within the local area are within different vegetation and soil types to that within the proposed clearing site. A spring flora survey of the application area was conducted in October 2014. The survey recorded 16 species within the subject site including three weed species. No rare species were recorded during the survey (City of Cockburn 2015).

Given the above, it is not likely for the proposed clearing to impact on rare flora habitat and the proposed clearing is not likely to be at variance to this Principle.

Methodology

References

- Brown et al (1998)
- -City of Cockburn (2015)
- -Keighery (1994)
- **GIS Databases**
- -SAC Bio Datasets (29 April 2015)
- -Soils, statewide
- -Pre-European vegetation

(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

Proposed clearing is at variance to this Principle

The vegetation under application consists of Agonis flexuosa and Callitris preissii open woodland over Acacia rostellifera shrubland over Acanthocarpus preissii occurring in a very good to completely degraded (Keighery 1994) condition (City of Cockburn 2015).

The flora survey identified the threatened ecological community (TEC) Floristic Community Type (FTP)30a – Callitris preissii (or Melaleuca lanceolata) forest and woodlands within the application area. This TEC is classed as 'Vulnerable' by the Department of Parks and Wildlife. It is estimated that approximately 0.047 hectares of the TEC occurs within the application area including seven individuals of Callitris preissii, both saplings and mature trees (two) (City of Cockburn 2015).

This TEC is known from 44 individual occurrences totalling 627 hectares across a range of less than 45 kilometres from Rockingham to Trigg in six separate areas. The majority of these occurrences occur off the mainland on Garden Island (455 hectares). Eleven occurrences are on the mainland and cover 172 hectares. The occurrence that contains the application area is the largest mainland occurrence at 102 hectares and has been subject to incremental and cumulative impacts from previous proposals to clear. This occurrence is also subject to a high level of recreational impacts, too frequent fires and significant weed invasions (Parks and Wildlife 2015).

Large mature Callitris preissii are particularly important for sustaining occurrences of the TEC as they produce prolific quantities of seed and replenish soil stored seed banks (Parks and Wildlife 2015). The proposed clearing will impact on two mature Callitris preissii. Given that the proposed clearing contains this TEC, it is at variance to this Principle.

To mitigate the environmental harm identified in this assessment, the Department of Environment Regulation has approved the applicant's proposed offset and revegetation plan which comprises revegetation of 0.25 hectares of the TEC, FTP 30a – Callitris preissii (or Melaleuca lanceolata) forest and woodlands, within Woodman Point Regional Park.

Methodology

References

- -City of Cockburn (2015)
- -Keighery (1994)
- -Parks and Wildlife (2015)

GIS Databases

-Sac Bio Datasets (29 April 2015)

(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

Proposed clearing may be at variance to this Principle

The vegetation under application is mapped as Heddle vegetation complex Cottesloe complex central and south which has 33 per cent of pre-European vegetation remaining. The mapped Beard vegetation association 998 has 38 per cent of pre-European vegetation extent remaining.

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents the clearance of ecological communities with an extent below 30 per cent of that present pre-European settlement, below which species loss appears to accelerate exponentially at an

ecosystem level (Commonwealth of Australia 2001). The Environmental Protection Authority (2006) recognizes the Perth Metropolitan Region as a 'constrained area', providing for the variation of the minimum percentage of vegetation complexes remaining to 10 per cent of the pre-European extent. All of the mapped vegetation associations/complexes have more than 10 per cent of their pre-European extent remaining. The local area (10 kilometres) has approximately 20 per cent vegetation remaining.

The application area may be significant as a remnant in an extensively cleared landscape as it contains regionally significant native coastal vegetation, a TEC and is part of a remnant of vegetation that contributes to a north-south bushland ecological corridor that is a largely continuous wetland/bushland linkage of regional significance (Government of WA, 2000).

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

				Extent in Parks and Wildlife
	Pre-European	Current Extent	Remaining	Managed Lands
	(ha)	(ha)	(%)	(%)
IBRA Bioregion*				
Swan Coastal Plain	1,501,222	586,975	39	36
Shire*				
City of Cockburn	17,086	5,339	31	17
Beard Vegetation Association in Bi	oregion*			
998	50,867	18, 866	37	42
Heddle Vegetation Complex ** Cottesloe Complex - Central and	45,300	15,026	33	119040
South	45,500	10,020	00	13

Methodology

References

- -Commonwealth of Australia (2001)
- -EPA (2006)
- *Government of Western Australia (2014)
- -Keighery (1994)
- **Parks and Wildlife (2015a)
- **GIS Databases**
- -Heddle Vegetation Complexes
- -NLWRA, Current Extent of Native Vegetation
- -Pre-European Vegetation

(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

Proposed clearing is not at variance to this Principle

The application area is 204 meters east of the coastline. The nearest wetland to the area proposed to be cleared is Lake Coogee occurring 1.1 kilometres east of the application area. The closest watercourse to the applied clearing area is the Swan River, approximately 10 kilometres north of the applied clearing area.

No wetland dependent vegetation was identified within the flora survey of the application area (City of Cockburn 2015).

Given the distance of the application area to the nearest wetland and watercourse, the vegetation under application is not growing in association with an environment associated with a watercourse or wetland and therefore the proposed clearing is not at variance to this Principle.

Methodology

References

-City of Cockburn (2015)

GIS Databases

- -Hydrography linear
- -Geomorphic Wetlands (Swan Coastal Plain)

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

Comments

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

The application area is located on the Quindalup dune system and is characterized by low undulating fore dunes with variably thick sand overlaying limestone (City of Cockburn 2015). The chief soils within the applied clearing area have been mapped by Northcote et al (1960-68) as being siliceous white sands within an

undulating dune landscape. Sandy soils have a high risk of wind erosion.

The sandy soils within the application area allow for free flowing drainage and any surface runoff is likely to infiltrate at source (City of Cockburn 2015). The risk of water erosion is therefore considered low.

The majority of this site is mapped as having a low salinity risk with some areas towards the east of the site mapped as medium to high. The groundwater is considered brackish having 1500-3000 mg/L total dissolved solids.

Given the relatively small application areas (0.074 hectares) it is unlikely the proposed clearing will cause appreciable land degradation in the form of wind erosion and it is therefore not likely to be at variance to this Principle.

Methodology

References

-City of Cockburn (2015)

-Northcote et al. (1960-68)

GIS Databases

- -Soils, statewide
- -Groundwater salinity
- -Salinity Risk

(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

Proposed clearing is at variance to this Principle

The application area is part of the Bush Forever Site 341 (Woodman Point, Coogee/Munster) and 0.06 hectares is within the Woodman Point Regional Park (WPRP), a Conservation Park vested with the Conservation Commission of Western Australia.

Bush Forever Site 341 (Woodman Point, Coogee/Munster) has been included for special protection due to its representation of ecological communities, rarity, general criteria for the protection of wetland, streamline and estuarine fringing vegetation and coastal vegetation (Government of Western Australia, 2000). The removal of the vegetation under application will result in the clearing of a portion of a threatened ecological community (TEC) as well as areas of conservation significance.

Given the above the proposed clearing is at variance to this Principle.

To mitigate the environmental harm identified in this assessment, the Department of Environment Regulation has approved the applicant's proposed offset and revegetation plan which comprises revegetation of 0.25 hectares within WPRP and Bush Forever site 341.

Methodology

References

-Government of Western Australia (2000)

GIS Databases

- -Parks and Wildlife Tenure
- -Bush Forever

(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

Proposed clearing is not at variance to this Principle

Lake Coogee is mapped 1.1 kilometres east of the application area. The closest watercourse to the applied clearing area is the Swan River, approximately 10 kilometres north of the applied clearing area.

The chief soils within the applied clearing area have been mapped by Northcote et al. (1960-68) as being siliceous white sands within an undulating dune landscape. The sandy soils within the application area allow for free flowing drainage and any surface runoff is likely to infiltrate at source (City of Cockburn 2015).

The majority of this site is mapped as having a low salinity risk with some areas towards the east of the site mapped as medium to high. The groundwater is considered brackish having 1500-3000 mg/L total dissolved solids.

Given the relatively small size of the proposed clearing, it is unlikely that it will cause deterioration in the quality of surface or groundwater. The proposed clearing is not at variance to this Principle.

Methodology

References

- -Northcote et al. (1960-68)
- -City of Cockburn (2015)

GIS Databases

- -Hydrography linear
- -Geomorphic Wetlands (Swan Coastal Plain)
- -Salinity Risk
- -Groundwater salinity

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

Comments

Proposed clearing is not at variance to this Principle

Lake Coogee is mapped 1.1 kilometres east of the application area. The closest watercourse to the applied clearing area is the Swan River, approximately 10 kilometres north of the applied clearing area.

The chief soils within the applied clearing area have been mapped by Northcote et al (1960-68) as being siliceous white sands within an undulating dune landscape. The sandy soils within the application area allow for free flowing drainage and any surface runoff is likely to infiltrate at source (City of Cockburn 2015).

Given the sandy soils and distance to the nearest wetland and watercourse, the proposed clearing will not cause or exacerbate flooding. The proposed clearing is not at variance to this Principle.

Methodology

References

- -Northcote et al. (1960-68)
- -City of Cockburn (2015)
- **GIS Databases**
- -Soils, statewide
- Hydrography, linear
- Geomorphic Wetlands (Swan Coastal Plain)

Planning instruments and other relevant matters.

Comments

The proposed clearing of 0.074 hectares within Lot 304 on Deposited Plan 50276 and rail reserve (PIN 293242), Coogee is for the purpose of road widening. The applicant has advised that the area proposed to be cleared has been minimised as much as possible through the road design process to minimise impact on native vegetation.

To mitigate the environmental harm identified in this assessment, the Department of Environment Regulation has approved the applicant's proposed offset and revegetation plan which comprises revegetation of 0.25 hectares of the TEC, FTP 30a — Callitris preissii (or Melaleuca lanceolata) forest and woodlands, within Woodman Point Regional Park. The applicant has also advised that fencing of the northern edge of the new road will also be completed to prevent vehicle access into the adjacent TEC.

Road widening is required as traffic studies of Poore Grove have identified that widening will ensure road user safety and will allow for the increasing traffic flows from the Coogee Beach Surf Life Saving Club (City of Cockburn 2015).

The application area falls within an area of Reserve 49220 (within Woodman Point Regional Park) which has been granted approval by the Conservation Commission of Western Australia and the Minister for Environment in July 2014 to be excised and transferred to neighbouring Reserve 24306 managed by the City of Cockburn for the purpose of the Coogee Beach Surf Life Saving Club. The proposed excision will not require any changes to the boundary of Woodman Point Regional Park. The finalisation of the excision has not occurred as it requires an Act of Parliament.

Department of Planning (2015) has advised that there is a general presumption against clearing within Bush Forever areas except where a proposal is consistent with the overall purpose and intent of an existing reserve or can be reasonably justified with regards to the wider environmental, social and economic needs and reasonable offset strategies are secured to offset loss of significant bushland. Department of Planning considered that as the area of clearing is small the impact to Bush Forever site 341 will not be significant and that the proposal may be justified with regard to wider social, economic and safety reasons. However to ensure the integrity of the Bush Forever area is upheld the Department of Planning has recommended that a rehabilitation strategy/ offset package is prepared prior to clearing and that construction, access, drainage and maintenance shall not result in further disturbance within Bush Forever area 341 (Department of Planning 2015).

The area under application is zoned as Parks and Recreation and Primary Regional Road under the Metropolitan Regional Scheme and Recreation in the Woodman Point Regional Park Management Plan. Under the Woodman Point Regional Park Management Plan the recreation zone in which the application area occurs has a prime management emphasis on providing a variety of recreation opportunities while minimising the impact of visitor activities through the sensitive placement and provision of access and facilities (DEC 2010).

No Aboriginal sites of significance are mapped within the application area.

A small portion of the application area falls within the approved offset area for a previous neighbouring clearing permit CPS 3349/2 granted on 11 January 2010. The offset involved revegetation of areas around the Coogee Beach Surf Life Saving Club. This permit expired on 11 January 2015.

Methodology

References

- City of Cockburn (2015)
- -Department of Planning (2015)

- DEC (2010) GIS Databases
- -Perth Metropolitan Regional Scheme Zones
- -Aboriginal Sites of Significance

4. References

Brown A., Thomson-Dans C. and Marchant N.(1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.

City of Cockburn (2015) Poore Grove Widening Flora and Fauna Report March 2015. City of Cockburn DER ref A897259.

Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.

DEC (2010) Woodman Point Regional Park Management Plan. Department of Environment and Conservation on behalf of the Conservation Commission of Western Australia.

Department of Planning (2015) Bush Forever Advice for clearing permit application CPS 6538/1 – City of Cockburn. DER ref A912626.

EPA (2006) Guidance for the Assessment of Environmental Factors - Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region. Guidance Statement No 10. Environmental Protection Authority, Western Australia.

Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.

Government of Western Australia (2014) 2014 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of June 2014. WA Department of Parks and Wildlife, Perth.

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.

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.

Parks and Wildlife (2015a) 2015 South West Forest and Swan Coastal Plain Vegetation Complex Statistics: a report prepared for the Department of Environment Regulation. Current as of March 2015. Department of Parks and Wildlife, Perth, Western Australia.

Parks and Wildlife (2015) Threatened Ecological Community advice for clearing application CPS 6538/1 – City of Cockburn. Department of Parks and Wildlife.

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.

Western Wildlife (2014) Targeted Vertebrate Fauna Survey Poore Grove, Coogee. December 2014. Prepared for Regen4 Environmental Services. DER ref A897259.